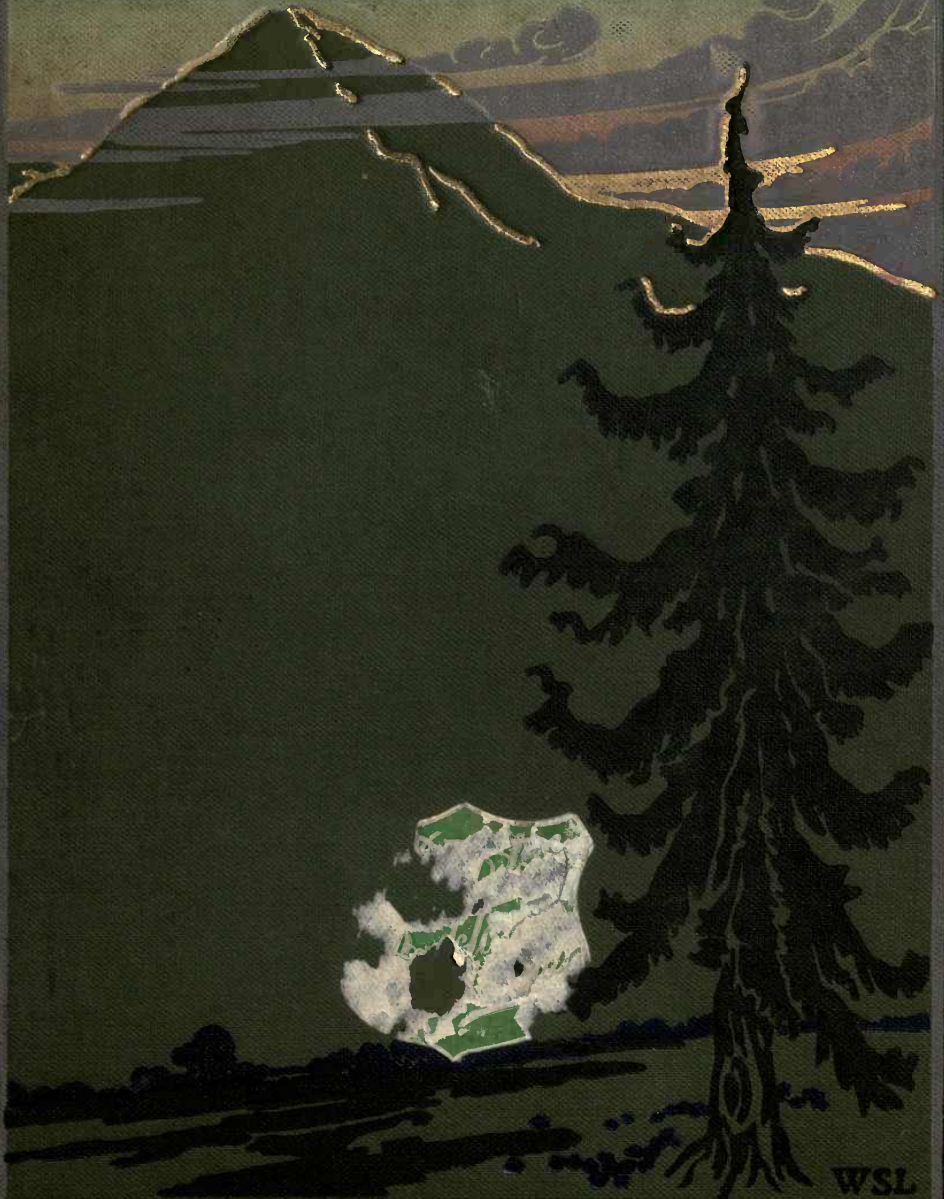


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WILD LIFE IN WALES



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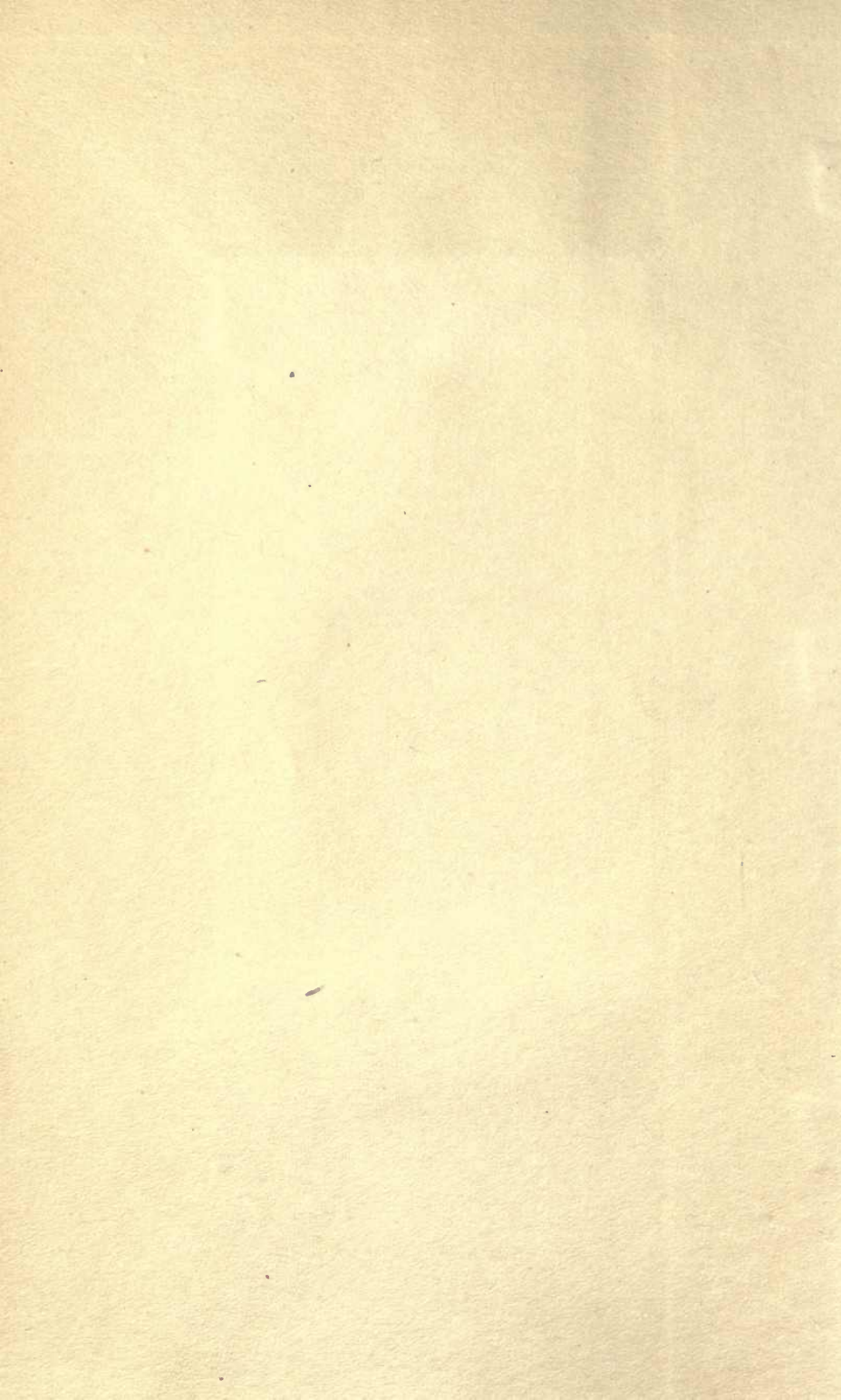
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WILD LIFE
IN WALES





PHEASANT ON NEST.

WILD LIFE IN WALES

BY
GEORGE BOLAM



LONDON
FRANK PALMER
12-14 RED LION COURT

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CONTENTS

CHAPTER I

PAGE

Introductory—Lack of English—No schooling—Music—"A cup of tea?"—
 Poultry—Oatcakes—Pancakes—Eggs—Lipton—Dewar—Small farms—
 Wild sheep—Leading sheep—Collies—Numbers of dogs and sheep—
 Blue Merles—Sheep-worrying—Sheep fairs—Welsh mutton I

CHAPTER II

Agricultural Customs—Changes of tenancy—Valuations of sheep—Types of
 sheep—Clipping lambs—Long names—Contented farmers—Black cattle—
 Bulls—Ploughing—Threshing—Winnowing—Agricultural improvements
 —Old milestone—Meanness 9

CHAPTER III

Llanuwchllyn—Bala Lake—Cymmer Abbey—"Bala has gone and will go
 again"—Fair Vale of Edeirnion—And legend of—the Dee—Grayling—
 Salmon—Trout—Angling season—Size of trout—Pike—Miller's-thumb—
 Pike fishing—Perch—Gudgeon—Minnows 18

CHAPTER IV

Gwyniads—Numbers—Dimensions—And uses of—Ancient lay—Roach—Rudd
 —Breems—Hybrid fish—Eels 30

CHAPTER V

Bala Lake—Geological features—Llan-y-cil—Wildfowl—Habits of—Possible
 increase of—Grebes—Coots—Efficient watchers—Sentinels 39

CHAPTER VI

Cormorants—Rapacity of—Swallowing powers—Prototypes of heraldry—As
 food—Sparrow pie and other dainties—Shags 46

CHAPTER VII

Dabchicks—Great Crested Grebes—Teal—Falcons—"Vermin"—A brilliant
 meteor—Buzzards—Kestrels 52

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	PAGE
CHAPTER VIII	
Dolgelly—The water-shed—Drws-y-nant—Monks of Cymmer Abbey—Gold—Nannaw—The Demon Haunt—Age of oaks—Caterpillar plagues—A silk dress or trees—Nature's workshop	58
CHAPTER IX	
A caterpillar year—Its effect on birds—Pied Flycatchers—Nesting boxes—Increase and death-rate amongst birds—Changes in fauna—Plumage of Flycatchers—"Spinners"	66
CHAPTER X	
Spotted eggs—Origin—And continuance of—Hawfinch—Woodpeckers—Fasting caterpillars—Dried-up lichen	73
CHAPTER XI	
A mountain walk—Advent of Spring—Its effect on insects, flowers, and birds—Sable singers and weird serenades—"Not by his bill we know the Woodcock"	79
CHAPTER XII	
Midges—Effect of frost and damp upon them—And upon caterpillars, and other insects and animals—Blood-worms and Water-worms—Screws—Gnats and Mosquitoes—Midgy—Smoke-like columns—Swallows and other birds flying high—Weather prognostics	84
CHAPTER XIII	
Mole-trapping—Farmers' friends—Nature's drainers—Habits of the Mole—Price of skins—Names—Varieties—Superstitions	89
CHAPTER XIV	
A mountain walk—Moths—Protective mimicry—Roman remains—King Arthur—Caer-gai—Drumming of Snipe—Effect of landslip—A modern moraine heap—Weeping ashes—Tall stones—Thrushes and Blackbirds—Food and songs of—Frogs—Newts—Aquatic sheep—Moths—Butterflies—Dragon-flies	96
CHAPTER XV	
Liverpool's water supply—Lake Vyrnwy—Its fishing—Tasteful planting—Brambles—Vitality of seeds—Barrows—May-flies—Creeper fishing—Black-game	113
CHAPTER XVI	
Lake Vyrnwy continued—Cattle—Rhiw Argor—Giant's stairway—Mountain berries—Hag of the midnight mist—Bogs—Polecats—Highland and Welsh keepers—Poultry thieves—Taffy was a Welshman—Cock-crowing—Dew—Glow-worms—Nightjar's song	119

Contents

vii

PAGE

CHAPTER XVII

- Highest road in Wales—Red-handed thieves of Dinas—Morning on the mountain—Deceptive distances—Geology—Querns—Shooting butts—Merlins—Birds teaching their young to fly—"The eagle suffers little birds to sing"—Stoats—Catching a weasel asleep—Vachddeiliog—Cupid's darts 127

CHAPTER XVIII

- Rhiwaedog—Roman and Saxon invasions—Lywarch Hen—Harriers—"The Eagles"—Kite—Golden and White-tailed Eagles—The king of birds—Druid's birds—A dust-bath 144

CHAPTER XIX

- Wild flowers—Varieties of—Viviparous grasses—Geology—Rock plants—The lawnkeeper's best friend—White flowers—Toothache—Cuckoo spit 150

CHAPTER XX

- Ground-building birds—Voles, Mice, and Shrews—Carnivorous Goose—Welsh names—Twites—Cuckoos—Superstition—Plumage of Cuckoo 159

CHAPTER XXI

- Sandpipers—Spiræa hedges—Birds carrying young—Adventure with Sparrow Hawk—Young Sandpipers—The angler's invitation 169

CHAPTER XXII

- Llangowr—Yew trees—Animals poisoned by yew—Stock Doves—Golden-crested Wrens—Some other warblers—Lime—Calcium—Ring Ouzels—Pipits—Butterflies 176

CHAPTER XXIII

- Crows—A many-wintered Crow—Crows and Grouse—Effect of persecution on Crows—Habits of—Usefulness of 184

CHAPTER XXIV

- Crows—Confusion of names—The Crow family—Choughs—Daws and Rooks—Lessons of a Rookery—Starlings—Grubs—Lucky birds 191

CHAPTER XXV

- Hérons—Recognising a distant friend—Habits of Herons—Food—"The Heron never dies" 199

CHAPTER XXVI

- Ravens—Habits and nesting of—Corbies—a Corby messenger—The Raven's God—Noah's curse—Superstitions—The Druid's rock—The devil's rock—Birds driving away their young—A paradise of "vermin" 204

	PAGE
CHAPTER XXVII	
More about Ravens—Sagacity of—Powers of smell in birds—Cries of the Raven—Raven and Collies—Nature's scavengers—Diseased Salmon and Grouse—Strange tenacity of life—Nature a stoic—Flight, size, and weight of Ravens—Food of	214
CHAPTER XXVIII	
Fishing—The great flood—Peat—Civic Braes—Cwmffynon—Ancient habitations—Flint implements—Gold mines—A Roman Road—Buzzard's nest—Rush lights—Stone walls—A black bull—Stoats—Hunting with—Lively Celtic imagination	225
CHAPTER XXIX	
Walk down Dovey valley to Aberystwith—Borth—Predatory collies—Owls—Witches—Yews—Vaughans of Mallwyd—Nuthatches—Wood Lark—Red-barked Shrikes—Jays	234
CHAPTER XXX	
Ferns and alpine plants—Tawny Owls—Long-eared Owl—Natural check upon Wood Pigeons—Short-eared Owl—Farmers' friends	242
CHAPTER XXXI	
Cemmes Road and Dinas—Attractions of—Buzzards' nests—Unequal justice—Food of Buzzard—Its powers of soaring—Its <i>mew</i> —Superstitions attaching to it—Its only fault on a moor—Shelldrakes	247
CHAPTER XXXII	
Wire-Worms—Crane-flies and Skip-jack Beetles—Midge grass and rot in sheep—Natural enemies of grubs—Partridges—Snipe—Pheasants—Moles—Shrews—The Water Shrew—Development of races	254
CHAPTER XXXIII	
Curlews—These and other birds sometimes remaining on their nests—Curved <i>versus</i> straight bills—Survivals of ancient type—Food of Curlew—Farmers' friends—Eating eggs—Whimbrel—Dunlins—Variations in form and plumage—Garden pets	262
CHAPTER XXXIV	
Local migration—Pairing of birds for life—Courtship, and the cause of song—Plumage—Stonechats—Lichens as food—Seasonal moults in Chats—Welsh names	273
CHAPTER XXXV	
Migration notes—Tree struck by lightning—Bleak spring weather—Kingfishers—Unusual nesting site—Curious Grouse eggs—Waxwings and Hawks—Fate of rare or conspicuous birds—Cats—Natural check on increase of albinos	281

Contents

ix

PAGE

CHAPTER XXXVI

- Swifts—Powers of flight—Hibernation—Seeing in the dark—Oriental behaviour—Ideal flying-machines—Marvels of nature—Freemasonry amongst Swifts—Excessive destruction of insects—Devil's birds—Methody devils—Swallows and Martins—Jenny Spinners—Life of an insect—Nature's balance upset by man—The difficulty of readjusting it 292

CHAPTER XXXVII

- Bats—Drinking dew—Superstitions—A Nature-lesson—Powers of vision—Noctule and Rooks—Bat chased by an Owl—Edible Swifts' nests—Bats, Swifts, and birds of prey in Borneo—Cockchafer and Bat—A chain of destruction 305

CHAPTER XXXVIII

- Badgers—Superstitions concerning—Otters—Rats—Assurance of—A Water Hen's nest—Tracks in the snow—A bottomless pit—Devils—Keeping the Ducks off the spawning redds 318

CHAPTER XXXIX

- Squirrels—And Stoats—A tree-climbing Stoat—Foresters' friends—Sure-footed animals—Weasel superstitions—Fairies—A mouse hunt—Stoat and Vole—Stoat's larder—Eels in winter—An amphibious cat 325

CHAPTER XL

- Martens—Comparative harmlessness of—Pursuit of elusive dollar—A young Marten—Variations in Marten—Marten and Polecat—Tracking in snow—Food, and footprints of Marten—Homecoming of—Reconnoitring of the beyond—Shooting foxes—Mange in foxes—A hunting Marten—Craig Llyn Dyfi—Legend of—Marten and Buzzard 333

CHAPTER XLI

- Nests of birds of prey—Sparrow Hawk's nest—Nest-building instincts—Hawks not deserting nests—Moving a nest—As bright as a Hawk's eye—Method in its madness—Repairing damaged feathers—Mesmeric power of animals—Powers of Vision—Birds recognising different kinds of Hawks 347

CHAPTER XLII

- Hawks catching beetles—Nightjars—Other soft-winged children of the night—Stage whispers—Superstitions—Notes of the Nightjar—Its flight—Distribution of pollen—Study of a feather—A wonder of Nature 356

CHAPTER XLIII

- Green Woodpeckers—Ants—Parasitic Worms—Hewholes—Retrogression—Wild cherries—Turn of the leaf—Plumage of Woodpeckers—Tongue of—Stock Doves—Falcon and Pigeon—A stern chase—Problems of Nature—Ignorance of suffering—Homer Pigeons—The risk of a race—Stock Dove's nests—And names—Value of Fir trees—Planting for game or timber—Lessons in nidification—Buarthmeini—St Tudor—Lizards and Snakes 362

CHAPTER XLIV

PAGE

Goldfinches—Bird-catchers—Dippers' nests—Big Stone Pool—The Swallowing Stone—Superstitions—Diving power of Dippers—Harmlessness of—A "Good little heart"	377
--	-----

CHAPTER XLV

Pole traps—Burying a trap—Cruelty of trapping—Land Rails—Invisible young—Omnivorous Geese—Geese and Foxes—Fungi—Squirrels and Weasels—Cat and Weasel—Dog eating Fox	383
---	-----

CHAPTER XLVI

Castell Carn Dochan—Roman remains—Vestiges of introduced fertility—Wild-flowers—Gold mine—Minerals—Geology—Birds breeding in immature plumage—Peregrine's nest—Powers of vision—Moorland scavengers—Bachelor Grouse—Plumage of Grouse—A keeper's rail	391
---	-----

INDEX	398
-----------------	-----

LIST OF ILLUSTRATIONS

	PAGE
PHEASANT ON NEST	<i>Frontispiece</i>
HANDPLOUGH OR GWYTHIO	14
TURNING THE FUR	14
BUZZARD	30
GWYNIAD	30
STARLING GOING TO ROOST	42
YELLOW WAGTAIL	42
SPARROW HAWK'S NEST	52
NEST OF LITTLE GREBE	52
A KING OF BIRDS (WREN)	62
CHAFFINCH'S NEST	62
GREAT-SPOTTED WOODPECKER	76
LANDRAIL ON NEST	76
YOUNG MERLINS	90
PEEWIT'S NEST	90
MISSEL THRUSH	103
ON OUTLOOK FOR MAY-FLY (CHAFFINCH)	116
WATER RAIL	116
FLEDGLING BUZZARD	124
A POLECAT OR FWLPAR	124
MERLIN'S NEST IN TREE	132
MERLIN'S NEST IN HEATHER	132
A WREN'S NEST SHOWING HEN	148
"THE SPIRIT OF KING ARTHUR" (WREN)	148
TWITE'S NEST	162
RING OUZEL'S NEST BUILT WITH STAG'S HORN MOSS	162

	PAGE
WHITE OWL	172
SECONDARY FEATHERS FROM CUCKOO'S WING	172
WATER HEN'S NEST	186
SANDPIPER'S NEST ON A RAILWAY BANK	186
CROW'S NEST IN MOUNTAIN ASH	196
A KEEPER'S VICTIM	196
RAVEN	214
YOUNG CUCKOO	214
"THE BRIDGE THAT WAS"	228
A FARMER'S FRIEND (BUZZARD)	228
WREN	238
RUSH CANDLE	238
MAY-FLY AT REST ON THE GRASS	248
PEEWITS A FEW HOURS OLD	248
LESSER SHREW	258
COMMON SHREW	258
CURLEW'S NEST	270
CURLEWS JUST HATCHING	270
FLEDGLING RING OUZEL	290
MARSH TIT	290
NOCTULE WALKING	316
DAUBENTON'S BAT	316
BANK VOLE	326
A WINTER STOAT	326
A DEAD MARTEN	338
POLECAT	338
LAVA AND SLATE ROCKS (IN SNOW)	350
SPARROW HAWK'S NEST	350
NIGHTJAR	360
WILLOW WREN BUILDING NEST	360
POCHARD DRAKE	376
THE MILLER'S CALON FACH (DIPPER)	376
POLE TRAP SET	386
A FUNGUS FREAK	386
A KEEPER'S RAIL	394
PEREGRINE FALCON'S NEST	394

WILD LIFE IN WALES

CHAPTER I

Introductory—Lack of English—No schooling—Music—"A cup of tea?"—Poultry—Oatcakes—Pancakes—Eggs—Lipton—Dewar—Small farms—Wild sheep—Leading sheep—Collies—Numbers of dogs and sheep—Blue Merles—Sheep-worrying—Sheep fairs—Welsh mutton.

ON that branch of the Great Western Railway which serves the vale of the Dee, and carries crowds of pleasure-seekers every season to such favourite resorts as Llangollen and Bala, there is a small wayside station in the heart of Merionethshire named Llanuwchllyn. The village, hard by, which gives its name to the station, straggles across the valley for nearly a mile ; but its long line of low houses offers few attractions to the summer tourists who annually pass it by on their way to Dolgelly and Barmouth, and, save for the invasion of a mere handful of people who have discovered its charms from the contemplative man's point of view, it still slumbers in undisturbed and almost primitive simplicity. "The Land of my Fathers" is its anthem, and "Oes y hyd i'r Iaith Gymraeg" ("The Welsh language as long as the world lasts") expresses the sentiment of its inhabitants. "Bore da" and "Nos dawch" take the place of the familiar "Good morning" or "Good night," and the chances are that any elderly person, interrogated even upon such a simple topic as the state of the weather, may shake his or her head and with difficulty murmur "No English" ; or, if pressed to enter into conversation, will have recourse to some younger member of the family to act as interpreter. Up in the glens, away from main roads, conditions are still more primitive, for

there even the children may not be able to understand English, and, maybe, have never been inside a school in their lives. I met with one such instance on the way between Lake Vyrnwy and Dinas Mawddwy. The father, a small farmer, had, perforce, been to market occasionally and knew a little English, but neither the mother, nor her two sons, could speak a word of it. The younger of the boys was about fifteen ; but though neither had ever been to school, they could both play violin and concertina (the only musical instruments they had ever seen), by ear, remarkably well, and entertained us with a number of Welsh airs, while the good lady of the house very kindly gave us tea.

Celtic hospitality is proverbial, and is as pronounced here as elsewhere. "Lipton" is the universal beverage of these mountain folks, and, as such, is freely placed at the disposal of the wayfarer by the dame who greets him at the door with the kindly inquiry, "A cup of tea?"—often her only English. The only alternative is delightfully cold water from the adjoining spring, or "bitter-milk," a kind of whey, not very palatable to an unaccustomed taste, but greatly appreciated locally, and, maybe, quite as wholesome as the milk artificially soured by the lactobacilli preparations so much in vogue in other countries. Poultry are kept everywhere, and fresh eggs are plentiful, and their price, summer and winter alike, one half-penny each. Oatcakes, made from home-grown corn, sometimes home-ground too,¹ form a substantial part of every meal ; and at "high tea," for specially honoured guests, "fat-pancakes" are frequently the *pièce de résistance*. I don't know exactly how these are made, but should imagine they floated in dripping. Before being served they are liberally buttered, so that they exude fat at every pore, and, to my uneducated taste, constitute about the most unappetising food it has ever been my fate to tackle. On one occasion, whilst we were enjoying tea with boiled

¹ Bulleyne says : "Otes is a good graine in the common wealthe, for men, horse, and foules : as thei haue little other bread in many places of Wales, and Darbie shire. In Northumberlande, horse haue as greate plentie to eat of them, as menne haue in moste places of this realme, Wheate or Rie, for their owne foode."—*Book of Simples*, folio xxx.

eggs *ad lib.* in a cottage, I happened to recall a curious old poem, and quoted it:—

“The priest’s rule is (a priest’s rule shold be true)
Those eggess are best, are long, and white, and new.
Remember eating new laid eggess and soft,
For every egge yow eat yow drink as oft.”¹

When my companion, a Scotsman, humorously added:—

“It’s unco queer, in fact as strange as true,
That Lipton here supplants the mountain dew ;
And yet, methinks, they’d sweeter be, tho’ fewer,
If thae same drinks contained a drap o’ Dewar.”

It was from Llanuwchllyn as headquarters that most of the excursions referred to in the following chapters were made, and, if the area be somewhat circumscribed, it may be remarked that with a change of names many of the observations would apply with equal force to a large portion of Northern Wales. A stranger wandering through the mountains will be surprised to find how thickly little home-steads are clustered about the lower slopes of the valleys. They are chiefly quite small farms, each with its two or three inclosed fields, and to each is attached the right to keep a certain number of sheep upon the uninclosed mountain. Wire fences or stone walls divide many of the hills, or separate one estate from another, but the grazing on the larger mountains is often held in a sort of common interest to which each holding carries its appointed rights, set out by the landlord, and defined in the lease ; so that the sheep of many owners are pastured together. They are looked after, from time to time, by one or other of the farmers, and collected and driven home at such seasons as clipping time, but live otherwise more nearly in a wild state than perhaps any other domestic animals in Britain. Of course, it often happens that sheep find their way to wrong farms, and when one is so discovered, it is customary for the finder to attach collar and rope to its neck and so

¹ *The Englishman’s Doctor*—dated 1607. A translation of an early Latin poem.

lead or drive it to its proper destination. The journeys to be covered in this fashion are often considerable ; and when first I encountered a man driving a single sheep before him like a pig, it struck me as one of the funniest things I had ever seen in agriculture. Inquiry elicited the information that he had a journey of more than ten miles before him, and as the "driving" consisted mainly of alternately pushing and dragging, his rate of progress when I found him was not very rapid. After a brief period of rebellion, however, the sheep usually give in, and trot along by their master's side, or in advance of him, quietly enough. The man is sometimes accompanied by a dog, or dogs, but as often not ; and in any case the help of a dog, in such circumstances, is little more than a moral support. The Welsh collie is in point of usefulness far inferior to his Scottish or North of England cousin, though no doubt the reason of his deficiency may lie more in his lack of education than in want of capacity. The Welsh farmer, or shepherd, is generally far behind his Scottish prototype in his knowledge of the ways of sheep, and naturally his want of management is reflected in the training of his dog. It is a common occurrence to meet a man here with a flock of sheep using two dogs when one would amply suffice, if properly trained ; but the duty of one dog is entirely confined to driving the sheep away from his master, of the other to bringing them back towards him, and according as the one movement or the other is desired so either dog is sent on the errand. Nor does one see here anything of that fine understanding between master and dog that is generally so marked a characteristic of Scottish pastoral life. It would, for example, have been well-nigh impossible for such an incident as the following to have occurred here ; yet the author can personally vouch for its exact truthfulness since it took place in his presence. The farm was on the Scottish borders, and the herd had made a bet of an ounce of 'baccy that his dog, Moss, could understand every word he said. A sheep was "lying awkward"¹ in a field known as the

¹ Lying upon its back and unable to get up without help.

Long Haugh, more than a quarter of a mile from where the conversation took place, and quite hidden from the dog's sight by a high stone wall ; when the shepherd remarked, without apparent change of accent, and without particularly addressing the dog at his heel, "I'm seeing a yewe ackward in the Lang Hough yonder, Moss'll hae te gan an' rise her." Without further word or sign Moss ran off, went down the whole length of the field, found and raised his sheep, and returned to his master's heel as if nothing unusual had happened, as indeed it had not, for such incidents are of everyday recurrence where man and dog understand one another properly, but, as already mentioned, they could not occur in this part of Wales.

The Collie found in these parts is a rather small, wiry, but well-formed animal, hardy to a degree, and an adept in the catching of moles, field voles, and such small deer, all of which he eats with avidity. Indeed, such perquisites form a substantial portion of his daily fare, for in a great measure he is shut out of doors at night and left to forage for himself, and as a natural consequence he is no great favourite with the gamekeeper. Where sheep are so largely kept, of course dogs are proportionately numerous, and under his lease a tenant is frequently restricted in the number of dogs he is allowed to keep. As an illustration I may mention that one keeper informed me that, upon his beat, the sheep allowed to be depastured ran approximately to 25,000 and the collies to 250 ; but, as in a matter of this sort it is manifestly impossible to insist upon exact conditions, he added ruefully that he calculated the number of dogs to be nearer 500. A considerable proportion of these collies are more or less "Blue Merles," many of them beautiful specimens, with coats almost as patchwork in pattern as that of a tortoiseshell cat, and with finely broken-up wall eyes. The prevailing hue is a palish pigeon blue, often accompanied with white blaze on face and feet, and sometimes by rich red-tan points. If the recently established movement for the cultivation of the breed should develop, and the Blue Merle collies become as fashionable as Sables once were, then those in search

of specimens could scarcely find a better hunting ground than Merionethshire, and as a consequence her farmers ought to add materially to their sources of revenue.

In walking over the mountains one morning I came upon a little knot of men, gathered about a farm-place, whose actions rather roused my curiosity. One of them carried a very rusty fire-lock, which he promptly hid behind him upon my appearance, while another led a sheep-dog by a light cord, not at all an unusual sight in these parts. I suspected poaching, or perhaps some raid on a fox earth, and attempted to enter into conversation, but was met with only head-shakes, and seeing my presence was not desired, I walked on. Near the shoulder of the hill, however, I halted and, under cover of some bushes, turned my glasses upon the group. Presently the dog was led a little way up the hill, and its cord made fast to a stone, while the man with the gun shot at it from a distance of five or ten paces. The dog was evidently freely "peppered," and yelled piteously, straining frantically at its tether; the gun meanwhile was being re-charged with all despatch. At the next shot the dog broke the cord, and fled, yelping, down the hill, followed by a volley of stones and much shouting. Later on, I learned that there had been some sheep worrying, and that a sort of drumhead court had been held on a suspected dog, and what I saw was the execution of the sentence, this being the usual method of "warning off" a dog against whom there was not sufficient evidence to justify hanging, the gun being loaded with small gravel, "dust," or even grain.

The excellence of Welsh mutton is too well known to be in any need of a testimonial at my hands; but the foregoing digression on collies may not inappropriately be followed by some reference to the Sheep they tend. Merioneth is essentially a breeding county, and annually despatches the increase of her flocks to the autumn markets. About the beginning of October, droves of sheep, several thousands strong, pass regularly through Llanuwchllyn on their way to Denbigh. They are the produce of many different farms, bought up some weeks previously by

dealers, or taken by them on commission, the former being the more common practice. Thus a flock, as it travels forward, is being constantly added to by drafts picked up *en route*, from farms large and small; and long before it arrives at its destination has assumed a very kenspeckle appearance from the many different classes of sheep it contains, and the variety of the marks they bear. Ewes, rams, and wethers may be seen all mixed up together, and in addition to the baste—usually the initials of their late owners—which distinguishes their place of origin, they carry the peculiar mark of the dealer who has acquired them. Very interesting it is to meet one of these travelling flocks upon an open mountain road, and study the character of the various sheep, and the half dozen or perhaps more men who are in attendance upon them. An even more instructive, because more leisurely, view of them can be obtained at those resting places where a halt is made for a mid-day meal or a night's repose. In the latter event, the flock, turned into some small inclosure, seems literally to cover the grass, as wave upon wave of sheep pour in through the opened gate, and stream over the field in search of any "roughness" it may contain. The latter, as a rule, is most conspicuous by its absence, for most of the fields are eaten very bare, but the sheep travel slowly over the mountain roads and are always picking up a mouthful here and there by the wayside, and the stoppage at night is more for rest, so far as they are concerned, than food. The more hungry of them may stray to the sides of the hedges, there to crop whatever they can find, but the majority are soon lying down, and ere we withdraw in the gathering twilight, the field presents the appearance of being filled with wreaths of rather soiled snow.

The nearer the bone the sweeter the meat is a very old axiom, whose truthfulness might very well be demonstrated by the animals under consideration; for no sheep could well carry less mutton about with them than those commonly met with in these parts. Undoubtedly they might profitably be made to carry a good deal more, were

greater attention paid to their breeding and selection. A comparison, not very flattering to the first named, has already been drawn between the Welsh hill farmer and a Scotch shepherd, and it is not desired to rub salt into what may be a sore place, too violently ; but it is safe to say that were but a fractional part of the care and intelligence displayed by the northern shepherd in the improvement of his flocks, brought into play here, the result would be highly beneficial to both the tenant and his landlord. It would be presumptuous to say that these remarks apply equally in every case, but with regard to many of the farms which came particularly under my notice I can fearlessly maintain that they are no exaggeration. The prevalent system upon which the draft intended for market is drawn from the flock is something that would make a Scotchman shudder ! The best animals are marked for sale, and those that are inferior returned to the hill for breeding purposes. This of course applies chiefly to the ewes, and it is superfluous to remark that the selection of the female to breed from ought to be the first consideration of him who would improve his flock. But with regard to rams not much more judgment is displayed. Almost anything seems to be considered good enough to father the future generation, and in some of the animals I saw being used it would have taxed the ingenuity of a judge to point out a redeeming feature. Steady deterioration, not improvement, is the goal to which all such roads lead ; and in face of what has been said, the inherent hardiness of the race of Welsh sheep, and the splendid capability of the mountains to maintain it, need not be further dilated upon.

CHAPTER II

Agricultural customs—Changes of tenancy—Valuations of sheep—Types of sheep—Clipping lambs—Long names—Contented farmers—Black cattle—Bulls—Ploughing—Threshing—Winnowing—Agricultural improvements—Old milestone—Meanness.

CHANGES of tenancy in the district are infrequent, many of the farms having descended from father to son through many generations. The farmers are contented with their lot, and for the most part prosperous; and old customs, if they die at all, die here as slowly as in most places. When a new tenant does come in, he takes over, by the customary valuation, the sheep stock of his predecessor, as in so many other hill-farming districts, and here, as elsewhere, though the custom is not regarded as altogether free from drawbacks, it has not been found practicable to replace it by anything better. That no imported stock could profitably take the place of the ewes that have become acclimatised to their surroundings through many generations seems to be beyond cavil, and that being granted, it seems to follow that they are worth something more to retain upon the farm than their mere value as ordinary drafts sent to market. The great difficulty is to keep that "something" within reasonable limits. Very often it may be placed too high by the umpire, who is the court of appeal when the valuers respectively appointed by outgoing and incoming tenants cannot agree; human nature never has been infallible, but if the judgment of the umpire is not to be accepted, who then shall decide the price? For the landlord to own the stock and let it with the farm has long ago been abandoned as quite unworkable, and open to even greater abuse; and the other alternative—viz. for the landlord to step in and put an end once for all to the custom by taking over the flock which his lease provides that the outgoing

tenant shall leave, and disposing of it to his new tenant to the best advantage he can, at the same time freeing himself from any liability respecting it at the next change in tenancy—would in many cases impose upon him an immediate pecuniary loss, which he might not be in a position to meet, with a possible prospective loss of rental to the estate when the sheep came to be separated from the land. It would no doubt be an ideal arrangement for a new tenant were he able to make such bargain as he could with the outgoing man, untrammelled by any obligation to purchase; but before that desirable end can be attained, it would seem that the right of the sitting tenant, under his lease or agreement, must be taken over and paid for by somebody.

The most prevalent type of sheep is a white-faced, hornless animal, scanty of fleece, and long of limb; but more or less of a brown mottle shows on the face, and often on the shanks of many of them, and in these the ewes show a greater tendency to carry horns. The majority of the rams are horned, the white-faced ones less invariably so than those that show colours. Black sheep are not very common, but some of the lambs are very curiously marked, some of them being spotted and patched with brown in a very picturesque manner. I saw a few that were almost perfect "black-and-tans." Scotch black-faces had been tried on one or two farms, and had left their mark on the fleeces of their descendants; but they had not done well, I was informed, and the crosses were not favourites.

The curious custom of clipping the lambs in their first autumn still prevails on many of the farms, almost the only excuse for its survival being the fear that the length of wool might impede the animal's progress in snow. To unaccustomed eyes the shorn lambs are much disfigured by the operation, and the value of the autumn clip cannot equal the loss in the subsequent year's fleece, while the half-clothed lamb in winter, should the weather be hard, is rather a pitiable object. When it comes up at the usual clipping time in the following summer,

it is a nondescript sort of sheep, neither quite "hogg" nor "ewe," and there is, in consequence, nothing of the sorting of the fleeces into those grades, as is customary elsewhere.

Another survival of a barbarous custom still to be met with here and there is that of hopting the rams and allowing them to run with the flock upon the hill in that state until the season, and their owner's judgment, shall free them from an almost intolerable bondage. A sheep, if it cannot be kept in an inclosure, is sometimes, also, tethered like a goat, with a long rope.

When speaking of the marketing of sheep, there was one incident worth recalling which has, I see, been omitted. That was a poster announcing a sheep sale at a not very far distant village, that boasted in the name of Llanrhaidrynmochant. The name so tickled me that I carried off the bill, but alas! when I got back to Llanuwchllyn I could not find anybody who was able to pronounce it! Of course, this is very far behind the record in names, which is, I fancy, carried off unchallenged by the little station on the Menai Straits—Llanfairpwllgynylogerychwyrndrobwll-Llandisiliogogoch—the whole length of whose platform is taken up with an *abridgment* of the name, which so little satisfied the inhabitants that they petitioned the London and North-Western Railway Company to extend the platform so that it might carry the name in its full and proper dignity! Translated literally, the name tells of a Lady of the fair hazel pool, and Saint Tisilio of the red cave, but the story breaks off before any incident worth recording is reached, and one rather sympathises with the Directors who refused a further blandishment of empty titles.

Having reflected so much upon the management of his flocks, it behoves me, ere quitting the subject of agriculture, to glance briefly at another side of the picture in the life of my friend, the Welsh farmer. Friend I must be permitted to call him, since at his hands I experienced nothing but the most unvarying courtesy. He is still as patriotic as of yore, and, in his love of his native mountains, their wet flats, and

rock-strewn sides, no whit behind his rude forefathers. Every yard of ground that it is possible to plough has been brought under cultivation, and, according to his lights, he does his utmost to make the land yield her increase. Neither labour nor expense is spared. Huge boulders, and earth-fast rocks, that impede the plough, are blasted and removed: the fields are tile-drained: lime is carted long distances from the station, often with four, and sometimes with even more horses attached to a cart where the hills are steep, and always driven tandem on account of the narrowness of the roads; and all manure made is diligently stored and spread. In some cases artificial manures are also used to some extent, and all this for the benefit of a poor, thin soil, which in most parts of England would be considered dear at a rent of very few shillings an acre, and which no one would dream of ploughing. Oats are, of course, the chief cereal grown, but fields of barley are also frequent—the old square-headed variety being the prevalent form on the higher farms,—and even wheat is sometimes attempted for the sake of the straw. Most of the produce is consumed at home. I dare not commit to print the number of bushels per acre which in various places I estimated these crops might yield, nor does it much signify. Suffice it to say that the crops are very light. The farmer is happy in the improvement of his land, however, and in the finding of employment for himself, his family, and his servants. Scientific principles of book-keeping, and the apportionment of yield to cost of production, which have not always proved to be an unmixed blessing to rural England, have not yet found their way hither, and maybe it is as well so. When the time comes for him to hand over the farm to his son, he is able, perhaps, to look back upon a life well spent with as much satisfaction as his more advanced neighbour, and what else matters? Primitive content is, after all, infinitely better than modern practices, with their too frequent accompaniment of up-to-date grumbling, and, except that his “fruits” are generally confined to a few rasps, or blackberries, and his “flowers” to those which grow naturally on the hills, the Welsh farmer may, with far more truth than

most of his English neighbours, pledge the good old toast :—

“ Let the wealthy and great
Roll in splendour and state,
I envy them not, I declare it.
I eat my own lamb,
My chickens and ham,
I shear my own fleece, and I wear it.
I have lawns, I have bowers,
I have fruits, I have flowers,
The lark is my morning alarmer ;
So my jolly boys now,
Here’s God speed the plough,
Long life and success to the farmer.”

Sufficient potatoes are always grown for home consumption, and a small quantity may sometimes be available for sale. Lime is almost essential for the production of these on this cold land. To meet with turnips, except in the wider valleys, is exceptional. Almost every farmer keeps a certain number of cows, the number varying according to the size of his holding, or the depth of his pocket. These are nearly invariably of the native black, or black-and-white breed, and are kept both for the production of butter, and the rearing of young cattle for market. About one in every three or four farms has a bull running with the cows in the fields or on the hills, and about a similar proportion of these “gentleman cows” will bellow and paw the ground in a manner very disconcerting to a nervous person. Not many of them may be really dangerous, but most of them will follow a retreating intruder on their domains, and probably few strangers will care to tarry to make their closer acquaintance. Fences on the hills are often far between, and sometimes not very serviceable when reached, and to be besieged on the top of a large boulder, with an angry bull pawing and bellowing around, and your only weapon of defence a cane-built fly-rod, is not everyone’s ideal way of spending a pleasant afternoon. There were two or three rather nasty cases of goring during my stay at Llanuwchllyn, and I am not ashamed to admit that, on more occasions than one, I

left the field with more discretion than dignity at the first growl of the enemy. It is said that you can always safely count upon delaying a bull's pursuit by dropping first a hat and then a coat to occupy his attention, while you make for shelter—the most approved method being to stick your hat up on your walking-stick, leave an expanded umbrella, and so forth—but I can only speak of these devices upon that hearsay evidence which so seldom carries conviction.

Hay is, of course, an important item on all these hill farms, and is cut and stored from every available piece of ground; but the fields are generally cropped so bare by the sheep till late in spring, that even with the top dressing of dung which it is customary for them to receive, the crop is seldom a bulky one. The tilling of the land is often a laborious business. Frequently the fields are so steep that it is only possible to plough them in one direction—straight down hill—while the dragging back of the empty plough to the top of the hill is sometimes harder work upon the horses than the return journey when the furrow is being turned over. Not uncommonly boggy land is cultivated, which is too soft to carry the weight of a horse, and in these cases resort is had to a hand-plough, or *Gwythio*, a most antique implement, consisting of a long, naturally bent, wooden shaft shod with a broad, shallow share, and having a cross bar at the other end, against which the man pushes. It is hard work; but in soft, peaty soil, and taking a shallow furrow of two or three inches, a man is able to get over an acre in about four days. One part of a field, near the station, was ploughed (to the astonishment of sundry passing visitors, who were able to see only a man guiding a plough through the soil without any visible traction power) by attaching a long rope to the plough by which a horse at either end pulled it alternately back and forwards, in steam-plough fashion, only that the horses, instead of coiling the rope on a wheel, walked away with it each time a corresponding distance across another part of the field. Water power is of course cheap, where a mountain stream tumbles past the greater number of the



HANDPLOUGH OR GWYTHIO.



TURNING THE FUR.

houses, and is made use of in several ways. Most of the farm-houses have a water wheel against one of their gables, for the purpose of churning butter in the dairy, inside, and too often it causes the dwelling to be very damp. Occasionally the water may drive a threshing machine, but this is very exceptional. Comparatively little corn is grown, and for the most part it is still beaten from the straw by flails, just as it must have been on the threshing floors of Egypt, centuries before the time of Pharaoh. The form of flail, or *Blaen-ffust*, in common use to-day is composed of two stout stakes, one as long again as the other, joined together by the simple arrangement of an iron staple driven into the end of each, one interlocking the other, or being connected thereto by a single chain-link. The longer of the two stakes is the *troed*, or handle, and may be the branch of an oak, or the trunk of a young larch tree, bearing considerable resemblance to the ordinary stake used for holding up a sheep-net. The winnowing of the grain is carried out by an equally primitive implement, of home manufacture, consisting of a kind of windlass, made by fixing two wooden hurdles across one another and attaching a piece of sackcloth to each free arm. This is fixed on rough trellis supports, so that the bottom of the sheets, when it is revolved, may just sweep clear of the ground, and being stationed before a heap of corn, it is revolved by one man who rapidly turns the handle. His companion, meanwhile, standing by the corn, and armed with a pail, scoops up the grain and throws it towards the machine, the wind caused by whose revolving wings blows off most of the chaff and dust. This description is, I am afraid, more complicated than the machine, but it may suffice to convey to the reader some idea of the *modus operandi*. Necessity, they say, is the mother of invention; but the first time I saw corn being "dighted" in this manner it struck me as being one of the best illustrations of the proverb I had ever seen, and I greatly regret that, owing to bad light, the photograph taken would not bear reproduction.

It may be permitted to refer to one or two other little

incidents which struck me as being peculiar here. Near Drws-y-nant, one day I came upon two men engaged in digging a field, one of them wielding a spade, the other, with pick and crow-bar, removing the larger stones with which the ground was liberally encumbered. The inclosure was one of perhaps two or three acres in extent, and perhaps a third of it had been already turned over when I first saw it. Later in the season a very light crop of potatoes was lifted from it, and it was difficult to suppress the idea that the original grass must have been of as much or even greater value ; but such "agricultural improvements" are of rather frequent occurrence in the neighbourhood.

On another occasion a roadman was encountered busily repairing a stone conduit running beneath the road, and, to replace one of the covers which had been broken, he was making use of an old mile-stone, removed from a few yards away, where for many years past (as was evident from its hoary aspect and the cutting of the letters) it had stood to inform travellers that it was so many miles to Bala and Dolgelly respectively. There was no lack of other suitable slabs of rock in the vicinity, and I could not refrain from an expression of regret that one of these was not used in place of treating an old servant to the indignity of interment, *sans ceremonie*, beneath the macadam, but the reply was to the effect that "brand new metal posts were shortly to be put up, and that there was therefore no further use for the old stones, hence the sooner they were out of sight the better." In order to bring his country up to date a Welshman never allows sentiment to stand in the way of removal of old landmarks, but it is curious to note how improvements are hastened along in one channel, and allowed to remain stagnant in another.

Meanness is foreign to the Celtic character in its uncontaminated form, but that a little learning is often a dangerous thing is sometimes strikingly exemplified by those who have had the advantage of a certain amount of English education. One poor workman who had the misfortune to meet with an accident about mid-day, that incapacitated him from work during the afternoon, had the

half-day thus lost deducted from his wage when the account came to be settled by his gentleman employer ! Needless to say, the latter is not very popular in his neighbourhood ; but the Welshman very much resembles his Highland cousin in his respect for the proverb which advises—

“Whether for better or whether for worse,
Be ruled by him that carries the purse.”

CHAPTER III

Llanuwchllyn—Bala Lake—Cymmer Abbey—"Bala has gone and will go again"—Fair Vale of Edeirnion—and legend of—The Dee—Grayling—Salmon—Trout—Angling season—Size of trout—Pike—Miller's-thumb—Pike fishing—Perch—Gudgeon—Minnows.

LLANUWCHLLYN, or, to write the name in full,¹ Llan-uwch-lylyn, signifies "The church above the lake," and the village stands—not so many feet above the present level of the lake, though now nearly a mile from it—on one of several terraces left by the receding water, and formed by the deltas of the streams that here converge upon it from the mountains on either hand. Bala Lake (formerly known as Llyn Tegid, after an ancient Welsh chieftain, or Pemblemere, "the lake of the five parishes") is the largest sheet of water in Wales, and is, according to the Ordnance Survey, 1352 acres 2 roods in extent. Its greatest length is 6566 yards, and width 1276 yards: its greatest depth, nearly opposite to Llangowr, is 132 feet, but it is rapidly silting up. Its shores are shelving and shallow, and the *débris* brought down by each tributary stream has made large inroads upon its pristine area. At the upper end there is a considerable extent of marshy ground, the haunt of ducks, coots, and snipe, at certain seasons, and the presence of

¹ An older spelling of the name appears to have been *Llanywlylyn*, as seen upon one of the communion cups in the church, said to be of early seventeenth-century manufacture, and which bears the inscription "The Cup of Llanywlylyn." The old church was replaced by the present one in 1872. An ancient brass alms-dish, presented by John Williams in 1868, has a representation of the Fall upon it, and is believed to have come from Cymmer Abbey, near Dolgelly. The Abbey was founded about 1198 A.D. by Cistercian monks from Cwm Hir ("the Long valley") in Radnorshire, under the protection of Meredyth and Gruffydd, sons of Cynan ap Gwain Gruffydd, Prince of North Wales. Cymmer signifies "The meeting of the waters." The Litany dish was made from a fallen branch of the old yew which still flourishes in the churchyard. (See Mr Hughes' *Short History of the Parish*, referred to in note to page 98.)

submerged shoals here and there is betrayed by little flocks of diving birds always feeding over them. Bala (“The Outlet”) stands at the opposite end of the lake; near the junction of the Tryweryn with the Dee. Tradition affirms that it is but the successor of a more ancient town which now lies buried beneath the waters of the lake, and the popular saying, still current in the neighbourhood, that “Bala has gone and Bala will go again,” keeps alive the old belief, and predicts a similar fate for the modern town. The latter seemed not unlikely of fulfilment, when a few years ago it was proposed to utilise the lake as a water-supply for London, and when it was contemplated extending its present area by the building of a dam across the Dee some two miles lower down the valley, where the river has cut a narrow passage for itself through the rock.

The valley below Llandderfel (the church of Derfel, a sixth-century saint) is called the Vale of Edeyrnion on the Ordnance Map, but the tradition just referred to assigns that name to the land now covered by the lake. Long ago, so the tale runs, a mighty prince, Howel ap Einion, dwelt there. He had built him a strong castle, and called it Einion, after his own name; but, though the victor in a hundred fights, he oppressed the people and lived a life of self-indulgence. Many visions of calamities to come had disturbed the dreams of his ancient bard, and oft had the prince been warned by a still small voice that whispered on the wind, “Repentance will come at the second generation”; but still rioting and bloodshed continued unabated. At length one day, during the progress of a great feast to celebrate the birth of an heir, a small bird hovered near the bard and beckoned him to follow, singing, “Repentance is at hand; come, come, come.” The old man scaled the side of the mountain in obedience to the entreaties of his little messenger, till it suddenly flew into the air, crying “Repentance *has* come,” and disappeared. Hearing a rush of waters behind him, and turning round, the bard was dismayed to see the whole “Fair Vale of Edeirnion” engulfed in a vast lake, on whose troubled bosom floated his own harp, the only relic of town or castle, or their

inhabitants, which he was ever destined to see again. The spirit of desolation appeared to him as "a great fish, white as the morning cloud," which carried the harp to his feet and then vanished beneath the waters, and that, it is believed, was the first of the *Gwyniads* which now inhabit the lake: the little bird hovering in the air, crying out "Come, come, come," is still personified by the Moor-Pipit.

The Dee is a noble river as it leaves the lake, and affords good trout and salmon fishing; it contains also plenty of grayling, but though the latter are caught in numbers just below the mouth of the Tryweryn, they do not appear to enter the lake, or at least I did not hear of any taken there, or in any part of its feeders. About Corwen, where they are a good deal fished for, I heard one person apply the name of *Glasgangen* to these fish, but otherwise they are always spoken of simply as Grayling. Most of the Salmon and Sea Trout, which come up the Dee, seem to take the Tryweryn in preference to keeping to the main stream and so entering the lake. This, it is said by some of the residents, was not always so; and it is thought that a slight obstruction across the Dee, just below the lake, may have turned the fish from what would seem to be their more natural course. On the other hand, they may find the spawning beds on the Tryweryn more to their liking. Another reason that I heard discussed was that the Tryweryn was the head of the original river, when the lake had a westerly outlet, and that "the fish really belonged to that stream"; but such a theory would take us back to times as mythical as the submergence of the "Fair Vale of Edeirnion," and may be regarded as being as authentic as that tale. There is, besides, the direct evidence of residents that at no distant date salmon were much more abundant in the lake and its tributaries than is the case now. Be the cause what it may, however, the fact remains; and if it be not presumption for a mere casual visitor to express an opinion on such a matter, it would seem to be one that is to be regretted. A few migratory *Salmonidæ* do find their way through the lake every year, and there is admirable spawning ground for them in most of

the streams at its head, but their numbers are always insignificant, and in some seasons they are most conspicuous by their absence altogether. In the spring, the Smolts, or Sparlings, of both *Salmo salar* and *S. trutta* occasionally take the artificial fly of the angler, in the Llafar, Little Dee, Lliw, and Twrch; those of *S. salar*, in my limited experience, being most abundant in the two first named streams, and *S. trutta* in the latter. During the autumn of 1906 I saw one fish of about 5 or 6 lbs. in the Twrch, and several in the Little Dee up to at least 12 or 15 lbs. One which had been poached from the latter, early in November, had already spawned, and weighed about 14 lbs. Those occasionally netted in the lake do not often exceed 10 lbs.

The Trout native to the lake sometimes run as large, but the biggest of them seldom fall to the lot of rod and line from the shore, though they may be seen rising freely at the large sedge flies which skim the surface of the water at dusk. As a consequence, no doubt, of their early spawning, and early return to the lake, where the feeding is good, many of the trout here are in excellent condition by the time the fishing opens on 1st February. Though a large basket can scarcely be expected by a fisherman angling from the shore, at that season, when climatic conditions are seldom altogether favourable, perseverance will generally meet with its reward. Fish of about a pound in weight are by no means scarce, and they are game and plucky fighters that will tax his skill in landing. Like most lake trout, these fish are very grey and silvery, with black + marks upon them, and frequently without red spots. When in good condition they are very pink fleshed, large ones being redder than fresh run salmon. Young individuals also resemble salmon smolts in their slender forms and lively habits. They spring like little bars of silver from the water when hooked, and, furthermore, leave their scales very freely on the hands of the fisherman as he disengages them from his fly. Their fins, too, are very pale in colour at this age, and altogether they might very easily be confounded with smolts or sparling; but the pectoral and ventral fins nearly always show some tinge of yellow, and if further

proof of identity were wanting, it is to be found in the fact that the flesh of these little silvery trout is often quite pink, which that of a young salmon never is. In a fish of about half a pound in weight, netted on the last day of September, all the fins on the lower part of the body were almost black, but this peculiarity might probably be due to the ground it had been frequenting. In other larger fish, seen at different times, the fins were sometimes very dark, though not black. When newly caught, some of these lake trout, both large and small, but naturally more pronounced in the former, have a beautiful purplish-red bloom over the back, shading off on the sides to steely-blue or grey, often through more or less of a suspicion of orange; but these tints are very evanescent. They are strongly reminiscent of the great Lake Trout (*Salmo ferax*) of many of the Highland lochs, a variety of *S. fario*, which it may be noted is said to inhabit Llanberis and some of the other Llynns in the Snowdon district, not more than five-and-twenty miles from Bala Lake, as the crow flies. Whether or not they ought really to be regarded as a form of *S. ferax*, or wherein the exact line of demarcation between that fish and true "Brown Trout" lies, need not here be discussed. I have never fished the Snowdon lakes, or seen a fresh specimen of the Welsh *Salmo ferax* from thence, but, judging by what I have seen of the Bala Lake fish, I should be much inclined to doubt whether any great differences can exist between them.

In the rivers, trout fishing does not open until a fortnight later than upon the lake, and so far as sport in the streams above Bala is concerned, it might very well be deferred a little later. Even well into March, I frequently put back lanky trout of about a foot in length, but, of course, "the larger the fish the longer it will be in getting into prime condition in small streams" is a rule that does not apply exclusively to Wales. Here, as elsewhere, it is wonderful to note how feeding tells. Baskets-full of refuse are almost daily thrown into the Twrch, from the Goat Hotel, just below the station, and amongst the large boulders in the stream beneath the foot-bridge there, trout in good condition can nearly always be caught at any season, and amongst

them often "a pounder." In the gullet of one of the latter variety, which took my fly on 13th August, I found the thigh-bone (femur) of a grouse, with a good deal of "pickings" still attached to it!

On the Little Dee there is a similar "refuse hole" below the parish church, which is always good for "a big 'un," and on the Lliw there are several, one of the best being just below Pen-y-Pont. As the figures are before me, and may be of interest to some readers, I give below the relative length and weight of some of my larger trout, together with date and name of stream in which captured. The measurements are from tip of nose to end of caudal fin.

Mar. 16.	One of	12½ ins.	12 oz.	From Lliw.	
" "	"	11 "	9 "	" "	
" 19.	"	11 "	10 "	" "	
Apr. 10.	"	13 "	12 "	" "	A male fish with large gib, and in poor condition.
" 10.	"	12 "	12 "	" "	A female, caught from same spot as last and at the next cast.
" 20.	"	12½ "	8 "	"	Llyn Lliwbran.
May 25.	"	15¼ "	20 "	"	Lliw.
" "	"	15 "	19 "	"	"
" "	"	12 "	10 "	"	"
" "	"	11½ "	9½ "	"	"
" "	"	11 "	9 "	"	"
" "	"	12¼ "	12 "	"	Twrch.
" 26.	"	12 "	10 "	"	Lliw.
" 29.	"	11 "	8 "	"	Little Dee.
June 1.	"	12½ "	13 "	"	Twrch.
" 5.	"	13 "	15 "	"	"
" 15.	"	14 "	14 "	"	"
" 18.	"	12½ "	12 "	"	Lliw.
" 23.	"	12 "	10 "	"	"
" 26.	"	13½ "	15½ "	"	"
" "	"	13 "	15 "	"	"
" "	"	13 "	12 "	"	Twrch.
July 13.	"	16½ "	26½ "	"	"

Wild Life in Wales

Aug.		One of	ins.	oz.	From
4.		14½		16	Llafar.
"	"	14	"	16	" "
"	"	13½	"	16	" "
"	"	13¼	"	15	" "
"	"	13	"	14	" "
"	"	13	"	13	" "
"	26.	13½	"	12½	" "
"	"	14	"	12	Lliw.
"	31.	16	"	18	Little Dee.

With the advent of September, the decline in condition was rapid: early in October many of the trout were spawning in the Little Dee and the Eiddon; in the Lliw and the Llafar they were a week or two later, and in the Twrch and its tributary burns—the clearest of the streams hereabouts—they did not, apparently, begin laying before November.

On a warm day in July, when using the finest of tackle and a single fly—a small “woodcock-wing-and-hare’s-lug”—I landed a Pike, near the mouth of the Llafar, of some two and a half feet in length, which took the fly under water, and was hooked literally just “by the skin of his teeth!” Instances of pike being caught on a largish fly are not very unusual, but to find a large fish taking so insignificant a prey is always apt to strike one as rather extraordinary. How unsafe it is to draw inferences in matters of this kind is, however, well demonstrated by the observations of Mr Wilson H. Armistead, who, commenting upon the food and habits of a large number of pike which he had netted in a lake to make room for trout, writes as follows:—“In May we were amazed to find neither trimmers nor ‘otters’ of any use, and the number caught in the nets was less; and the autopsies showed that the pike were feeding on the fresh-water shrimp (*Gammarus pulex*). Not only the small jack, but great fellows up to twenty pounds were gorged with them, and during this time they were more delicate in flavour than at any other time. . . . It seemed to me a very remarkable thing that such fish as pike, possessed of powerful jaws, a huge mouth, and armed with countless teeth, should condescend to feed on such trifling morsels as fresh-water shrimps. This diet satisfied them all through

the month of May each year, but at no other season did we find a trace of shrimps amongst their food.”¹

To this I will only add that a Pike of about twelve pounds, netted on Bala Lake in May, after it had spawned, and which I saw opened, contained well over a pint of small fry, apparently roach, none of which much exceeded an inch in length. Digestion had, however, progressed too far to enable much to be done in the way of their accurate identification. Germane to the subject, too, there comes to mind a Red-throated Diver, which I once shot upon the sea coast, whose gullet was filled with tiny Sand Eels, some of them scarcely thicker than an ordinary needle. *Verbum sat sapienti* is a time-worn proverb; yet, with such valuable object lessons as the above before him, how prone the angler still remains to put up a more conspicuous fly, or a fatter worm, or minnow, when he approaches the hole in which he expects to find a big trout! And how often is our judgment warped by suspicion when we see Rook or Partridge busy amongst the aphid-infected leaves of turnips, or closely scrutinising, for grubs and wire-worms, too minute to attract our attention, some freshly covered-in seed-bed!

One trout caught was gorged with Loaches, and another disgorged a Bull-head (*Cottus gobio*) of about three inches in length. This latter was in the Lliw. Though common enough in the Dee, below Bala, this little fish is not numerous in, or above the lake. The usual name for it here is *Penbwl*, literally “bull-head”; but it is also known as *Bawd y melinydd*, or “thumb of the miller.” Referring to the common English name, Yarrell says that it has arisen from the common practice of the miller of pressing his samples with the thumb of one hand over the open palm of the other, in order to gauge the quality of the meal, and that constant use imparts something of the shape of this fish to the man’s thumb. The sense of touch which long practice gave to the thumb enabled a judgment to be formed of the fineness of the flour, hence the saying, “Worth a miller’s thumb.”

Pike are numerous in the lake, and scarcely held in check

¹ In *Shooting Times* of 5th October 1907.

despite constant netting and the use of lines and trimmers. To the boats from Bala they frequently afford good sport, and in shape, colour, and quality, I doubt whether they are surpassed by those from any other part of the country. They are short, thick, beautifully marked fish, and, when in condition, excellent on the table. Ten or fifteen pounds seemed to be about the average size of the larger specimens caught, with occasionally one of twenty, or twenty-five pounds, but I did not hear of any heavier fish taken during my stay. There is a tradition that they were introduced to the lake in or about the year 1803, and that prior to that time Gwyniad were much more plentiful than is the case now ; but similar stories are so characteristic of so many waters where pike exist, and are looked upon as harmful to trout and other more desirable fish, that, personally, I have always regarded them with scepticism. There seems to be no valid reason for doubting that pike are as truly indigenous to this country as trout, or any other of our common fishes, and, that being so, where should we naturally expect to find them if not in large ancient sheets of water such as this ? It does not occur to anyone that it is necessary to devise reasons for finding perch, trout, or minnows, in any particular piece of water, and why should we think differently about pike ? There is an ancient doggerel which tells us that—

“Turkeys, carp, hops, pickerel,¹ and beer,
Came into England all in one year,”

but no one regards it seriously as a record of facts. Pike are frequently referred to as inhabitants of England in mediæval times ; and Day, in his standard work on *British Fishes*, writes of it : “If we look at the geographical distribution of this fish, it certainly ought to be indigenous ; while so far back as the reign of Edgar, we are told by Leland that one of large size was taken in Remesmere, Huntingdonshire. In heraldry the *luce* or *pike* occurs in the arms of the Lucy or Lucie family so far back as the reign of Henry II.”

Though there are, no doubt, plenty of lakes and rivers in

¹ Small pike.

Wales in which pike do not occur (as there are in most other parts of the country), there are also many isolated pieces of water in which the fish is found, and where there would scarcely seem to be any likelihood of its having been introduced artificially. One such place exists close at hand on the moor between Ffridd Helyg-y-Moch and the Ddwallt. The mossy tarn which until recent years existed there, but has now been reduced by drainage to a mere bog, intersected by a widish ditch, and containing a few peaty holes, used formerly to contain numbers of pike, some of which survived until only a year or two ago, if indeed the race is yet entirely extinct, despite the present circumscribed area of available water.

I am no great enthusiast for pike fishing, and have certainly no intention of attempting to demonstrate that where pike do not already occur in trouting waters it would be advisable to introduce them. Such an idea may be dismissed at once as on a par with the fantasy that would encourage the presence of owls in a pheasant-rearing field for the sake of the rats they kill. But, admitting so much, it is yet doubtful to my mind whether a few pike in a water, where trout are not over-fished, are to be regarded as so altogether inimical as is generally supposed. If coarse fish, particularly fish like perch, are numerous in the water, and cannot be got rid of (as unfortunately is impossible by any means short of draining away the water) I should certainly never advocate the extermination of pike. A large sheet of water, such as Bala Lake is, abounding with many different kinds of fish, including pike, perch, and salmonidæ, of which it is agreed that the latter are most worthy of encouragement and protection, may very roughly be compared to a deer-forest overrun with hares, rabbits, eagles, and foxes, if we suppose the condition that the owner may not enter it, but is only able to kill what he can from the boundary fence. The eagles and foxes may take some young deer, but to a much greater extent they will help to check the increase of the hares and rabbits which eat up the deer's food. A stag once fairly grown has little to fear from other enemies, but it is powerless to protect itself from

the insidious foes that are for ever robbing it of the means of growing fat. There is, however, no occasion to labour the picture. In the water, pike and perch may be substituted for eagles and foxes, and hares and rabbits we may imagine to be represented by roach or other coarse fish, but the deer make but a poor prototype for the predatory salmonidæ.

A big trout is almost as great a tyrant as a pike, and is well able to hold his own under all circumstances. He naturally frequents the haunts of young salmonidæ more than a pike does, and in the course of a year probably accounts for the disappearance of more of his own species than fall to the lot of any half-dozen pike—that is, of course, in places where coarse fish occur. Pike are always encroaching upon the domain of the latter, and undoubtedly consume far more of them than of the more wary and less easily captured salmonidæ. They are largely instrumental in keeping down the increase of perch, and of all fish (except eels) the latter are probably the greatest enemy of small fry of all kinds. Bala Lake swarms with minnows, and on a quiet summer evening I have often stood and watched small perch, of scarcely a quarter of a pound in weight, chasing minnows with such determination that they were themselves frequently stranded in shoal water, from which I occasionally transferred them by hand to my fishing creel. The minnows, in their endeavours to escape, were often left high and dry upon the gravel, whence they gradually kicked their way back to the water again, sometimes to be at once pounced upon by the perch, who, half out of the water himself, one could almost fancy was gloating over the struggles of his victim upon dry land, and deliberately awaiting its return. In several instances the same perch was seen to capture three or four minnows in rapid succession.

One very serious drawback to having pike in a lake is the depredations they commit upon young wildfowl. Where they are numerous, ducks and other birds will hardly remain to nest if they can avoid it, or if less dangerous places are to be found in the neighbourhood.

On one large lake, famous for its pike, a keeper once told me how he had actually seen a brood of ducklings disappear. The "clecking" originally consisted of eleven birds, and he was watching them disporting themselves upon the water, when a pike rushed at them and seized first one and then another of the little ones, the alarmed mother hastily making for the shore with those that remained. A few days afterwards he again saw the brood, by that time reduced to five, near the same spot, and again saw one captured by a pike. A week later they had all disappeared, and his not unnatural inference was that they had all fallen victims to the fish.

On Bala Lake one afternoon I was watching a Dabchick diving about near the railway line, when a big swirl disturbed the water, and as the bird never appeared again, and there was neither cover at hand for its concealment, nor any cause for it to hide, I have not a doubt that it was seized under water by a pike. Once when a half-pound perch was being landed on the lake, it was seized by a jack of scarcely eighteen inches in length, within a yard or two of my rod, and both fish were successfully drawn ashore. On several occasions my flies were taken by perch upon the Lliw, the largest of those landed weighing from $1\frac{1}{2}$ lbs. to 2 lbs. apiece: one of about half a pound, caught on the Llafar on 8th June, had not yet spawned, and milt ran from it like milk when it was handled. Some of the large perch taken in the nets were beautiful fish, highly coloured and very deep. The largest that I saw weighed a little over $2\frac{1}{2}$ lbs., but the keepers told me that occasionally much larger ones are caught, one four or five years ago having created a record of "about six or seven pounds." Perch becomes *Perc* in Cymry, and the Pike is *Y Penhwyad*. I saw one or two Gudgeon (*Crothell*) taken by perch-fishers in the Lliw and the Llafar, but they are not numerous above the lake. The Minnow is *Crothell y dom*, or *Sil-y-dom*, and *Bychan bysg*.

CHAPTER IV

Gwyniads—Numbers—Dimensions—and uses of—Ancient lay—Roach—
Rudd—Breems—Hybrid fish—Eels.

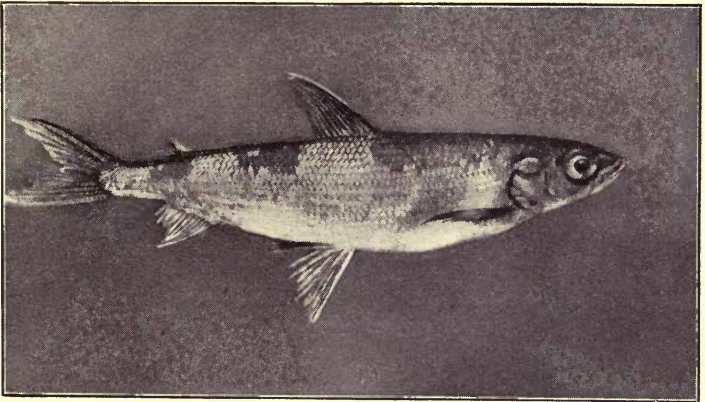
FROM time immemorial Bala Lake has enjoyed the distinction of numbering amongst its inhabitants the Powan, or Gwyniad (*Coregonus culpeoides*), a distinction, which, so far as Wales is concerned, seems to be unique, and is shared only with the English Lakes as regards the rest of Britain. A very similar, if not identical fish, is, however, found in Loch Lomond; while the Vendace (*C. vandasius*) of Lochmaben and the neighbouring lochs of Dumfriesshire, and the Pollan (*C. pollan*) of some of the Irish lakes, very closely resemble it. The fish inhabiting the English Lakes has hitherto been generally regarded as identical with the Gwyniad, but within the last few years specimens sent to the British Museum from Windermere and Bassenthwaite have been considered by Mr C. Tate Regan to present specific distinctions, and have been named by him *Coregonus gracilior*, on account of their more slender shape.¹ Günther formerly bestowed the name of *C. gracilis* upon another form, and a good many other varieties, or races, have from time to time been considered worthy of specific rank by him and other authorities. There is one marine species (*C. oxyrhynchus*) which is occasionally taken on the coast of Britain and on the Continent, as well, it is said, as on the other side of the Atlantic; others appear periodically to migrate to salt water.

All the *Coregonidæ*, whether migratory or confined to lakes, are obscure living, deep-water frequenting fish, whose study presents unusual difficulties. They seldom

¹ *Annals and Magazine of Nat. Hist.* for February 1906, etc.



BUZZARD.



GWYNIAD.

venture near the shore, and are rarely caught except with a net ; are difficult to capture uninjured ; and, when taken, yet more difficult to keep alive. They present considerable variation in shape and colour, even locally—depending, perhaps, on season, sex, and age,—and specimens from one lake may therefore be expected to agree less closely with their relatives from another. They differ, in fact, in much the same way as trout and some other fish do ; and were a large series of specimens, from different localities, available for comparison, one variety would probably be found overlapping and running into another, just as is the case with *Salmo fario* and *S. trutta*. Under the circumstances it is not therefore surprising that opinions should be divided as to whether the genus *Coregonus* ought to be further subdivided, or whether some of those already regarded as distinct might not with advantage be grouped together as mere races, scarcely even entitled to sub-specific rank, of one variable species. The latter is certainly the opinion of the writer, so far as some of the British members of the family are concerned ; and if, as seems not improbable, the whole are but the land-locked descendants of one originally migratory, or salt-water fish, then the wonder becomes rather that such long isolation, and inter-breeding, should have produced so slight a change than that the individuals from one lake should differ somewhat from those found in another. The geological formations of the lakes in which the fish occur may possibly be sufficient, in some cases, to suggest the possible period when particular races may have been founded, and, if that be accepted, the variation becomes relatively insignificant. How long it takes for a race to develop into a species, or what, exactly, the definition of a “species” ought to be, are always interesting themes, and the history of the Gwyniad, could we trace it, might shed much light on the matter. The young individuals from Bala Lake are much slimmer, more silvery, and altogether very different looking fish from larger examples ; and as both large and small, or old and young, appear to breed, it is curious (in view of the proverb that “like begets like”) that a large and a small race have not

long ago been established. Perhaps there may have been, and in that case the small may be gradually supplanting the large, for obviously they must always have been most numerous, and large specimens are said to be very rarely netted nowadays.

During my stay at Llanuwchllyn every opportunity was taken of learning as much about the Gwyniad as possible, on the spot. I talked with many people who had assisted in netting operations on the lake, or had seen the fish landed, and missed no chance of examining fresh specimens. It is some years, however, since anything like a large catch of Gwyniads has been made. One person informed me that about ten years ago he had seen several hundreds landed at one draught of the net: in previous years he had seen nearly as many taken on several occasions, but he believed that no such haul had been made more recently. These large catches generally occurred in early autumn, and at the Bala end of the lake, all the fish being practically of one size, and about 9 or 10 inches in length, "just like herrings," as he expressed it. He believed he had been present at the catching of most of the Gwyniads for some twenty years past, and never remembered to have seen one appreciably larger, with the exception of the two mentioned below. Sometimes a considerable haul used to be landed opposite Llangowr.

The two large specimens referred to were netted at the beginning of September 1906, and were the largest that any of the local people seemed to remember, or to have heard of. The best of these was presented by Sir Watkin Williams Wynn to the British Museum, and was stated to have measured $15\frac{1}{2}$ inches in length, and to have weighed nearly 2 lbs. The other is preserved at the Goat Hotel, at Llanuwchllyn station, and was about an inch shorter, and about $1\frac{1}{2}$ lbs. in weight. For the sake of comparison, it may be mentioned that Day, in his *British Fishes*, says, "This fish attains to 3 or 4 lbs. weight (Pennant), and has been recorded up to 16 inches in length." But a fish of 16 inches would clearly not weigh much over 2 lbs.

The opinion of residents on the lake is that Gwyniads

feed upon "nothing except the green slime growing upon stones at the bottom of the water"; but this is, I believe, entirely based upon the fact that none have ever been known to take a bait of any kind, and that some of this green stuff may have been found in the mouths of dead specimens picked up on the shore. The fish are believed to spawn in early spring, and it is supposed that it is when they are engaged in this operation that they are sometimes caught in a storm and driven ashore. This my own observations would tend to support, as after gales from the West, in March, each year, I picked up specimens floated ashore, all of which had either recently spawned, or were ripe for that event. A female, 10 inches long, found on 10th May, and which had only just parted with her ova, may have been an exceptionally late breeder. From March 5th to 27th in one year, I carefully examined five fresh specimens, all of which had died practically at the time of spawning.

A male, about 9 inches in length, on 27th March, contained milt nearly ripe for extrusion: another male, on 8th March, had very recently shed his milt; two females on the same day having also spawned shortly before their death. On 5th March, the female, from which the accompanying photograph was taken, was found, her ovary still contained a dozen eggs, the size of No. 3 shot; she measured exactly 10 inches in extreme length to end of caudal fin, so that the relative proportions as well as the position of the fins can be taken from the picture. The dark patches represent spaces from which the scales had been rubbed, and some of the fins are a little frayed. All the fish seen at this season of the year ran between 9 and 10 inches in length, and agreed very closely with one another, the ray formula in each being as follows: Pectoral 17; dorsal 13; anal 13 (15 in the case of one male); ventral 11; and caudal 20. The outer rays of the tail were reinforced by four short spines at top and bottom, making, if these are included as rays, 28 in all. The anterior ray of the dorsal fin is similarly strengthened by two such additional spines. The fins are very ample, and give the impression of a powerful fish in the water. In two

males the adipose fin was distinctly and regularly corrugated, terminating in a finely serrated border posteriorly. Whether this was due to individual variation, or otherwise, can only be conjectured, but in both cases the marks were very similar, and not, so far as could be judged, accidental. The stomach is syphonal, and the very large cluster of short cæcal appendages presents at first sight more the appearance of a bunch of ova than anything else.

The lateral line runs along the centre of one row of scales, having nine and a half rows above, to the anterior base of the dorsal fin, and seven and a half below, to the ventrals, exclusive of the small elongated scale which appears there. In general colour the March specimens were very silvery and bright, shading from bluey-grey above to pure white beneath, the dark colour being due to minute dusky spots, or specks, upon each scale, increasing in size and number as the back is approached. These specks are clustered together near the centre of the scale, and give the fish a distinctly striped appearance, longitudinally, imparting to it a considerable resemblance to a Grayling,—a feature much better brought out in Yarrell's figure than in Day's. The two larger fish, caught in September, were considerably darker in appearance generally, but I had little opportunity of examining them. In April, a few small, and no doubt young fish, were occasionally landed in the net. They ran about 4 or 5 inches in length, were very slender, and shed their scales so freely that it was impossible to handle them without disfigurement. They were even more silvery than the larger examples, about three-fourths of the body being white, and the dorsal area rather pale grey. Although generally returned to the water as quickly as possible, most of them floated away in an inverted position, and seldom seemed to recover.

On 1st October I saw a pike of about 10 lbs. landed in the net, at the mouth of the Lliw, which, when held up by the tail, disgorged two Gwyniads, and was so distended that it looked as though it might have held a good many more. These two fish were so fresh that they were still quite stiff. They exhibited no marks of the pike's teeth,

and were in excellent condition. Both were females, with full ovaries of eggs about the size of No. 5 shot, orange in colour, but not excessively numerous. These fish were distinctly darker than those seen in spring, and relatively more elongated in form. Their stomachs contained a considerable quantity of more or less digested food, amongst which the only objects recognisable were fragments of some small insects, or their larvæ. The stomach of the specimen photographed contained about a teaspoonful of partly comminuted matter, apparently composed of cyclops, and a couple of quite recently swallowed caddis larvæ (*Trichoptera*), case and all; showing that the fish had been feeding up to the time of its death, and that, too, pretty close in shore, as well as that a fairly substantial bait is sometimes taken. The others examined contained nothing that could be identified with the magnifying power available. The mouth of a 10-inch Gwyniad may be made to gape open to the extent of three-quarters of an inch, and in that position the point of the mandible appears to extend beyond that of the premaxilla; when the mouth is closed, however, the under jaw fits just inside the upper. The teeth are all very small.

Gwyniad are unknown to enter any of the rivers, either those running into the lake, or the Dee which flows from it. There is a tradition of one having been found dead near Llandrillo, five or six miles below the lake, but in all likelihood it may have been carried down the Dee in that state. I picked up one myself a short distance below the outlet, but had no reason to suppose that it had left the lake alive: the remains of others were found stranded on the beach, close to the bridge that spans the outlet.

“ The sun behind the Dduallt sinks,
 And gilds the distant view ;
 All golden, like the draught he drinks,
 The Gleisiad leaps in Lliw :¹

¹ *Gleisiad*, “Blue pate” = Sea trout. *Pen-y-llwyn*, “Master of the coppice” = Missel thrush. *Tresglen* = Song thrush. *Cochiar*, “Red game” = Grouse. *Mwyalchen* = Blackbird. *Gwyniad*, “White pate.” *Penhwyad*, “Duck-headed” = Pike.

The Pen-y-llwyn sings from the wood,
 The Tresglen in the glen,
 To jug the Cochiar calls his brood,
 Clear pipes the Mwyalchen ;
 The Gwyniad fair on Tegid Llyn,
 Gleams silver where she falls ;
 The Penhwyad of the dappled skin,
 Roams Einion's empty halls." ¹

So runs a modern version of an ancient lay, and on fine summer evenings I sometimes watched shoals of fishes playing on the surface of the lake, and was told that they were Gwyniads ; and though such statements must be taken on trust, there seemed no reason to doubt that they were so. To whatever species they belonged there were at any rate large numbers of the fish, for from the hills overlooking the lake several shoals could sometimes be seen at the same time. When the water is quite calm the disturbance they make is considerable, very much reminding one of the way in which herrings "play" at sea. They appear suddenly on the surface, but do not remain for more than a minute or so in one spot, and never approach the land very closely. One may be looking out upon a glassy expanse of water, on which the opposite landscape is reflected as in a mirror, when, without warning, a large patch begins, as it were, first to simmer, and then to boil. When the fun is at its height, dozens of tails may be seen through the glass lashing the water, and if not too far away the sound of the splashing falls on the ear like the rippling of wavelets on a pebbly shore. The game ends as suddenly as it began, for, on an instant, every tail is gone, often with such a splash as to suggest the rush of a pike. On one occasion I saw a Cormorant alight in, or close to, an agitated area, and at once plunging under water, reappear with a captive wriggling in its bill, and with a plunge, just as described, the shoal vanished. That it "sounded," as the whale-fishers say, was inferred from the fact that, though the Cormorant dived again twice or thrice in rapid succession,

¹ See legend of drowning of ancient castle beneath the lake, page 19, *ante*.

no further capture was made, and by and by it continued its journey on the wing.

Uninteresting though the Gwyniad may be in itself to the general angler, intent only upon the filling of his basket, it not improbably helps him considerably, indirectly, by furnishing a much appreciated supply of food for other fishes. It is a local creed that it is largely to this cause that the Pike, Perch, and Trout, taken in the lake, owe their marked superiority over fish from most other waters, and, without committing oneself too unreservedly to that belief, it may safely be said that for colour and quality Bala fish are exceedingly hard to beat. Amongst other inhabitants of the lake may be mentioned Roach (*Rhyfell*) and Rudd (*Rhuddgoch*), both occasionally netted in large numbers, and sometimes angled for by visitors at Bala. Bream are taken in the lower part of the Dee, and though they do not appear to have been recognised in the lake, they must apparently occur there, as a fish I saw captured by a young Liverpool angler, in July 1906, was undoubtedly a hybrid between the Rudd and one of the Breams, either the common species *Abramis brama*, or the Bream-flat, *A. blicca*. Personally, I was inclined to regard it as the latter; but as wild hybrids are always interesting, the following particulars may be given, and readers may form their own conclusions. It showed no indications of being a breeding fish. Extreme length to tip of caudal fin $12\frac{3}{8}$ inches; head about $2\frac{1}{4}$ inches; greatest depth, at anterior base of dorsal fin, 4 inches; thickness about 2 inches. In colour very silvery, olive-white beneath, shading upwards, through olive-green, to greenish-brown on back, where each scale had a dark margin; throat pale vermilion, the adjoining part of abdomen and sides tinged with the same. Fins, dorsal, olive-brown; caudal, ditto, the long rays on either margin orange-pink; anal, orange-pink, brownish at base; pectorals, dull olive-brown above, very pale below, tinged with pink at base. Rays—dorsal 12, pectorals 16, ventrals 9, anal 13, caudal 19. Scales large and coarse, 42 on lateral line, $4\frac{1}{2}$ below the line to base of ventrals, $9\frac{1}{2}$ above to anterior base of dorsal fin. Head small

and obliquely set on, contour both above and below abruptly convex.

Eels (*Llysowen*), as might be expected, are both numerous and attain to large dimensions, individuals exceeding 7 lbs. in weight being talked of. I sometimes saw very large ones, in the summer evenings, making their way from the lake into the Lliw, where the feeding is sometimes gross, owing to the garbage thrown into it. Some of them I computed to be quite 5 or 6 lbs. in weight, but, not having any tackle with me, they were not fished for, and I could never prevail upon any of the natives who were perch fishing at the mouth of the river to allow their bait to be gorged by them : Eels seeming to be held in even greater aversion here than in Scotland, and that is saying a good deal. More than once I threw small fish in front of these large Eels and watched them seized and swallowed after the customary shaking. It is, indeed, astonishing how large a bait an eel can swallow, but its jaws are so powerful that it has no trouble in crushing any large mouthful into convenient shape.

In one place, below the village, I noticed where Eels had been visiting the dead body of a fowl, lying on the bank some yards away from the water's edge, for several nights in succession, till it was, in fact, in a very unsavoury condition indeed. I have heard professional eel-catchers say that their traps were unavailing unless they kept the baits untainted ; but the above was not the only occasion on which I have had similar evidence that, sometimes at any rate, the eel does not object to decidedly "high" food.

CHAPTER V

Bala Lake—Geological features—Llan-y-cil—Wildfowl—Habits of—Possible increase of—Grebes—Coots—Efficient watchers—Sentinels.

PRACTICALLY the whole margin of Bala Lake is shingly beach, liable to be flooded a foot or two, or laid bare, at any season of the year, owing to the rapid rise and fall of the mountain streams that feed it. This, together with the absence of islands, and large weed-beds, and the presence of pike, makes it unattractive, as a breeding station, to any considerable number of water-fowl. The estuary of each tributary stream is marked by an extensive delta of gravel, the principal inlets pointing towards the west. These, and the lacustrine marls underlying part of the Llanuwchllyn end of the valley, are instructive features to the geological student. Boulders and rocks are thickly scattered in every direction, all, or nearly all, of local origin, some of them rounded and worn by friction, others showing but little alteration since they left their native crater. On the northern margin of the lake, a little below Llan-y-cil ("the church in the nook"—a name which the situation well deserves), a fossiliferous bed of shale is exposed in the course of a stream, a similar band cropping out on the road near Bwlch-y-groes. At the top of the lake, where there is some boggy ground, and beds of sedges, equisetum, and white water-lily, and on the alder- and willow-fringed promontory off the mouth of the Llfar, a few ducks remain to breed, but the bulk of those which winter here seek safer quarters on the moors, or further afield. As I naturally could not intrude upon such grounds, however, my observations in this direction were chiefly confined to the use of a powerful pair of binoculars.

Although so few wildfowl remain to nest on the lake,

however, it becomes the winter resort of a large number of different species. When I first made its acquaintance, in February 1905, there were numerous little parties of Pochards, Tufted Ducks, and Coots diving round its margin, often close alongside the road and railway, while, further out, large flocks of Mallards and Wigeon were idly dosing away their hours of inactivity. Amongst the latter were a few Teal, and in one little bay five or six Golden-eye and a Little Grebe. All fowl were numerous on the lake that year, but as in the following winter not more than perhaps a tenth of the Pochards and Tufted Ducks returned, while the flocks of Wigeon and Mallards were also nothing like so large, I expect that in numbers they are all liable to a considerable amount of variation in different years. Most of the fowl disappeared each year about the middle of March, and straggled back again from early in August up to the new year, about which time they are generally regarded as being most numerous. In 1905, a flock approximating a couple of hundred ducks, of which perhaps a third might be Wigeon, was not an unusual spectacle; while of Coots there might probably have been as many more. Collectively the diving ducks could not have numbered less than a hundred, very likely as many again. A goodly number of all these fowl fall to the lot of flight-shooters round Bala, but on the rest of the lake they are very little disturbed.

The Wigeon is called *Chwiwell* or *Chwiwiad*, a name originating, apparently, from its sprightly actions. In 1905 there were about fifty on the lake up till a few days after the 17th March: in the following year none were noticed later than the 8th March: in 1907 twenty or thirty were still there on the 23rd of that month. In 1905 one flew whistling over my head on 27th August, flocks not appearing till a month later. In 1906 the first flock was not seen till 3rd November; but on the 18th July that year I saw one in very dark "ducks' plumage" (and therefore probably an old male) with some wild ducks at the mouth of the Lliw. Whether or not it had passed the summer here, I had no means of knowing; the keeper said he had not noticed it. Shortly afterwards I saw the statement in a

local newspaper, "a wigeon has nested this summer near Shrewsbury," and if this were authentic, the two events might have had some connection with each other; but for these birds to be found nesting so far south would be quite contrary to their usual habits.

The Wild Duck is *Hwyad wyllt* here, and the Pochard becomes *Hwyad hengoch*, or red-headed duck; the Tufted Duck *Hwyad gopog*. One or two pairs of each of the latter species remained to breed on the lake in 1906: the greater number having taken their departure towards the end of March. I saw five or six young Pochards with their mother off the mouth of the Llafar on 8th June 1905; and on 26th June 1906, three male Tufted Ducks and one Pochard were swimming together near Llangowr, their mates being no doubt sitting on eggs somewhere amongst the herbage at the head of the lake. Up to about the middle of May 1905, a male Tufted Duck and a female Pochard were frequently seen in company, as though they had paired, and I had some reason to believe they had done so, but after that date they were not noticed together. There were two pairs of Tufted Ducks on the lake at the time, but no male Pochard was ever visible to my glasses, though the water was often enough scanned. As just mentioned, a female Pochard with her young brood was seen on 8th June, but they were not noticed subsequently; and though some Tufted Ducks were hatched, I do not think that any young of either species were brought to maturity that season. Both feed so conspicuously on open water during the day, that it is improbable that, had they lived, they would have altogether escaped my scrutiny. It only remains to add that the Tufted Ducks, having lost their eggs or young, were constantly seen together in a little flock of five—three males and two females—up till the end of the summer, but that the Pochard disappeared from my ken. Hybrids between the two species, reared both in semi-domestication and in a wild state, have from time to time been recorded, so that their inter-breeding here, had it been more fully established, would not have been unique, but all such lapses, under natural conditions, are very exceptional.

The unsuitability of Bala Lake, under present conditions, to the nesting requirements of wild fowl, generally, has already been alluded to. Were it deemed advisable to do so, it would not seem to be a very difficult task to add to its attractions, and if that were done it is evident that many more ducks would remain to breed here. The common Wild Duck and Teal, which prefer making their nests at some distance from water, are not so liable to be affected by floods, but the Pochard and Tufted Duck will nearly always build in a tuft of rushes or other coarse herbage growing in the water, or close to its edge, if such sites are available. In any event the nests will generally be placed as near the water as possible, so that even a small flood is often fatal to them. Though so closely resembling one another in many respects, Pochards differ from Tufted Ducks a good deal in their manner of leaving their eggs when disturbed. The latter generally flounder off with low and heavy flight, while the former sometimes rises as suddenly, and with as much spring, as a Wild Duck. Their eggs are very similar, those of the Pochard inclining more to a green shade, of the Tufted Duck more to buff: the former are usually somewhat the larger of the two, and are more prone to display those dark oily stains so characteristic of the eggs of the Eider Duck. Both birds utter a very similar note of "*currugh, currugh*," in addition to which they both give vent to a low grunting noise when feeding, often almost monosyllabic, but sometimes expressed as *curre, curre*. When flying, the male Pochard utters a soft whistle (no doubt he also does so upon the water, though I do not happen to have heard it there), but I have never noticed any distinctive note between the sexes of Tufted Ducks.

Upon Bala Lake, a little party of either species (sometimes mixed, but more often composed exclusively of members of one or the other) may frequently be met with diving very close in shore, right up to the fringe of alder trees, and, as they usually all go under at much the same time, they may then be approached very nearly, if one advances while they are under water, and gets into cover before they come up again. By adopting such tactics, I have often got within a



STARLING GOING TO ROOST.



YELLOW WAGTAIL.

few yards of them, and then, by remaining quiet and concealed, have had them under observation at close quarters for quite a considerable time. The food brought up appeared to consist exclusively of vegetable substances, or at any rate never of anything so lively as a fish. On one occasion a Dabchick swam up and began impudently nibbling at the weed which a drake Pochard was discussing on the surface, without the latter betraying any symptom of jealousy. Pochards in these circumstances are always less wary than any of the other fowl, sometimes even landing on the shore and remaining there for considerable intervals, preening their feathers, and resting in quiet meditation. Golden-eyes, and Coots, often accompanied the other fowl, but both of these are much more chary of approaching the land too closely, and both are given to drifting away, or changing their feeding ground, much more than Tufted Ducks, and Pochards, which will often remain an hour diving over exactly the same spot. The different behaviour of the various species, when alarmed, is also interesting to note. On discovering an ambush, the Grebe instantly disappears under water, leaving scarce a ripple behind to mark the spot, and probably not reappearing within forty yards. If his suspicions have been badly aroused, he may even go further, or when he comes up only protrude a snake-like head and neck for a moment, and withdraw it again, and his second dive will probably carry him out of ken, unless the water be very calm and smooth. On occasions, he may not put up more than his bill, and is then practically invisible after the first plunge. Coots invariably take wing, and, scurrying over the water, offer the sportsman just the best possible chance of killing them, if such be his object. It would be impossible for them to display a greater lack of appreciation of the kind of danger they have most to fear; nor does any amount of shooting at them appear to teach them that safety lies under water and almost certain death in the air. The only way in which their education seems to improve is that, when much disturbed, they become very fearful of approaching the shore; and even here, in this quiet sanctuary, that inherited trait of character crops strongly up. It is this

insuperable suspicion of danger that has made the Coot so valuable an index to the quietude of the water it frequents. The keeper, on his rounds, is quick to learn that no poaching is to be feared where the Heron is standing sentinel by the stream ; and where Water-Hens are grazing on the banks, or Coots diving in the near offing, he may rest equally assured of the undisturbed slumber of his wild ducks upon the lake, for than these he has not many more efficient "watchers" on his staff. How aptly Hood has made use of these symbols of restfulness :—

"The coot was swimming in the reedy pond,
Beside the water-hen so soon affrighted,
And in the weedy moat the heron, fond
Of solitude, alighted.

"The moping heron, motionless and stiff,
That on a stone, as silently and stilly,
Stood, an apparent sentinel, as if
To guard the water-lily."

Golden-eyes always took wing when I showed myself, and Tufted Ducks almost as invariably, though they were seldom so prompt to rise as the last, and frequently swam for a few yards, uttering croaks of alarm, before doing so. Pochards, on the other hand, generally refrained from flying, however nearly approached, unless on those rare occasions when they happened to be sitting on land. Then, they could scarcely do otherwise than fly, but on the water they generally *swam* away, nor did they usually go very far. Sometimes, if I remained still and kept out of sight, they would drift back to their old feeding ground, within half an hour, never having been more than a hundred yards away at farthest. They, too, express their alarm by low croaking. The croak of the Golden-eye resembles that of these other diving ducks, but is pitched in a slightly higher key, another note may more closely be likened to a short harsh quack.

The difference in the whirr, or "whistle" made by the wings of the various kinds of ducks is also very marked.

That of the Mallard is well known, and may serve as a standard by which to judge the others. In comparison, the Teal scarcely "whistles" at all. The heavy diving ducks make a shriller and more whistling sound, the Golden-eye being particularly noisy, whence its rather appropriate synonym of "Rattle-wing." But none of these approach in volume the clear whistle made by the Shoveler when fairly under way, or the peculiar clatter it produces when rising from the water. Either of these sounds can be heard distinctly at an almost incredible distance in calm weather, and are, alone, quite sufficient to identify the species to accustomed ears. I only once saw the Shoveler on Bala Lake, and that was on 26th February 1906, when a pair of them appeared. On 3rd November, in the same year, there was a single Velvet Scoter on the lake, but it did not remain. Wild Geese I never noticed at all, but I was told that two had been shot near Bala during the early months of 1907. They were spoken of as simply *Gwyddau wyllt*, or "wild geese," but from their description may have been White-fronted Geese. On 8th March 1906, an adult drake Goosander was seen, the only one during my visit, but a keeper who was with me at the time said he had occasionally seen them before; a statement not at all unlikely to be correct, seeing the marked preference always shown by this bird for inland waters. It must, however, be regarded as only a chance straggler here.

As, whenever possible, the Welsh names of the various animals mentioned in these chapters have been given, the following may be added. I don't think I ever heard them actually in use, but I was informed that they were applied to the different birds. Golden-eye, *Llygad-aur*; Shoveler, *Hwyad lydanbig*, broad-billed duck; Goosander, *Ddanned-aog*, Sawbill; and Teal, *Crach-hwyad*, little duck.

CHAPTER VI

Cormorants—Rapacity of—Swallowing powers—Prototypes of heraldry—As food—Sparrow pie and other dainties—Shags.

A FEW Cormorants were always present on the lake, irrespective of season, although they do not breed here. Their numbers varied from perhaps a dozen to about half that number, some of them putting on the conspicuous white thigh-patches and grey necks in spring,¹ yet appearing to be resident and not to depart for breeding quarters. Most of them were immature, showing more or less white upon the breast,—a mark of adolescence which some individuals do not lose for several years. Their usual roosting places were a large oak between the road and the lake near Llan-y-cil, or on the trees on the Llafar promontory, and these were whitened with their droppings and conspicuous a long way off. Beneath them the scales of perch and roach, or rudd, were always to be recognised amongst their castings ; once or twice I found the mutilated remains of gwyniad, and once at least an eel. Amongst the mass of often partially comminuted bones and scales, it is not easy to identify the victims, but even a cursory examination suffices to show what large fish are often swallowed. The stretching capacity of a Cormorant's throat is, indeed, remarkable. I have seen a sea trout of nearly 2 lbs. taken from the maw of one shot on a tidal river, and large whiting are swallowed with ease. On the sea-coast flat fish form a large proportion of the birds' ordinary bill

¹ These portions of a Cormorant's plumage are particularly worthy of attention, more especially the white-tipped feathers on the thigh. Some of the white tips appear to be developed on the dark feathers after the latter are fully grown, and to drop off when no longer required as special adornments of the plumage.

of fare, and one too large to swallow otherwise is deftly rolled round in the bill till it is brought within manageable dimensions. Taking it altogether, fish of all sorts, in this country, have probably no more formidable feathered foe than the Cormorant. Strained and laborious though his movements through the air may appear, and clumsy and uncouth as they undoubtedly are upon land, few birds are more thoroughly at home in the water. There, his every action becomes instinct with a vigour and alertness that cannot fail to arrest the eye of all beholders. Propelled through the water by rapid strokes of his powerful feet, which, ungainly and misshapen though they may appear upon land, act, in the other element, like the paddles of a small engine, the bird is able to turn almost with the rapidity of a fish itself by the slightest movement of its large and rudder-like tail. The long recurved neck is held in readiness, meanwhile, to be shot out with lightning speed, and unerring aim, the moment prey is approached with sufficient nearness; and woe betide any small fish which may then find itself within striking distance of the formidable beak, or which may come within the ken of the keen green eye that seems to pierce alike the depths of the weed bed, and the innermost recesses amongst the rocks, in which the unhappy fry would seek to hide themselves.

Even minnows and stickle-backs are not beneath a Cormorant's notice, but there can be little doubt that it prefers larger and more satisfying prey, and where, as in this part of Wales, it fishes fearlessly up all the small streams, the number of trout consumed must be considerable. In no other part of the country have I seen Cormorants dare to trust themselves in such shallow and narrow reaches of a river. They were frequently noticed close up to the village, and one day, on the Lliw, I walked right on top of one in a little pool, when it floundered out from beneath some willow bushes and went scurrying over the gravelly stream like some overgrown Water-Hen! On another occasion I stalked up to one that was fishing nearer the mouth of the same river, and when he came up, about twenty yards away, with a perch kicking between his mandibles,

he was so little disconcerted by my presence on the bank, that he promptly bolted the fish before flying off. Yet in spite of all his peccadillos, there is no overlooking the added charm which one of these large birds lends to the landscape. Whether on the water, upon the wing, or silhouetted against the sky on some bare tree top, his presence makes strongly for the picturesque. There are one or two posts standing in the water near Glan Llyn which were seldom without their Cormorant atop. In such situations, with wings akimbo—his clothes literally hung out to dry after their wetting in the last fishing excursion—the attitude assumed by a Cormorant is often most grotesque, and were it not for the constant turning of the snake-like head, in the anxiety of its owner to guard against surprise, one might almost be excused for mistaking the bird for a graven image,—some quaint device of the Heralds' College, owing its creation solely to the imaginative genius of a Lyon-King-of-Arms, rather than a living creature. When, however, such figures are found duplicated too often upon a trout-stream, the study of prototypes of heraldry begins to pall upon the fisherman, and he is apt to find himself pondering the question of where the limit of sentiment in bird protection lies.

One of the few redeeming qualities in a Cormorant, from an economist's point of view, is the fact that, amongst the fish it consumes, are a considerable number of eels, themselves more destructive to most kinds of freshwater fish, including salmonidæ, than is the bird. Sometimes a big eel proves too formidable an antagonist even for a Cormorant. The writer once assisted in the capture of one whose struggles in the water attracted the attention of a party of sea-fishermen. When lifted into the boat, in a greatly exhausted state, the bird was found to have an eel twisted tightly round its neck, the head of the fish having been already swallowed and being so firmly held in its throat by the coils of the eel that before it could be released the Cormorant had expired.

Owing to its rank, rather musky aroma, as well as to its fish diet, a Cormorant hardly seems a likely bird to appeal to

any one as food ; yet in olden days it sometimes figured at table. Gray (*Birds of the West of Scotland*), quoting from an older work, mentions that the Islanders of Skye were wont to make broth of young Cormorants, and that "the broth is usually drunk by nurses to increase their milk." From his own experience he records : "An old friend of mine told me lately that he had cooked one and eaten part of it about forty years ago, and that the terribly fishy flavour was in his mouth still." An old shore-shooter, in thanking me for a young Cormorant which I had shot and presented to him, some years ago, assured me that, "stuffed wi' taties an' onions, a white-breasted gormor¹ was as guid as a whaup,² an' better nor a sea-gull." Like the last-mentioned bird, it wanted burying in the garden for a day or two before being cooked, and skinning all such fowl in place of plucking them is recommended as tending to reduce their oiliness. Profiting by this advice, I once joined an old friend—an Episcopalian minister in Scotland—in trying a pie made of Herring Gulls, and, contrary to our expectations, we were both agreed that it was not at all bad.

While upon this topic I should like to add that, maugre the opinions so often held to the contrary, many of our common sea and shore fowl, as well as other birds that seldom appear at table, are really very good to eat. Sparrows, with their almost omnivorous diet, are excellent, and far superior to most finches and other small birds ; and, could a taste for "sparrow pie," or some such delicacy, be once again made fashionable, it might go some way towards keeping in check "a plague" which is seriously felt in so many corn-growing districts. The Thrush tribe are all good, but they are generally surpassed by the Dipper, or Water Ouzel, which lives almost exclusively upon insects. Water-Hens are usually excellently flavoured, though a rank individual now and then crops up : the same may be said of Curlews, and their allies. Coots are generally unpalatable to anyone whose stomach does not soar beyond prejudice. Most of the shore-feeding Sandpipers are at least equal to plovers from a gastronomic point of view ; and, generally

¹ Cormorant.

² Curlew.

speaking, many of the common Diving Ducks are quite as good as Wigeon. Exceptions occur amongst all of them, as they do amongst Water-Hens, but on that account the whole family ought not to be tabooed: generally they are better skinned than plucked, as in their skins often lies the objectionable oily flavour. The nature of its food is not always a safe criterion to go upon in judging of the probable kitchenable qualities of a bird, for I have tasted Eider Ducks, that had been reared upon the same food, and together with farm-yard ducks, but found them quite as ill-flavoured as wild Eiders shot at sea. The grey Wild-Geese, which feed almost exclusively inland, on stubble fields, young grasses, clovers, etc., are far inferior to the Brent Geese, whose food is entirely obtained in salt, or brackish water, and largely consists of *Zostera marina*, and Laver, whence the common name of "Ware Goose." Then everyone knows the esteem in which the Land-Rail is held, the bird of which Drayton speaks as "The Rayle, that seldom comes but upon rich men's spits"; yet I have tried a very fat Corncrake, shot in October, and found it of but indifferent flavour. Some foods seem always to leave a nasty taint behind them—e.g. Wood-Pigeons when their crops are full of turnip tops, or the milk of turnip-fed cows. Squirrels, by the way, are not half bad eating, nor should they be, as they are generally very clean-feeding animals; and Dormice, though it has never been the writer's lot to sample them, were held to be a delicacy by the Romans.

The local name of the Cormorant is *Morfran*, or *Mulfran*, which it is interesting to compare with the Breton name *Morvran*, meaning also a "sea crow"; the common English name being derived from the Latin *Corvus marinus*. Gormer, a common designation of the bird in some parts of the country, and already made use of in this chapter, is probably only a provincialism of Cormorant, though by some considered to come from *Gore-mew*, or "flesh sea-gull," like *Gor-crow* and *Corby*, applied to the Carrion Crow.

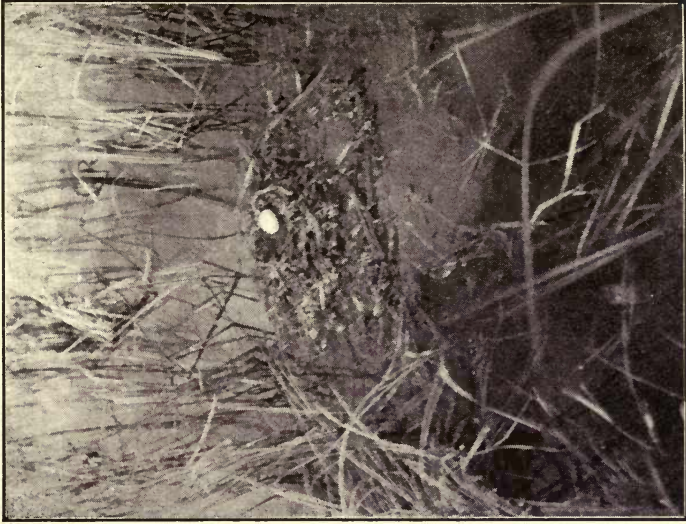
The Shag (*Morfran gopog*) is nowhere very numerous in North Wales, but though it occurs on the coast, it is by habit so much more exclusively a sea bird than the big

Cormorant, that it probably never ventures so far inland as Bala Lake ; at any rate, I never saw it here. Salt water is, of course, within easy flight of such birds, and the enterprising nature of the common Cormorant is well known, yet I was surprised when one summer day one flew past me almost on the very summit of Aran Mawddwy ; and how I longed for the appearance of a falcon hungry enough to put him down ! He had, no doubt, strayed from Craig-y-dern, a well-known breeding rock between Towyn and Cader Idris. Although the Shag is fully a third less in size than its relative, the two birds are so frequently confounded in Wales, that it may not be out of place to remind readers that a certain distinction is always to be found in the number of the quill feathers in the tail, the common Cormorant having fourteen, the Shag only twelve.

CHAPTER VII

Dabchicks—Great Crested Grebes—Teal—Falcons—"Vermin"—A brilliant meteor—Buzzards—Kestrels.

SOME Dabchicks, or Little Grebes—here known as *Gwyach-Fach*, or *Wil-y-Wawch*—may generally be seen diving about the margins of Bala Lake in autumn and winter. In spring they betake themselves to any of the little peaty tarns on the moors that furnish enough of coarse herbage to conceal their rude nests. It is in water about knee deep, amongst thick growths of bog bean, equisetum, and the like, that they delight to raise the shallow-topped, always water-logged mass of weeds that serves them as a nursery, and of all conspicuous nests, probably none so frequently deceives the eye of the casual birds'-nester. The Grebe is always careful to cover her eggs before leaving them, and the nest then looks so exactly like a bunch of scarcely floating weed that anyone unacquainted with the habits of the bird will almost inevitably pass it by. Happening to be passing a small mountain tarn one day in May, I espied the nest photographed below, at no great distance from the shore, and remarked to my companion, an intelligent Welsh keeper, that it was an ideal place for a *Wil-y-Wawch's* nest. He had never seen a grebe's nest, and was unaware that the bird bred on his beat, so sitting down on the heather I sent him to make an examination of the pool. Wading amongst the vegetation it was not long before he discovered a Water-Hen's nest, but though he passed quite close to the other, and I believe actually poked it with his stick, his suspicions were not aroused, and presently he returned to report that there was no other nest there. Of course, the Grebes themselves were never seen during his examination, and he would



NEST OF LITTLE GREBE.



SPARROW HAWK'S NEST.

hardly be persuaded that a nest existed there until I drew back the covering and exposed the single egg which had as yet been laid.

Such ideal sites are not always available, however, though it is very exceptional for any other to be used. I once came upon a Dabchick sitting on a nest under a tuft of heather, six feet away from the water's edge, and had the pleasure of seeing her more than once run from the nest to the water at our approach. This was down a muddy slope, and her frequent journeys had worn quite a track on the soft soil.

The young ones take to the water almost as soon as they are hatched, and in a short time become almost as expert as their parents under water. Before that state of independence is reached they are tended by both father and mother with the most unremitting care. Food is brought up for them from beneath the water, and on the appearance of danger they are taken upon their parents' back and carried off, either above or below the surface, to a place of safety. This operation it has been my good fortune to witness more than once, the young birds being so well concealed beneath the back feathers of the adult as to be practically invisible. I have seen the parent dive with the young on its back and come up again, ten yards away, with them still in position. At other times I have seen young grebes hanging by their mouths to the flank feathers of their mother, and dragged off by her in that position, like so many small boats being towed by a tug.

The Great Crested Grebe, *Gwyach-Fawr*, or *Gwyach Gorniog-Fawr*, only appears on the lake in spring, but is not rare upon the sea-coast during autumn and winter. I did not hear of it nesting anywhere nearer than the meres of Cheshire and Shropshire, but if suitable water existed it would no doubt remain to breed in other places. I watched a pair near the Llanuwchllyn end of the lake one morning at the end of March, and was much interested in their proceedings. They were in full plumage, with fine large hoods, which were frequently spread to their full extent and refolded again as the birds swam together and bowed to

one another after their own peculiar manner ; both occasionally gave vent to hoarse croaks, not very loud, and apparently expressive of content, an almost monosyllabic *Kurru, kurru*. In addition to this the male sometimes made use of a loud call, rather resembling the *honk* of a goose. This was always uttered when the birds had drifted far apart (as they very quickly do when indulging in their long dives) and invariably had the effect of summoning the female to his side, when an exchange of bows and ruffling of hoods would be gone through, after which fishing operations would be resumed again. When uttering this note the male held his neck straight out in front of him, low over the surface of the water, and the hood being then laid back gave him the appearance of being two birds, a large and a small one, in close proximity to each other. After he had called, his head was raised to the full extent of the long neck, and, with hood expanded, he then advanced in full dignity to meet his partner, a very pretty and at the same time extraordinary sight. This pair of grebes remained on the lake for at least a fortnight, others seen earlier in the year seemed to disappear almost at once.

Teal were sometimes numerous on the lake ; on 3rd November 1906, I saw a flock of quite fifty together. On fine mornings in spring the whistling of the drakes, and their gambols of courtship on the water, were very entertaining. The lovenote always reminds me of the creaking of a rusty hinge on a door that is being constantly moved to and fro ; and when the bird that utters it is not very far away, and keeps up its monotonous repetition, it becomes almost as irksome to the ear ; heard once in a while, its musical effect may be recognised, and one is tempted to listen again from the association of greening marsh, and eager rising trout that it conjures up. The female's voice seems to be restricted to a hoarse quack, but, unlike Mallards, it is the male Teal that is the noisy and demonstrative partner. Most of the Teal go elsewhere to breed, a few of them nesting about the lakelets or bogs on the moors.

The rapidity of a Teal on the wing is well known, but I had an illustration one day of how easily a Falcon can out-

strip it, not merely in a headlong stoop, but in fair flight. This was at a mountain tarn, and the Teal was rushing furiously for the water, with the falcon (a male Peregrine) following, apparently at his leisure, a few yards behind and above it. So far as could be judged, the prey was at his mercy, but no attempt at a stoop was made, and when the Teal reached the lake, and disappeared into it, the hawk merely wheeled aloft and went on his way. "He must be training the young 'uns to fly," laconically remarked the keeper at my elbow, but beneath an assumed indifference, I knew well he was regretting that he had only a stick in his hand, and that the day was the Sabbath!

Peregrines are, however, very erratic in their ways at times. On another Sunday afternoon I was sheltering with the same man behind a large rock from an autumnal gale, and at the same time watching the movements of quite a collection of "vermin" on the face of an adjacent cliff. This was "The Graig," and somewhere on the moor above there was evidently a dead sheep, or some other attraction. A pair of Crows were busy at it, and a pair of Ravens circled overhead; while a Magpie, in the wooded dingle below, had evidently been there before, or was attracted to the feast by the cawing of his confrères, for he gradually worked his way by short flights from ledge to ledge up the face of the cliff, 150 or 200 feet above the highest scrub. Arrived at the summit, he sat a while, chattering, and flirting his tail till it shone again in the sun. A Kestrel had unfledged young ones still upon the cliff, and was noisily hovering about, stooping first at one then at another of the intruders on her domain. Of all the crowd the Magpie seemed to be the most watchful, for the first indication that a Falcon was approaching was his diving headlong, with almost closed wings, to the cover of the trees he had so lately left, the blue and purple reflections of his tail flashing in the sun, like the track of some brilliant meteor, as he dropped. Then the Crows rose noisily, and presently the Falcons, for there was a pair of them, circled overhead. All the birds seemed to recognise that the Falcons were in a dangerous mood, for they all gave them a wide berth, except the

Kestrel, who continued hovering above her crag. Whether it was this indifference that annoyed the Falcon it was impossible to say, but she came down like a bolt from the blue, and it was only by a clever shift that the Kestrel saved herself from annihilation, for the Falcon, with lowered talons, and an angry scream, passed perilously near her, dashing in her impetuosity to within twenty or thirty feet of our ambush. The rush of her wings as she sheered up again was almost as loud as the *swish* with which she came down, and just as she had regained about her old vantage point—the Kestrel having, meanwhile, wisely taken refuge *in the rocks*—an eddy of wind carried a dry bracken leaf upwards, and down came the Falcon upon it with almost as fine a stoop as before. She may have taken the brown object moving beneath her for a bird, but, if so, she seemed to discover her mistake before quite reaching it, for she slackened pace and turned sharp round to follow it instead of attempting to strike, and fluttered about it for a second or two. But, meantime, her consort, who had all the time been circling overhead, had caught sight of a Wood-Pigeon passing in the valley below, and set off in pursuit, and our Falcon joining him, all were quickly out of sight behind the shoulder of the hill.

It was altogether a most interesting hour that we spent beneath that “shelter stone,” for, besides the Falcon’s stoop, always worth beholding, the behaviour of the Kestrel, in recognising that her safest place was not for the moment in the air, and the gleam of the falling Magpie’s tail, were both sights worth a long day’s journey to witness.

A solitary Buzzard used to roost in the wood below the Graig that autumn, and one day gave me away in the most ridiculous manner. I had frequently had discussions with the keeper as to the harmlessness of the Buzzards upon his beat, and had, as I fondly hoped, nearly succeeded in persuading him to my view; and although, of course, the following incident did not prove that the bird had been guilty of more than picking up a dead grouse, it was easily sufficient to upset all my arguments, in the man’s mind. He was sitting one evening near the top of the rock over-

looking the wood, happily for the Buzzard without his gun, when the Buzzard, making homewards from the moors above, passed so close over his head, that in her confusion she dropped at the keeper's feet a half-devoured young Grouse she had been carrying! As proving the truth of the old adage that misfortunes seldom occur singly, I was one day, shortly before that, standing talking to the same man, in the village, when a Kestrel entertained us to quite a pretty and spirited flight at a Swallow. Although unsuccessful in killing her game she made several very determined stoops, and when my companion dryly remarked, "Y Gwynlly Goch¹ must sometimes eat more than mice, I think," I felt very much in the position of an advocate defending a bad case, when his chief witness makes a most incriminating admission!

¹ I give this name as I had it spelt to me at Llanuwchllyn; usually it is written Ceinlly Goch, it is said in reference to the bird's shrill voice; other names being Gellan Goch, and Cudyll Goch: Gwynlly Goch signifies Red Wind-hover.

CHAPTER VIII

Dolgelly—The water-shed—Drws-y-nant—Monks of Cymmer Abbey—Gold—Nannaw—The Demon Haunt—Age of oaks—Caterpillar plagues—A silk dress or trees—Nature's workshop.

June 4th.—Walked to-day to Dolgelly and back, varying the route in going and returning, and exploring some of the many wild gorges and wooded ravines with which the path is intersected. Dolgelly lies west-south-west of Bala, whence, on a clear day, there is a magnificent view over the full length of the lake, as it at present exists, and on through the narrow pass beyond, till the end of the funnel is, as it were, blocked by the distant peaks of Cader Idris. Road and railway find their way side by side through the valley, over comparatively level ground, though the mountains rise abruptly on either hand to a height of some 2000 feet above them. The actual water-shed is crossed close to the farmhouse at Pant Gwen, where it is curious to notice the almost imperceptible change of direction in the flow of the water, in the ditches cut through the peat, and on the sides of the railway. Pant Gwen signifies "White Hill," the applicability of the name not being very obvious, unless it has arisen from the contrast which the rock presents to the dark peat with which it is surrounded. The action of peat upon hard igneous rock is well illustrated here, many of the stones that have lain buried in it having become so nearly white, and so much decomposed, that their true character may easily be mistaken. It is only when a large piece has been broken off that the solid blue or green heart is revealed beneath its inch or two of pale skin, and this is often no easy matter where a large stone has to be dealt with, while many of the smaller ones have been altered right through. Perhaps the name may indicate a "Hill of rocks," a descrip-

tion at which no one would be inclined to cavil who has climbed the hill which here abruptly deprives the valley of about one half its former breadth, and marks the westmost limit to which Llyn Tegid may once have reached. The Little Dee, or Dwfrdu, so named from its source on the Ddwallt mountain, here tumbles into the valley in a series of bright cascades and dark pools, forming the Pistyll Dee, and our path up to this point has coincided with its present eastward course to Bala Lake ; but with the many clearly defined terraces along its banks it is not difficult to carry the imagination back to a period, not very remote, geologically speaking, when the lake covered all the flat country now occupied by Llanuwchllyn, and the surrounding farms, and probably found a natural outlet to the sea down the deeply carved channel through which the Eiddon now trickles past Drws-y-nant ("The door of the brook") to join the Mawddach near Dolgelly. The greatly augmented volume of water thus derived would account for the disproportionate extent of the Eiddon valley to the stream it now contains, and would doubtless also play no inconsiderable part in the excavation of the wide estuary, or arm of the sea, which runs almost from Dolgelly to Barmouth, where the railway is carried over its narrow neck on a bridge nearly a mile long. The etymology of Barmouth is interesting : the ancient town was called Abermaw ; then, by the dropping of the initial vowel, it became Bermaw, from which, of course, the transition is easy enough. The Port is Ynys Brawd (Anglicè "Friars' Isle") and the district is rich in matters of interest to the antiquarian.

Near Dolgelly are the ruins of Cymmer Abbey,¹ which was all but demolished by Henry III. in revenge for one of its monks having led him into a bog when marching to attack Montgomery Castle. The monks held the rights of digging for all metals ; and as gold, as well as lead, is found in many places in the adjacent mountains, we can imagine the pious beadsmen turning their hands to mining when weary of their orisons. Within comparatively recent times very rich veins of gold have been struck in more than one

¹ See note on page 18.

boring, and judging from the accounts given in the Triads it must, at all events occasionally, have been found in some plenty in ancient days. Lywarch Hen describes warriors wearing gold spurs, and bearing golden shields on their backs, and the Gododin tells of

“ Three hundred battle knights of Eiddyn in gilded armour,
Three loricated hosts, three leaders with golden chains.”

Not far from Cymmer is Nannaw (“The Ravines”), where the Welsh family of Vaughan have been seated from time immemorial, and, as might be expected, bards ancient and modern have vied with one another in surrounding it with a halo of romance and legend.

“ Who shall tell the mysteries of Nannaw,
Or interpret the whisper of the wind,
Murmuring through the trees of elden days?
Shades of the mighty dead roam the ravines,
The echoes of her halls are eloquent ;
The stones have voices, and the walls do live ;
It is the house of memory.”

A brass plate marks the site of an ancient oak which stood here till 1813, when it was destroyed by lightning. The trunk was decayed, and is said to have measured 27 feet in girth. It was known as the Hollow Tree, or Demon Haunt (“Derwen Ceubren yr Ellyll”), from a tragedy that occurred during the reign of Richard II. Even at that date the tree appears to have been very old ; for Owain Glyndwr having quarrelled with his cousin, the then owner of Nannaw, slew him in a duel, and hid the body in the hollow trunk, where the widow discovered it after a lapse of forty years, and gave it fitting interment, the ghost of her departed lord having troubled the lady regularly, during the interval. With the age assigned to this tree before me, I had the curiosity to count the rings of growth on several large Oaks recently felled on an adjoining property, though not, it must be confessed, with any desire to question the verity of the legend, to which, in all charity, must be extended the same

poetic licence with which we accept the authority of Dryden on the oak's stages in life :—

“ Three centuries he grows, and three he stays
Supreme in state, and in three more decays.”

The result was even more disappointing than expected, for many of the trees clothing these rugged slopes, though not of remarkable scantling, are yet large limbed and of very hoary aspect. In one such situation the largest tree cut girthed a little more than 6 feet, at 3 feet from its base, and disclosed about 120 rings. The timber was of excellent quality, while about half an inch of sap-wood showed the tree to have been still in its full vigour. This tree had stood upon its own root, in one of the many similar, and apparently “ natural ” woods ; a large number of its neighbours were growing from old stools, and one or two of the largest of these cut down, though of less than half the dimensions of the other, yet closely approached it in the number of rings. These hillside trees showed, in the remarkably symmetrical arrangement of their rings, a very even rate of addition to the thickness of the trunk, any variation in width of ring being quite exceptional, and in this respect they differed considerably from some oaks I had examined a few months previously, and which had grown upon deeper and more level ground by the side of Bala Lake. The latter, as might have been expected from their situation, greatly exceeded the other trees in point of size, girthing on an average rather over 12 feet at 3 feet from the ground, and containing 100 feet or thereabouts of excellent timber. They showed from about 140 to 150 rings of growth, but these all indicated a rate of annual increase, when the trees were from 40 to 60 years old, of nearly, or in some cases quite, double that put on at any other period of the tree's existence. A large alder, which had stood on a wet place near the oaks, showed about 60 rings, and the colour and quality of its timber bore eloquent testimony to its liking for the situation in which it had grown.

Dolgelly signifies literally “ The meadow of the hazels,”

and the appropriateness of the name requires no comment. Hazel is the prevailing undergrowth in all the woods, and constitutes the larger portion of most of the hedges dividing the inclosures. It forms a poor fence, and affords little protection to stock from the weather, but it lends itself admirably to wattling, and provides everywhere the most beautiful walking-sticks that the heart of countrymen can desire. Nuts are generally a drug in the juvenile market, at harvest time, and may be picked in abundance from the roadside hedges, save, indeed, when, as is so often the case here, those "hedges" happen to be dry-stone walls. To-day, however, the prospects for autumn nutting looked anything but promising. Many of the dingles visited were draped with dingy grey instead of verdure, the leaves having been entirely stripped from most of the underwood, as well as from many of the trees overhead, by an attack of Caterpillars, such as I hardly remember to have seen surpassed anywhere else. To walk along unfrequented paths through the woods was impossible, with any degree of comfort, owing to the innumerable webs with which the way was beset, and which covered face and clothes with silken cords, and lowered wriggling larvæ down one's neck, or up one's sleeves, at every turn. To attempt picking them off was futile, as while one was being captured a dozen others would descend, and coat and collar soon became stained a sort of sickly green with the bodies of those accidentally crushed. Nor was the crowd confined to the one or two usually troublesome species. When beating for caterpillars I have often been annoyed by the numbers of such things as *Cheimatobia brumata*, that persisted in tumbling into the umbrella, but it was a new experience to find oneself shrinking from the unwelcome attentions of several species which, in bygone years, had often been laboriously searched for, and carefully taken home for rearing when found. Larvæ of several kinds of Micro-lepidoptera contributed to the plague; amongst the Geometræ by far the most abundant were (in addition to the winter moth, *C. brumata*) *Hybernia defoliaria* and *H. progemmaria*; but *Selenia illunaria*, *Crocallis elinguaris*, *Phigalia pilosaria*, and some other species,



A KING OF BIRDS (WREN).



CHAFFINCH'S NEST.

were all in most unusual numbers ; while on other occasions I found their places taken by *Cheimatobia boreata*, *Odontopera bidentata*, *Hybernia aurantiaria*, and *Tephrosia crepuscularia*, besides many *Selenia lunaria* and *Amphidasis betularia*. Any of these could have been collected by dozens, without trouble, and there were many other species which were not properly identified. Moths were also plentiful in some places, chief and most attractive amongst them being the pretty little *Venilia macularia*, the Rivulets, *Emmelesia albulata*, and *E. decolorata* ; and *Eubolia palumbaria*. Amongst the latter were many unusually small specimens, but no other very striking varieties were noticed.

There is still much uncertainty as to the causes which lead up to such years of sudden increase in the insect world, but whatever they may be, it was clear that in this case they were not confined to merely one or two species. It was also interesting to note within what narrow limits the beneficial conditions had prevailed. In one dingle, or in one copse, the caterpillars were in hordes, and the trees all bared of leaves, while in the next there might be hardly a trace of them. That similar cases of sporadic increase are sometimes attributed to immigration (as for example with the Diamond-back moth, *Plutella cruciferarum*), I am well aware ; but in this instance, at any rate, immigration was out of the question, since the females of some of the most abundant species are unable to fly, and therefore cannot travel ; and it is not unreasonable to assume that the causes, which operated so powerfully in favour of the increase of one species, may also have had a like influence upon the others. We therefore discard the immigration theory as altogether inapplicable here, and must seek the true explanation in other directions. The number of eggs laid by each female moth, that reaches maturity, is no doubt subject to some variation in different species, but is always considerable, and we shall probably be well within the mark in putting it at 300 in the case of most of those more particularly under discussion. I once counted the eggs contained in the body of another wingless species, the Vapourer, *Orgyia antiqua*, and found them to exceed 500. If, for the sake of

argument, we suppose that the whole brood of one female reached maturity, and that the sexes were equally divided, we should have 150 moths, which would produce 45,000 eggs. Repeating the process, the army of leaf-devouring caterpillars would have multiplied to 6,750,000 in the third generation, and so on. But it seems to be an undoubted fact that there are in Nature certain influences, occasionally brought to bear, which greatly alter the proportion of the sexes to one another. It matters not to our argument whether the cause originates in an augmented food-supply, or otherwise ; it is sufficient to admit that circumstances may arise in which three-fourths or even more of a brood will be females, and the result in increased caterpillars is at once apparent. The argument may be carried still further. Birds and small mammals undoubtedly play an important part in keeping within bounds the increase of such prolific creatures as all insects are, but, as is well known, the most deadly foes with which lepidoptera have to contend are the Ichneumon Flies that are parasitic upon them. Without doubt the same laws that influence the excess of one sex over the other, and the consequent periodic increase in the numbers of the host, will equally apply to the parasite, and it is only necessary to suppose a time when a year of abundance of ichneumons shall coincide with a lean year in lepidopterous larvæ, to see the disastrous effect upon the latter. The reverse side of the picture, of course, supplies "a caterpillar plague," and we begin to appreciate the subtle means often adopted by Nature to swing the scales and yet eventually to hold the balance even.

A French proverb tells us that with time a Mulberry leaf may become a silk dress, a slight variation of which might be read into the present picture. These oaks, though now stripped of their verdure, will, as soon as the caterpillars have disappeared, put forth new leaves, and by autumn will show but little outward sign of the misfortune that overtook them in the spring ; but the drain of producing two crops of foliage in one season must leave its mark in another direction ; and when, years hence, the trees come to be converted into timber, their trunks will show a narrow

growth-circle for this particular year. Of course, by that time there will remain no recollection of the "caterpillar plague"; and perhaps some sapient woodman of that distant future, in drawing the attention of a class of students to the abnormally narrow ring, may be tempted into enlarging upon the bad season, or the sunless summer, through which the trees must have passed in order to account for their lack of growth; but will he ever guess that the material which ought, in the ordinary course, to have gone to the formation of so many tons of hard wood, has been used up in Dame Nature's workshop in the manufacture of such unsubstantial things as moths?

It is in the opinion of the writer more probable that the periodic increase of insects like the Diamond-back Moth, which from time to time inflicts such serious loss upon the country, may be more satisfactorily accounted for in some such manner as that above indicated than by the introduction of the theory of immigration from abroad. That invasions from over-sea do actually occur in the case of many insects—*e.g.* the Painted Lady and Clouded Yellow Butterflies, some of the large Hawk Moths, Locusts, Dragon Flies, etc.—is of course well known; but it is, on the other hand, equally certain that the phenomenal rate of increase in some cases is due entirely to local causes. Great and sudden increase must obviously take place somewhere before a "plague" of any insect can arise, and, that being granted, there does not seem to be any very obvious reason why that increase (when it occurs amongst insects that are normally as abundant here as anywhere else) should not originate in this country as easily as in any other place.

CHAPTER IX

A caterpillar year—Its effect on birds—Pied Flycatchers—Nesting boxes—Increase and death-rate amongst birds—Changes in fauna—Plumage of Flycatchers—“Spinners.”

THE increase in the supply of food, which “a Caterpillar Year” affords, must lend a flavour of tropical indolence to the lives of all such creatures as eat them. To make a living in such circumstances can be little more than what a Yankee might describe as “quite a cinch.” Upon the occasion referred to in the last chapter, a common Shrew was noticed feeding upon one, and nearly all the Wasps returning to their nest on a wayside bank were laden with small caterpillars, or parts of them. Jackdaws and Rooks were conspicuously engaged in collecting them amongst the oak branches, and a Thrush was supplying the wants of a half-fledged family of *six* with *Hybernia* larvæ, picked from a branch quite close to her nest. Six is such an unusually large clutch for a Song Thrush, as to be suggestive of the influence of food on fertility; but unless Campbell’s dictum, that coming events cast their shadows before, were to be applied, that explanation can hardly be accepted here; for, at the time the eggs were laid, there could scarcely have been any indication of the present redundance of supplies. Wood- and Willow- Warblers, Blackcaps, Spotted Flycatchers, and Tree Pipits are all abundant here; and amongst other birds noticed feeding freely on the caterpillars, on this and subsequent occasions, were Greenfinches, a Sparrow, a Red-backed Shrike, Yellowhammers, Chaffinches, a Jay, a Dipper (where they had fallen into the stream), and Pied Flycatchers. The latter were perhaps as assiduous in their attentions to the larvæ as any other bird. Time after time I watched them catching caterpillars that hung suspended in mid-air

by their silken threads ; and one pair, whose nest was in the masonry of a bridge, brought at least forty caterpillars to their young ones during the half-hour I sat smoking a pipe upon the parapet. Another betrayed the whereabouts of his nest, in a hole in the root of an ash, below ground-level, though on a steepish bank, by snapping at a caterpillar that hung within a few feet of my head, and carrying it off to his sitting partner.

The Pied Flycatcher is one of the most engaging birds that find a summer home in these Welsh vales. So dainty and unobtrusive in all its actions, and, though shy, still so willing to reciprocate our friendship that it takes readily to the proffered nesting box even when the latter is nailed up within a few feet of an always open window. Its impatience of approach, where its haunt is in some little frequented mountain glen, seems due rather to native reserve than to any actual mistrust of man ; for though it retires promptly on our first intrusion, we need only to be seated and remain quiet for a few minutes, to witness its return. Silently it flits through the grey birches, pausing ever and anon to secure an insect, or as though to reconnoitre, till presently it alights on a dead bough quite close to us ; not, as it were, courting attention, but offering a friendly salutation in the repeated shuffling of its wings. Once satisfied that no harm is meant, it will continue its ordinary business regardless of our proximity, or without sign of fear, but it instantly withdraws again if its suspicions are aroused by any untoward movement.

Scarcely is the Robin, or the Great Tit, more easily induced to occupy a nesting box, and by judiciously moving the box each year, a pair of these Flycatchers may be drawn from quite a distance to the vicinity of the house. This is a hint which may be appreciated by some people, who may have a desire to add to the variety of birds nesting in their grounds, and with the exercise of a little patience, it does not seem improbable that the areas already occupied by Pied Flycatchers (and perhaps some other birds) might be gradually extended thereby. It must not be forgotten, however, that the Pied Flycatcher is one of those species which, for

some reason not very easy to understand, seem very reluctant to colonise new territory. Time after time I have met with a pair, in spring, in situations which, so far as human eye could judge, seemed exactly suited to their requirements, yet more often than not they have not remained for more than a day or two. Just when they appear to be fairly settled, the spirit of restlessness seems to come over them, and they steal off in the night as mysteriously as gipsies. Or in some instances where they have actually remained, and successfully brought off a brood, they have not returned in subsequent years as might have been reasonably expected. I have, however, on the other hand, known cases where new ground has been permanently occupied, and that in more than one county, so that there need be no occasion to despair of success should early efforts fail to induce them to remain.

Although two broods are not unfrequently reared in a season, and though six or seven is about the usual number of a clutch, the rate of increase with the Pied Flycatcher seems to be always very slow. Perhaps the same remark might be made with equal truth of other birds, yet it is difficult to imagine why so high a death-rate as the problem suggests should prevail amongst them. Comparatively few causes of mortality come under our cognisance, and such evidence as we possess does not seem to point to an abnormally short term of natural life amongst them. Are we, then, to conclude that violent death, or death from misadventure, is of such frequent occurrence in the avine world as the alternative view seems to suggest? or what becomes of all the young birds? It is a question that often crops up, but it is one that is not very easy to answer satisfactorily. We are accustomed to think that it is the same pair of Martins that returns year after year to the corner of our windows; or that they are the same Ravens that have nested in some particular cliff as long as we can remember. One such rock, well known to the writer, has been occupied time out of mind, and is so still, although during the last thirty years scarcely a young Raven has been allowed to fly from it. It has been recorded that "a pair of Pied Wagtails nested

twice every season, with a single exception, for eight or nine years, ending in 1871, in the ivy on a particular garden wall, and that in each of those years a Cuckoo invariably laid her egg in their second nest":¹ and that "the cuckoo never dies" is merely the expression, in proverbial form, of a belief current amongst our forefathers from like observations. Similar experiences might be chronicled almost indefinitely; and as in at least some of the cases it is impossible to doubt that it is actually the same birds which do return, it follows that the normal life of the adult individual cannot at any rate be a very brief one. This being accepted would seem to compel the admission that the excessive mortality must occur amongst the young birds in their first year. What causes it among birds such as Ravens we know well enough, and the logical inference would seem to be that had a similar persecution been waged against such species as Cuckoos, or Flycatchers, for example, they must have long ago been exterminated. Even with the disappearance of most of their natural enemies, their increase is slow; but it is steadily proceeding. Many of them have probably never been more numerous than they are to-day, and the headway now being made is probably their first really serious colonisation of the country. The naturalists of future generations may, therefore, be destined to find a British fauna materially different to that now prevailing, due quite as much to the natural increase of some species by reason of the diminution of their enemies as to the disappearance, through man's intervention, of others. The only alternative to the excessive death-rate theory would seem to be, either that the majority of the young birds are unable to find their way home again after migration, or that they find more attractive breeding places elsewhere, and there does not seem to be any evidence to support any such assumption.

Unlike its common relative, the Spotted Flycatcher, the Pied Flycatcher has a pleasing song, somewhat resembling that of the Redstart, and, like that bird, generally utters it from the leafy boughs of a highish tree. The summer

¹ See Yarrell's *British Birds*, 4th ed., vol. i. p. 403.

plumage of the male is black and white, that of the female ash-brown, very inconspicuous save for the slight dash of dingy white in the wing. In autumn, before the birds leave their nesting quarters, the distinctive dress of the male has been lost, and the sexes closely resemble one another; both, as well as their young, being then in the sombre brown plumage of the female, and, contrary to what has been sometimes stated, it is then often impossible to distinguish sex or age from external appearances, though adult males generally show more white on the wing and sometimes retain traces of the white band on the forehead. The first plumage of the young is obscurely mottled, recalling the similar stage of the Spotted Flycatcher; but it has no sooner been completed than the moult to winter plumage begins, so that specimens in this state are comparatively seldom noticed. The young ornithologist is apt to be misled, in this connection, by meeting with family parties, in autumn, consisting, perhaps, of two broods with their parents, and presenting the apparent anomaly of young in both brown and more or less spotted plumage. I used frequently to encounter roving bands of this sort in the neighbourhood of Llanuwchllyn, and am tempted to dilate upon the subject from a recollection of the time when, long ago, such flocks were often a puzzle to me.

As has already been stated, the Pied Flycatcher is sometimes double brooded, and, as though the second family had not at first entered into his calculations, the male, on some occasions as any rate, has almost completed his change to winter plumage before the second eggs are hatched, thus giving the appearance of a nest being tended by two females; or, supposing a novice to alight upon such a nest as his first experience, lending some justification to the belief that the plumage of the breeding male is practically identical with that of the female, and that the title of "Pied Flycatcher" is something of a misnomer. But the details of a single case in point may serve as a better illustration than any more general remarks, it being only necessary to state, in introducing it, that, though not an isolated instance in the experience of the writer, such cases

ought only to be regarded as quite exceptional. On 4th June, then, a pair of Pied Flycatchers, in normal plumage, were discovered feeding their young in the nest; three weeks later the hen was again sitting upon eggs in the same nest, while the cock, in addition to his attentions upon her wants, was feeding the fledged young of the first brood in the vicinity of the nest. He had then lost a great deal of his black coat, though still retaining a nearly white breast and all his old flight feathers. A fortnight later, he was still partially attending to the first brood, though they were now catching insects for themselves, as well as assisting his partner to feed the young in the second nest. At this date he appeared to be in almost complete winter plumage, though the flight feathers still remained unchanged. A little later the whole party, now numbering some dozen individuals, were hunting the alder and hazel copses together, the last young ones in their spotted plumage, the others hardly distinguishable, adults from immature. Even when at his best, the male is comparatively seldom met with in this country in perfect summer plumage, there being generally a few brown feathers intermixed with the black on the upper parts, and the amount of white on the wings and forehead being subject to a good deal of variation. Whether this is due to age or individual variation, or whether it is only the Pied Flycatchers breeding in this country that are so affected, it is not easy to say, but in any case, a male killed here, when closely examined, will seldom be found to reach the standard of perfection in which he is usually depicted in books.

As soon as their brood, or broods, are strong upon the wing (which is not till the spotted plumage has practically disappeared) the Flycatchers begin to drift away from their nesting quarters, and it is then that they may be met with in little flocks, in the larger valleys. The trend of their drift is east, or south-east, depending on the direction of the river, or the lay of the country, and, as they travel, their numbers would appear to become dispersed; for, ere the east coast is reached, the party has generally become so attenuated as no longer to deserve the appellation of

a "flock." Perhaps the real flocks may have already gone on over-seas together, and it is only stragglers which are then met with in the eastern counties of England, but there, for the present, we must bid them adieu.

The Spotted Flycatcher, which is common, is *Y Gwibedog* round Llanuwchllyn, or sometimes distinguished by the adjective *fanog* or *manog*, "spotted." To the pied species the name of *Gwibedog fraith* is applied by those who pay any attention to such small birds. Of the former there were no less than three nests in the decayed tops of old sleepers forming posts in the railway fence within a mile of the village.

In crossing the moor above Craig Benngelog on my way home, a Grasshopper Warbler was heard trilling out its monotonous song, which very justly obtains for it the inclusion amongst those birds which hereabouts are known by the name of *Troellwr*, or "spinner." *Telor-y-gwair* is another name applied to it in other parts of Wales; but here it is not at all common, for except on this occasion I never met with it.

CHAPTER X

Spotted eggs—Origin, and continuance of—Hawfinch—Woodpeckers—
Fasting caterpillars—Dried-up lichen.

ONE of the nests of the Pied Flycatcher referred to in the last chapter contained eggs distinctly and regularly freckled with numerous reddish spots, chiefly confined to the larger ends, and removable by the application of a wet handkerchief, upon which the operation left a distinct stain of pink. They were not the first spotted eggs of this species which I had seen, nor are such varieties, I believe, generally regarded as very uncommon, but they afford an opportunity for some remarks upon the subject of abnormally spotted eggs generally, with special reference to those of one or two species in particular.

It is more than thirty years ago since I first found spotted eggs in the nests of House Martins, and since then I have seen similarly marked eggs of that species, as well as of its congener, the Sand Martin, so frequently that I have long ceased to look upon them as anything unusual. They may be found almost everywhere, but the spots are frequently so small, and so pale in colour, as to be easily overlooked unless the eggs are carefully examined. The spots are usually some shade of pink, but occasionally of a darkish red-brown: they are nearly always easily removable by a slight amount of washing, so as to leave no trace of their former presence visible to the unassisted eye, and they leave a faint stain upon a white cloth used in the process of washing. I have never failed to remove the spots from unblown Martins' eggs in this way, but the colouring matter is either sometimes naturally insoluble by water, or becomes so with age, for it has been found impossible to wash the spots from

some cabinet specimens, though in others, almost equally old, their removal was not a very difficult matter.

During an equally long period, I have, from time to time, seen spotted eggs in nests of the Redstart and the Hedge Sparrow ; once or twice in those of the Water Ouzel ; and once had a similarly marked egg of the Heron. It is not unlikely that there may be a tendency for such variations from type to occur more frequently in some seasons than in others ; but in some districts well known to the writer spotted Redstarts' and Martins' eggs are so prevalent as almost to make plain eggs the exception, and to suggest that races of birds that habitually lay spotted eggs have become established. In the case of Hedge Sparrows, though spots have often enough been found, no such marked sequence happens to have been noticed. The spots are generally confined to the larger end of the egg, agreeing, in fact, with the arrangement common in normally spotted eggs ; and I have had specimens of Redstarts, Martins (both House and Sand), and once of a Pied Flycatcher, in which the spots were in the form of distinct zones : in one Redstart's egg the zone encircled the smaller end, and was well defined. Frequently the marks are mere dots, but in most of the species above mentioned I have occasionally seen them approximating in size those on the ordinary eggs of a Linnet. I have sometimes thought, however, that any increase in the size of the mark was at the expense of its depth of colour, as though the quantity of pigment had been limited. The spots on Dippers' eggs have always been small and dark in colour ; those on the Heron's were comparatively large and rather irregular in outline. It should be added that I did not personally take the latter egg, though I had no reason to doubt its authenticity.

The occurrence of such spotted eggs may already have been recognised, for all I know to the contrary ; but as I have seen no reference made to them in any of the standard works on ornithology, it has been thought expedient to devote some space to details of their description here. Because the spots are all more or less of a pink shade, and generally removable by the application of a damp cloth, it

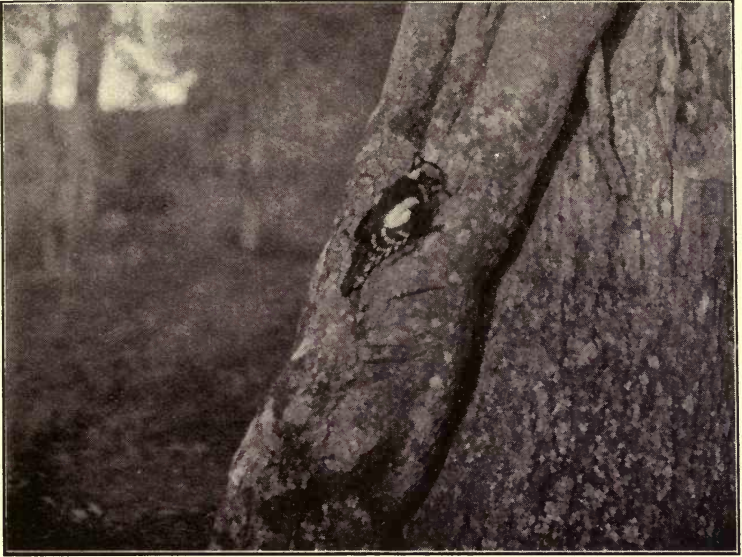
must not be too hastily assumed that they originate merely in chance blood-marks. Their persistence, and general uniformity of disposition, is sufficient to preclude the idea of chance, while the colour may be as easily washed from many eggs that are habitually spotted—*e.g.* those of some of the accipitres, grouse, thrushes, and so forth; and even though analysis should prove the colour to be due to blood alone, which I do not think is the case, it would scarcely justify the exclusion of the spots from all association with marks admittedly resulting from various other pigments. Rather, in that case, might they be regarded as pointing to the probable origin of some of those pigments, as rudimentary steps in the evolution of coloured eggs, or, as the last remnant of degraded spots, and for various reasons I prefer to look upon them in the former aspect. They seem to bear a close relationship to those spots often seen on the eggs of Whinchats, Stonechats, etc., and why such birds should almost as frequently produce plain as spotted eggs is a subject upon which we possess as yet little or no knowledge. The eggs of many other birds which are normally spotted are also frequently found without markings—Blackbirds, Thrushes, Jackdaws, and Finches, for example;—while eggs of reptiles, from which birds are descended, are always plain. Might we not, therefore, plausibly conclude that all avine eggs were originally white and that colour is a comparative innovation? On this hypothesis the occasionally spotted eggs of such species as Redstarts, Martins, or Chats, might mark the early stages of a permanent advance, and succeeding generations may come to regard an unspotted specimen of any of them as a rarity. The eggs of domestic poultry are not uncommonly more or less spotted, sometimes quite as much so, and as regularly, as those of the Turkey, and the spots are not removable by washing. Certain strains of fowls seem more prone to lay eggs so marked than others, and with a little trouble a race might no doubt be produced which would lay eggs as regularly and as permanently spotted as those of the Guinea Fowl. The occasional marks on some of these eggs might, perhaps, be regarded as opening up the still more obscure question of

the influence of the male on the colouring of eggs, but the discussion of that subject cannot conveniently be entered into at present.

A single male Hawfinch was seen near Pont Newydd on 4th June, and later in the year another was noticed at Cerrig-y-Druidion. On 7th October one was busily engaged in extracting the seeds from the berries of a mountain ash, on the roadside near Glan Llyn, but, excepting these, I saw nothing of these birds in Merionethshire. They doubtless, however, nest hereabouts in small numbers, but they are such retiring birds, especially in the breeding season, that they may easily be overlooked. Peas are sometimes raided by them in the gardens about Corwen, and further eastwards they become more common.

Great Spotted Woodpeckers were met with in many places; in the valley of the Eiddon they are almost as frequent as the Green Woodpecker. Some of their nesting holes I ascertained from actual measurement to be perfect circles, with an almost identical diameter of $2\frac{1}{4}$ inches; nor did the soundness or otherwise of the trees bored at all influence the size and shape of the holes. It is really most wonderful how the birds are able to preserve a mathematical accuracy that would certainly tax the powers of the most skilful mechanic were he deprived of his calipers. From one not very large and much decayed trunk I disturbed a Woodpecker; probably he had only been engaged in digging in the soft wood for insects, and not for nesting purposes, but I was rather surprised, when I shook the tree, to see a Squirrel emerge from one of the adjoining holes.

The weird call made by the Great Spotted Woodpecker in spring has been much written about, and it has been generally accepted that it is produced by rapid hammering upon a branch. That the birds do make a loud noise in this way when the vicinity of the nest is threatened has been abundantly testified by many observers, but I have never heard what I must call the *bleating* note produced under such circumstances, the hammering noise then made sounding to my ear something quite different. This bleating call is undoubtedly a message of love, in the nature of



GREAT-SPOTTED WOODPECKER.



LANDRAIL ON NEST.

a song, and is not likely, therefore, to be repeated in the face of apprehended danger. Although the head of the bird has been seen to be in rapid motion when the call is made, I do not think it possible that all the sound can be of mechanical origin, but am of opinion that any hammering, then indulged in, is rather by way of accompaniment to a vocal effort. The lack of interest displayed in natural history subjects, in these parts, has already been alluded to, and it was not, therefore, surprising to find that, though this peculiar note of the Woodpecker was well known to the country people, they had no idea as to what bird produced it, nor generally, indeed, whether it was the voice of a bird at all. Like the note of the Nightjar and some other birds, it is still regarded, generally, with more or less of superstition, and, so far at any rate as this part of Wales is concerned, is included as one of the calls of the dreaded Deryn Corff, or "corpse bird." The common name of this Woodpecker hereabouts is *Delor-y-derw*, sometimes varied to *Tarard-y-coed*, or *Cymmynwr-y-coed*, *Enochell-y-coed*, and *Casegwanwyn*. Some of these are, however, likewise applied to the Green Woodpecker. One person knew it as *Delor fraith*, or "pied woodpecker."

In one of the dingles, where a considerable cliff is surrounded with trees, I was much interested to see a Great Spotted Woodpecker climbing up a lichen-covered rock, and a closer examination disclosed the probable attraction in a colony of the caterpillars of *Bryophila perla* which were feeding upon the lichen. This little moth is not uncommon here. In more than one instance I found it upon the walls of houses, both occupied and some that had become ruins. The curious little blister-like dwellings which the larvæ construct for themselves amongst their food are well known, and as a rule they seem to escape the attentions of birds pretty well. Perhaps the larvæ may be one of those species which birds do not care for, but near Bala I saw a Coal Tit which had found them out, and which carried off several of them to feed its young within a hole in the wall on the opposite side of the road. Elsewhere I have seen a Great Tit hunting for and eating them. During a spell of

hot weather in June the walls often become so dry that a casual observer might well be pardoned for supposing the patches of lichen—then literally as dry as dust—to be baked beyond all hope of recovery. That a delicate caterpillar should be able to live upon it in such circumstances seems still more unlikely. At such times the creature seems to shut itself up in its chamber, and to cease feeding. If extracted therefrom it is limp and shrivelled, and seems almost past praying for, but the change brought about by a day or so's rain is extraordinary. The lichen swells out and starts to life again, and the caterpillar emerges from its nest, and resumes its ordinary business of "feeding up," as though the drought had caused it not the least inconvenience. Indeed, those situations that are liable to become most sun-baked seem to be its favourite resorts, and, by preference, it seems to choose lichen growing on lime, or some other stone specially susceptible to heat. The moth, when it emerges about the beginning of September, sits with wings closely pressed to the lichen-covered wall, and although it seems to be nowhere a very rare insect, he or she who can then pass it by without stopping every time to admire its modest beauty, and the admirable lesson it has to teach in protective colouring, has certainly small claim to be reckoned as a nature-lover. The larvæ of the much less attractive Muslin Moth, *Nudaria mundana*, likewise feed on wall lichens, but seem generally to prefer damper situations. It is abundant about Llanuwchllyn in outhouses and so forth, but is easily overlooked, as the moth wanders so little from the place where it is hatched.

CHAPTER XI

A mountain walk—Advent of Spring—Its effect on insects, flowers, and birds—Sable singers and weird serenades—"Not by his bill we know the Woodcock."

March 30th.—Had a long tramp over the mountains; the sun quite hot in the valley, almost oppressive after the recent cold spells, and making one long to be free of winter flannels. Thrushes singing everywhere, likewise Hedge Sparrows and Chaffinches; Sparrows busily engaged in stuffing the holes below the spouts full of straw, and Starlings twittering on the chimney-tops, all forgetful of late privations, and as heedless of any further cold weather that may be yet to come. On the mountain, the advent of spring is necessarily retarded considerably beyond the period when its influence is felt in the valleys below, but to-day all the world is humming, and the tune must be piped the quicker if the minstrel's time is curtailed. The cold damp peat is slow to start to life, but once the process has fairly begun, progress is rapid. But yester-week winter held the hills in close embrace—March had come in like a lion, as the old saw says,—but to-day the balmy south wind is driving him like snow before a fresh from the innermost nooks of the corries. Insects are springing to life from the bed of every mountain rill, and the eager trout are sucking them down as they float on every eddy; on the gravel beds Grey Wagtails are nimbly joining in the pursuit, and the Dipper, hastening past, has his bill filled with them for the callow brood in his "moss-theckit hame" beneath the linn yonder. The influence of spring is felt in every breath we draw, and in every prospect that fills the eye, from the greening of the brake where the alder has hung forth her catkins, to the restless band of Titlarks that are dancing

their way upwards to the distant flocks that serve them as a summer residence. All is haste and bustle to take advantage of the good time that has arrived, and only man has leisure to dream of the frosts of yesterday, or the possibilities of to-morrow. In the shepherd's garden Crocuses are expanding to the sun, and under the shelter of the rocks by the pathway their diminutives, the modest Celandines, spread wide their golden petals to greet the passer-by, and assure him that winter is indeed past and done with. Wordsworth, with an eye ever open to the beautiful in Nature's lowliest gems, could not overlook the charms of "The Small Celandine"—how says he?

"I have not a doubt but he,
Whosoe'er the man might be,
Who, the first, with pointed rays,
(Workman worthy to be sainted),
Set the signboard in a blaze,
When the risen sun he painted,
Took the fancy from a glance
At thy glittering countenance."

The bee, yellow-legged and pollen-covered, hastening from flower to flower, is humming the song of spring not less ardently than yonder wanton Lapwing that beats the higher air with resounding pinions. *Peesweep-weep-weep-wibbledy-weep* he cries as he turns somersaults in sheer exuberance of spirits, or, swooping down upon his mate, urges her to leave grub-hunting and follow him in his mad gambol. Anon a pair of Partridges draws his attention further afield, and, curveting overhead, he dashes down upon them in well-simulated anger. The cock ruffles out his neck feathers, bending low his head to meet the onslaught, and leaps into the air as the plover passes, giving vent to an angry *Ker-r-r-wick*, as who would say, "Just stop that silly flapping and come down here a moment and see if I don't show you which of us two is the better bird." But the Peewit is already off on nimble pinion, and pays no more serious attention to Sir Partridge's challenge than he does to the bluster of the cock Grouse

Sable Singers and Weird Love-songs 81

he is now engaging a couple of hundred yards further up the hill.

Then see that pair of Rooks sedately walking over the bents, one perceptibly bigger than the other. They move with slow and solemn steps a few yards apart, till the larger bird, finding some tit-bit, calls proudly to his lady to come and take it. This she does with shuffling wings and querulous cry, in mimicry of a young bird being fed, and while she is devouring the morsel, with the utmost apparent disregard of the emotions of her gallant cavalier, he struts around with spreading tail, and trailing, half-opened wings, cawing his approval and entreating her to enjoy the food he has provided. He is her most devoted servant, but at the same time would call her attention to the perfection of his spotless attire, the sheen on his glossy blue-black coat, and the fashionable cut of his loose-fitting pantaloons. Evidently he prides himself on the curves of his bill, too, and the white-by-contrast ruffles round his face and throat. The love-song that he is pouring forth the while is hardly loud enough to be audible at this distance, but, when heard, is one that always strikes us more from the grotesque display with which it is delivered than from any compass it may possess—a series of odd creaks and chuckles, emitted in a subdued voice, punctuated here and there with a louder *caw, caw*,—that is all; but yet it serves its purpose. Like Robbie Burns's shepherd laddie, he is confessing that his heart is in a flame, and to properly attuned ears his lilt is as sweet as the most dulcet notes ever trilled by Nightingale to a summer's night.

On the slender top of the highest silver fir, at the corner of the plantation yonder, sits another sable singer whose hoarse chant scarcely sounds to our ear like one of love. Yet could we interpret it rightly it would be found instinct with just the same feeling as that which breathed over another bride who was black but comely in the days of old. As Crows pair for life, it might, perhaps, be more exact to describe the present ditty as a chronicle of the virtues, old and new, of which the singer has found the well-tried partner of his joys and woes to be possessed, rather than of

the praises of a new bride. Assuredly the life of the Carrion Crow would seem to be filled with cares that might stifle song, so far as this country is concerned at any rate, for here nearly every man's hand is turned against him at all seasons, and spring is the time of all others when his enemies most rejoice over his death. He carries his life continually in his hand, so to speak, and it especially behoves him now to go warily, if he would avoid the many traps and poisoned baits laid for his destruction, but this morning he recks not of it. The ardour of spring is in his veins, and though his destiny may be to be nailed to a tree to-morrow, he must sing to-day. John Jones will tell you that ever since he can remember—and he was born on the farm more than forty years ago—there has been a Corby's nest in Traws-coed,¹ and nearly every year he, or Evan Jones, has put a shot through it, and killed one or both of the old birds. Last year Harry Jones trapped two, and Evan shot a third, yet spite of all the Joneses, a fresh pair turns up every year to take the place of the slain. Where all the Crows come from, or what is the particular attraction about the Traws-coed, is as much a mystery to the Jones family as to other people; but, like Ravens, it seems well-nigh impossible to banish them from an ancestral home, and yonder dusky robber is now proclaiming to all whom it may concern that he is, by direct descent, in male tail, as the lawyers would say, the rightful owner of the heritage, and that he is, moreover, prepared to hold it for his lady, by strength or by stealth, against all comers. The Joneses are the only foes he really fears, for hawk, or other winged intruder, is fearlessly engaged, and ruthlessly pursued, should they presume to show face near his domain, and he brooks no rival of his own kith within a mile's radius. He lives by the sword, and is prepared to die by it (or the more fatal gin) when his time comes; but till then he is equally determined to have a good time, and his rancorous cry, audible though he is a good quarter of a mile away, is his way of expressing the fact that love hath him, too, in the net. It is withal a weird

¹ The Cross Wood.

“Not by his bill we know the Woodcock” 83

and eerie serenade, but it touches a sympathetic chord where it is intended to ; and as we listen to the reply of his mate from the other end of the wood, and note the varied intonations of voice, we feel that Crow is holding commune with Crow, and that though their *repertoire* may be limited in syllables it is still sufficient for requirements.

At the edge of the wood a cock Pheasant (*Gwyddiar*, *Cædiar* or *Ceillog-coed*), resplendent in purple and gold, is strutting before his three or four wives, like a Sultan in his seraglio, and the sun seems to find new tints, or reburnish old ones, in his gorgeous plumage ; while a Woodcock rising from the heather at our feet causes my companion to repeat an old proverb, “Neid wrth ei big mae nabod Cyffyllog” (“Not by his bill we know the Woodcock”). Few, if any, of these birds remain here to nest, though the hanging woods, if less trespassed upon by stock, would seem to be admirably adapted to their wants, and this is probably only a lingerer, who has not yet started for his summer quarters. In winter there are generally a few Woodcock about, but not, by all accounts, nearly so many as used to be the case a few years ago. Perhaps, as the recently planted fir woods grow up, the place may become more attractive to them again.

The same tale of spring is being told on the upland moor, where the Grouse (*Grugiar*, *Cochiad*, *Cochiar*, or *Ceillog-y-mynydd*) is crowing among the heather, and the Curlew whistles overhead, and on the marsh where the Snipe bleats in the air, and frogs are croaking in the pools below. The influence of the south wind has penetrated everywhere—the voice of the turtle is heard in the land,—and Nature is bidding all her children rejoice in the mere pleasure of being alive.

CHAPTER XII

Midges—Effect of frost and damp upon them—And upon caterpillars, and other insects and animals—Blood-worms and Water-worms—Screws—Gnats and Mosquitoes—Midgy—Smoke-like columns—Swallows and other birds flying high—Weather prognostics.

UNDER the shelter of the fir trees little crowds of Midges are dancing in the sun, and a stray Tortoiseshell Butterfly, flitting past, makes us pause to wonder where such frail creatures can have weathered the recent storms, or how it is that the frost does not congeal the thin blood in their slender bodies. So long ago as 1776, Gilbert White was puzzled by this same question, for commenting on the great frost of that year, he writes that two days after the thaw had set in, swarms of little insects were flying as though they had felt no frost, and adds, "Why the juices in the small bodies and smaller limbs of such minute beings are not frozen is a matter of curious inquiry." Many of the midges which we see abroad in winter have, no doubt, been recently hatched from their pupæ, but that, of course, does not help us very much in the present connection, for, in the pupal state, they might be presumed to be as susceptible to cold as at any other time. Yet it is well known that a large proportion of insects of all kinds pass the winter as pupæ, often without the slightest protection, as witness, for example, the chrysalides of the common white butterflies which may be found quite naked, and exposed, on the sides of rails, or walls. On the other hand, plenty of mature insects may always be found also sheltering against tree trunks and in a hundred other places, at any season of the year, be the frost never so keen. Without going to the Arctic regions, where many insects abound that in the ordinary routine have to withstand temperatures many degrees below zero, we have ample evidence in this country

that frost does not hurt them. Wet is probably more prejudicial to them than cold (although, as presently to be noticed, water seems to have no terrors for some species which ordinarily live in more or less dry surroundings), and a mild winter, with its alternating frosts and thaws, more to their dislike than a severe one. Chrysalides and caterpillars of lepidopterous insects have frequently been known to produce imagines even after they had been frozen sufficiently hard to be quite brittle, and the larvæ, and pupæ, of gnats and midges must often pass through similar experiences. Even higher animals, such as fish and frogs, may be frozen into ice, and yet, when liberated, and thawed, appear to be none the worse for their experience. In all such cases, however, it is almost certain that no actual solidification of the fluids of the body can have been brought about. That partial freezing does take place is evident, but were the "blood" to be thoroughly congealed it is probable that life must cease to exist. The process of "thawing" is probably attended in most cases with more risk than that of "freezing," and it is in order to avoid such alternations of heat and cold as are attendant upon a frosty night, followed by a bright sun, that insects so frequently choose the north side of a tree on which to shelter during winter.

The bottoms of some of the little pools in the peat may be noticed to be alive with "Blood-Worms,"¹ frail thread-like bodies, which, waving in little crowds from their ingeniously constructed tunnels, seem to dye the undisturbed

¹ Not to be confounded with the entirely distinct Water Worms (*Tubifex rivularum*), to which they bear some slight superficial resemblance. Little colonies of the latter may also be detected amongst the peaty "mud" in many of these same pools, although only a day or two ago the water was covered with ice, and ere a few weeks have passed it will, in normal circumstances, all be dried up, and the bottoms of the erstwhile pondlets baked by the summer sun. Such of the midgy larvæ as are destined to survive will have completed their final metamorphosis before the time of drought arrives; but what then becomes of the water-worms, which know no such change, and to whose existence dampness at any rate, if not actual water, is supposed to be essential: what useful part in the economy of Nature they are designed to accomplish here: or how the stock is renewed, when the depressions once more become converted into miniature lakes, are further "matters of curious inquiry" which might usefully engage our attention. At present it is sufficient to note that neither "fantastic summer's heat" nor winter's cold interferes with the continuance of the race, and the one fact is almost as astonishing as the other.

water a bright pink colour. On the slightest disturbance each red thread is withdrawn into its case, all visible motion instantly ceases, and all that is discernible at the bottom of the pool is a mass of what looks at first sight as if it might be petrified grass. Examine this, however, and it will be found to consist of an infinite number of slender tubes, clustered together, some of them nearly an inch in length, but of varying dimensions, each constructed of particles of peat or other matter, firmly glued together by a sticky secretion exuded by the salivary glands of the tenant, and each forming the temporary home of a blood-worm. These are the larvæ¹ of some of the true Midges, relatives of the dancing "Harlequin Flies" we noticed flying under the lee of the trees, and of which a very large number of different species are recognised as natives of Britain. Larvæ of other members of the same family may be seen in abundance in any rain-water barrel that has stood in the open for a short time, in the shape of the familiar "screws" that, in diverse form and size, are continually wriggling through the water. Some of these have large and conspicuous "antennæ," often whitish in colour, others are provided with a breathing process somewhat resembling the external gills seen in the tadpole stages of newts. Others again spend most of their larval existence in little dwellings glued to the sides or bottom of the barrel, very similar to the cases we have just been examining. Many of these insects, though differing so much in appearance as larvæ, very closely resemble one another in their adult or winged state. They then, also, are so much like gnats, or mosquitoes, that the groups are by most people not distinguished from one another, all small flies being classed together as "midges." It may therefore be of interest to point out, in passing, two simple means by which true Midges may be recognised from Gnats or Mosquitoes. In the latter the vein, or rib, that forms the front margin of the wing is continued round the tip and down the hind margin also, while in a midge it ceases near the tip. A mosquito, also, when at rest, stands

¹ A few weeks later the perfect insects were noticed emerging from some of these tubes, slim, long-legged creatures, much resembling gnats.

upon its first two pairs of legs, and tilts the third pair up behind; while a midge rests upon the second and third pairs, and waves the first pair in front of it. This peculiarity may be very conveniently studied on almost any window-pane in summer, where representatives of both groups are generally to be seen; and is the origin of the name *Chironomus* applied to midges, from the Greek signifying "one who waves the hands."

The name Midge, or Midgy, is of respectable antiquity, differing but little from the original Saxon *Miege*, signifying a small insect, a title that cannot be regarded as undeserved when it is remembered that some of our British midges measure no more than $\frac{1}{13}$ th of an inch in length, and that the largest scarcely exceeds three-quarters of an inch. With some of the smaller species, most people who spend the summer evenings out of doors are only too familiar. It is, perhaps, small consolation to know that, as with gnats, it is only the female midge which bites us, but it helps us to comprehend how exceedingly numerous "midgies" are almost everywhere. Those which are most troublesome to us are chiefly terrestrial throughout their lives, spending their larval state in decaying timber, and other refuse; whence their prevalence in those shady places which would be so grateful to us in hot weather but for their presence. All appear to be short-lived in their perfect, or winged state, loving to dance away their little lives in the sun, and it seems wonderful that so many of them should be found abroad during the cold months of the year. Insect-eating birds, however, require to be provided with food in winter and summer alike, and one of the little party of Golden-crested Wrens foraging among the fir trees yonder may ever and anon be seen sallying out, in Flycatcher fashion, after some midge that it has disturbed amongst the branches, or which has danced too near the trees for its personal safety.

On a summer afternoon "Midgies" may often be seen dancing in such dense swarms as to give their columns a resemblance to wreaths of smoke as they rise and fall above the trees. The columns are swayed hither and thither by any gentle breeze that blows, or may be temporarily dis-

sipated altogether, adding considerably to their smoke-like appearance, but time after time they will be re-formed in almost exactly the same spot. The preference for the vicinity of trees is no doubt partly accounted for by the shelter they afford, but is likewise probably due to the heat radiated from their leaves for some time after the rays of the sun have ceased to strike them. In fine, settled weather, the columns often rise high above the trees, so as to be lost to our vision ; but they are followed by the Swifts and Swallows, which, being easily seen, then obtain all the credit attaching to the weather-wise, without reference to cause and effect. It is an old and popular belief that—

“When the Swallow fieth high,
Then the weather’s always dry ;
But when she lowly skims the plain,
Ere the morrow there’ll be rain.”

And, though doubts have sometimes been cast upon it, in this incredulous age, the belief is probably founded upon more substantial grounds than many similar bits of weather lore, but the possible insect link in the chain of circumstances is commonly overlooked. That other birds, as well as “swallows,” delight to sail about in the higher atmosphere in fine weather, is familiar to all ; but from their actions when aloft, it is not difficult to see whether they are feeding, or merely flying for sheer enjoyment. Very often it will be obvious that the former is their object, and it is easy to imagine that the ethereal bodies of small insects may be especially sensitive to climatic changes. Some idea of the height to which some insects will ascend may sometimes be formed when, happening to be pretty high up upon a mountain side, we see Starlings, Swallows, or Swifts, engaged in insect hunting far overhead. I have frequently observed Black-headed Gulls so employed above the summits of the Welsh mountains, as well as in other places ; the insects they are after being (as proved by dissection of some of the birds killed) largely Craneflies and Beetles, though an occasional Moth (*Plusia gamma* and *Charæas graminis*) has also been found in their maws.

CHAPTER XIII

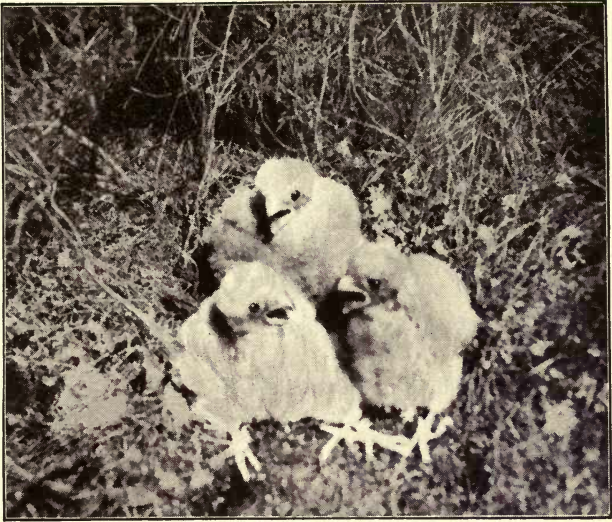
Mole-trapping—Farmers' friends—Nature's drainers—Habits of the Mole—
Price of skins—Names—Varieties—Superstitions.

FAR up amongst the hills I came upon a farmer setting mole traps,—a practice followed by nearly all his neighbours in these parts. He told me he had already killed about sixty Moles this year, another man said he killed from eighty to a hundred each season. True, these are mostly killed in the "fields," where their hillocks may interfere a little with hay-cutting, or other agricultural operations, but to a considerable extent they are also trapped on the hill beyond the enclosures,—a practice so inconsistent with common-sense that it is surprising it should be persisted in. That he follows old customs is the best reason that the farmer can give for his proceeding, and whether the Mole ought to be regarded as a friend or otherwise is a question he hardly thinks it worth while to consider. On land under the plough a Mole is, no doubt, undesirable, his tunnels frequently uprooting corn, and still more often turnips or potatoes; for, attracted by the worms which follow the dung used, he will often push his way straight down a line of roots, sometimes letting in the drought and so injuring the young crop. In Merionethshire, however, lack of moisture is not often a cause of complaint; and when, as is so frequently the case, the land is over-wet, the runs of a Mole furnish a very efficient system of drainage. On the unenclosed hill, which is generally wet, the good done by a mole in this way is difficult to estimate; and for other reasons besides his labours as a drainer, he ought to be regarded by the farmer as a good friend, rather than as a pariah.

The farm where the mole-killing was in progress to-day is infested with Voles, and of these the Mole is known to be a destroyer, when his ordinary food of worms and grubs runs short. He may (and I think does) take a certain quantity of vegetable food, in the shape of underground shoots of grass (generally, be it noted, *couch grass* where it occurs), but any damage done in that way is so insignificant that it may be ignored, while his hillocks form a good top-dressing to the grass, and are gradually spread by sheep, who thereby, it has been claimed, help to grind off the superfluous growth of their own hoofs.

The range of the Mole in Merionethshire extends to the summits of the highest hills. It follows the runs of the Voles, wherever these may lead, and often pushes up to altitudes to which they do not aspire. On the rocky tops of the Arans, its runs were frequent everywhere, under the disappearing snow, when I climbed those hills a few weeks ago ; and the peat in many a rock basin, to which the only access was by an over-land (or rather, over-rock) route, was often riddled by them. In summer the same thing may be noticed, the tunnels appearing in many places to which no underground communication exists. In this way it becomes perfectly evident that the Mole must, occasionally, travel for his pleasure upon the surface of the ground,—a fact well enough understood by some old mole-catchers, but not, I think, generally known. To some extent Moles feed on the surface ; but what sense it is that prompts them to undertake the longer journeys, unless it be a pure love of wandering, or whether they simply “follow their noses,” as the saying is, and trust to blind chance as to whither they may be led, may for the present be regarded as an open question. Without attempting to solve that point, the following observations, made during two consecutive years, may be of interest : they only confirmed others I had made, years ago, under very nearly similar conditions.

In a certain field that I had under almost daily observation, there was a slight depression filled with a black peaty soil. The land round about was hard and stony, of poor quality, and little calculated to tempt a Mole to bore it.



YOUNG MERLINS.



PEEWIT'S NEST.

This soil was probably derived from old glacial action, and the depression represented an ancient lakelet, that had subsequently been filled up by a growth of peat. This peaty area was perhaps about thirty yards in diameter, and was surrounded by at least a hundred yards of the stony *débris*. There were no mole-hills anywhere on the whole area when I first became acquainted with it. Early in March, the first hillocks appeared on the margin of the peaty soil, and for about three weeks they slowly increased in number at very regular intervals of about five yards apart. Sometimes more than one new hill was thrown up in the course of twenty-four hours, at others a day or two elapsed without any addition being made to the line, but whenever a fresh one did appear, it was sure to be at about its proper distance from the last, and always in the direct line of advance, all skirting the edge of the softer and richer soil, and marking out the old depression almost as regularly as the dotted lines upon a map. This main run was too far below the surface to leave any trace upon it, save for the line of heaps ; but branching out from it were many shallow side tracks, just below the roots of the grass, and visible enough on the surface. These latter, of course, marked the foraging excursions of the animal, and the heaps the steady occupation of new territory. This all agrees very well with the known habits of the mole, except that no hillocks, nor any visible track, marked the way by which the pilgrim had crossed the desert. Unfortunately, the farmer now arrived upon the scene, the hillocks offended his eye, a trap was set, and, passing one morning, I found my poor Mole dead. It was a female. The hillocks gradually disappeared, and no other Mole worked that reserve throughout the remainder of that summer.

Early in the following autumn, however, I was particularly glad to notice that another Mole was at work there, two hills had been thrown up in the night, but, as before, no track was visible by which the hard land had been crossed, and the ground was so closely examined that it was not possible that it could have been overlooked had it existed. There was no doubt whatever that this Mole must have

travelled over-land. Whether or not a pair arrived in company it was impossible to say, as of course they were never seen ; but from the frequency with which the hillocks began to be thrown up I very soon suspected that more than one must be at work, and this was later found to be the case. I think it may be taken as almost certain that they did come together, and that they worked in company throughout the winter. The same line of hillocks was followed, perhaps because the old workings may not have become quite filled in, and had been found and taken advantage of. The same regularity in the work was observed, except that the new hills appeared about twice as fast as the old ones, and by the middle of November the whole depression was encircled by a regular line of forts. A straight line of hillocks was then drawn to near the centre, after which they began to spread about irregularly. In March, traps were again set, and two Moles, male and female, were killed, evidently the sole occupants of the place, as hill-making again ceased. This female would shortly have been the mother of three little ones.

The peculiar form of the Mole, and its admirable adaptation to the subterranean life it leads, can never fail to interest the young naturalist, but so much has already been written elsewhere on that head that the subject, attractive though it be, must be passed over here. Suffice it to say that our Mole is not blind, though some near relatives, not natives of this country, are so, and that Shakespeare's admonition to "tread softly that the blind mole may not hear a footfall," seems obviously intended to lay stress on the acute sense of hearing possessed by the animal, rather than on its comparative deficiency in the other direction. Its eyes being of little use to it underground have become almost atrophied ; but with the decline in the power of vision, the organs of smelling and hearing have become more keenly developed, and it is upon these latter senses that the Mole chiefly relies to bring it to its prey, or to keep it out of the way of danger.

Earth-worms form the staple of its diet, but in addition to these, many insects, in all stages of their development,

are eagerly sought after, the skill of the Mole as a pupæ hunter being well known to every entomologist who has had recourse to "digging." Too often he finds the ground round some favourably placed tree, beneath which he himself would dig, already so thoroughly ransacked by a Mole as to make it waste of time for him to try it. Indeed, so systematically does a Mole do his work, that it seems surprising that so many insects, which pass their penultimate stages in the ground, should escape. Pupa-digging is rather fascinating work, and, when taken up by schoolboys, usually begets a language of its own. In my day, the digger became a "puper"; and the following verse, inscribed in my old copy of that most useful little booklet, Green's *Insect-hunter's Companion*, is so germane of the subject that it may be quoted here.

"There, all chilly and cold, on a dull autumn day,
See the puper at work with his tool,
How engrossed he examines each handful of clay,
And each bunch of dry leaves—the poor fool
Need not feel disappointment because he espies
No pupæ 'neath that tree, spread o'er him,
He's a novice indeed if he don't recognise
That a mole has been busy before him."

The following notes on the habits of the Mole are chiefly from the experience of an old professional mole-catcher, an acknowledged authority on the subject in his district, and have in almost every detail been borne out by my own observations, whenever opportunity has occurred to disprove or establish them. Moles, this person believed, are either monogamous, or where one male may have more than a single wife, he caters for all his progeny equally. In such cases of polygamy, the same hillock shelters the nests of all his wives. Two nests have frequently been found in the same hill, each containing young, and more rarely three, but never more; and where traps have been set, two or three females have sometimes been caught, but never more than a single male. Always, however, there is one male in attendance. Four is about the average number of a litter.

My informant had cut open a great many gravid females, and had found them to contain as few as two young, frequently only three, but never more than six. The males make sleeping chambers for themselves in the vicinity of, but quite apart from, the hill occupied by their wives. These sleeping apartments branch directly off the main run, and are bedded with grass and other soft vegetable matter. The nests for the young are very carefully prepared in a large chamber, the roof and sides of which are pressed and padded until they become quite firm and practically proof against water. The materials used in the construction of the bed, intended for the young, are grass, usually followed by an outer lining of tree leaves, after which follows fine grass, and upon that the mother adds a warm lining of fur from her own body. For this purpose she will divest herself of almost her entire coat, so that by the time she begins to move about again she is found covered with new fur, short and thick, and of a uniform length, which is very soon in its best condition, commercially, as "a skin." Males, on the other hand, shed their coats in an irregular manner, and are often very ragged when killed, their skins, in such circumstances, being practically valueless. Such of the animals as are worth it are taken home and skinned, when the trapper is in regular work, the pelts being pegged out and dried in the sun with little further attempt at curing. For such skins the present price obtained from dealers is about three-and-sixpence a dozen, and ladies may be interested to know that it takes from 600 to 700 skins to make an ordinary jacket.

Most of the carnivorous animals prey upon the Mole: Foxes are very fond of it, and its scent has a strong attraction for dogs, Setters or Pointers often standing to it as though they were upon game. When caught, it gives vent to a shrill squeak. On the Welsh hills it is a favourite prey of the Buzzard, and I have frequently found its remains in the castings of Ravens and Owls. Weasels and Stoats make free use of its tunnels, and, no doubt, the rightful owner often falls a victim to them. In Wales the Mole is known by a variety of names, *Man-geni*, *Man-*

cynhenyd, *Samp*, *Gwadd*, and *Gorrdodyn*, being only a few of them. The ancient English name of Mouldwarp, or Mouldiwarp, is, according to Bell, derived from the Anglo-Saxon *Molde*, soil, and *Weorpan*, to throw up. It is still, with little variation, in common use in many parts of England, Moudiewart being the everyday name of the animal in the North. In the west it becomes Want, suggestive of a Danish origin, the old name in that language being *Wand*; *Vond* is still the Norwegian name.

Varieties in colour, in the Mole, seem to be particularly liable to occur in certain districts. In many places they are not uncommon, but in Merionethshire they were looked upon as being very rare. I only heard of one "white mole," and my informant did not care how long it might be till he saw another, as on the day he brought that one home, his cow died, and he naturally connected the events with one another. This recalls a somewhat similar superstition that prevails in other places, to the effect that the catching of a white mole presages the death of its captor, or in some cases of the head of the house upon whose land it is killed. On the other hand, I was informed by another person that the head of a white mole was one of the best charms that could be used in "un-witching," or breaking a spell of ill-luck; a rite that was of frequent observance in these parts up to well within living memory, and has probably not yet quite died out amongst the mountains.

CHAPTER XIV

A mountain walk—Moths—Protective mimicry—Roman remains—King Arthur—Caer-gai—Drumming of Snipe—Effect of landslip—A modern moraine heap—Weeping ashes—Tall stones—Thrushes and Blackbirds: Food and songs of—Frogs—Newts—Aquatic sheep—Moths—Butterflies—Dragon-flies.

April 5th.—Started with a companion for the top of Arenig-fawr (2800 feet), on a beautifully fine morning, full of “the song of the nodding grass and the bird in the hedge.” In passing through the valley, noted the reappearance of Sand Martins, Wheatears, and Willow Wrens, and the return of many other birds to their breeding quarters. A Reed Bunting was singing in a rushy field, and a pair of Pied Wagtails had resumed possession of the bit of old wall that served them for a nursery last year.

Above Pont Lliw, a Yellow-horned Moth (*Cymatophora flavicornis*), flying round a birch tree, in the full sun, was busily engaged in depositing her ova. This she generally did (as I have before noticed this species do), by resting for a moment on the tips of the bare branchlets, and curling her body round beneath her so as to leave a single egg on the under side of the branch. The eggs were all distributed in this way on separate parts of the tree, two seldom being in very close proximity to one another; but occasionally they were laid on the upper surface of rather a thick branch; usually, but not always, near a bud, or at the junction of a twig. After depositing perhaps twenty or thirty eggs on this tree, she flew off, probably in search of others on which to continue the operation. We see in this way how it is that the caterpillars of this species are always found singly, perhaps only one on a tree, and therefore come to be regarded as rather good finds. Although, from a very early stage, they spin themselves up in a nest between two leaves, I have never experienced much difficulty in beating them

into an umbrella, and have, in this manner, found the Moth fairly plentiful in most hilly districts, where natural birch woods were abundant. The moths usually emerge in March, and the individual here noticed had not improbably been waiting for some weeks for fine weather in which to complete the business of her existence. When at rest, the insect often clings to quite a slender branch on a birch tree, where, though from its bulk conspicuous enough, it bears so close a resemblance to a tuft of greeny-grey lichen as to present one of the most remarkable instances of protective mimicry to be met with in the insect world. In such shelterless situations, it is able, as I have frequently noticed, to brave days, or perhaps even weeks, of severe frost, becoming numbed, or "dormant," but reviving again on the return of fine weather. In very hard frosts, of long continuance, I have, however, sometimes found this, or kindred species, that had apparently succumbed to the weather, but such cases are quite exceptional, and it is generally impossible to tell that death may not have been due to other causes than mere cold.

On the following day, I found an apparently hibernating female of another rather scarce moth, in my experience, and of which no other specimen was seen at Llanuwchllyn, namely *Scotosia rhamnata*, under a stone at Llyn Lliwbran, near the top of Aran Benllyn. Its occurrence there being all the more unlooked-for as there is certainly no buckthorn growing anywhere in the neighbourhood.

Our road now lay past Bryncaled, the "Hard hill," and, in passing, two Magpies were noticed flitting about the trees surrounding the adjoining farm house, which appropriately enough is called Llwyn-piod, or the "Magpie bush." Down below us lies Pembryn-coch, or the "Red brae," a name, sometimes appearing as Bryn-goch, of common occurrence in the district, and often associated with scenes of former bloodshed. Craig-felen is the "Yellow rock." A little further on is Castell, and beyond that again Llechwedd-ystrad, or the "Hillside road." The old Roman road, which crosses the hills on the opposite side of the valley, by Bwlch-y-groes, "The Pass of the Cross" (from an ancient

cross that once crowned the summit), and Bwlch-pawl, the "Pass of Paulinus," by Gyrn, the "White" or "Rocky hill," passes here on its way northwards. Caer-gai, hard by, is an old Roman station, with a still well-preserved fosse and vallum, round which several interesting finds of coins and pottery have from time to time been made. A stone altar, discovered in 1885, bearing the mutilated inscription "Julius Gaveronis Filius . . . Fecit Miles Cohortis Nerviorum," was presented by Sir Watkin Wynn to the Chester Archæological Museum. The cohort of Nervii was in Britain A.D. 105. Who Caius was, from whom the place took its name, is not clear, but according to Camden, "the Britons ascribe it to Gai, or Timon, the foster father of King Arthur," and this is still the popular derivation in the neighbourhood. Gai was Cai-hir, or Cai the tall, and from Cader Idris, "Arthur's Seat," to a small cottage at the foot of Aran known as Llys Arthur, or "Arthur's Court," and Tyddyn Llywarch, or "Llywarch's Tenement," the district is rich in associations of the days of the Round Table. Spenser, in the *Faery Queen*, says:—

"Unto old Timon he me brought to live,
 In warlike feats the expertest man alive,
 And is the wisest now on earth, I ween ;
 His dwelling is low in valley green,
 Under the foot of Rawran¹ mossie hore,
 From whence the river Dee as silver chain
 His tumbling billows roll with gentle rore ;
 Here all his days he trained me up in virtuous lore."

Cairgai now forms part of the Glan Llyn estate, but was for many centuries the residence of the ancient family of Fynchan, the Anglicised form of which is Vaughan, a family celebrated alike for its poets and its soldiers. In 1645 the mansion was burnt to the ground by the republicans, and the present house was built soon after.²

¹ Yr-Aran.

² For much of the above information I am indebted to *A Short History of the Parish of Llanuwchllyn*, by the Rev. William Hughes, vicar. An interesting brochure already referred to, in which the reader will find much topographical detail, and to which I beg here to make my acknowledgments for etymological matter occasionally made use of in other chapters.

Over the marshy ground on "The Lordship" above, numbers of Curlews and Plovers were flying, and many Snipe drumming. The latter is variously called *Ysniten*, *Giach*, *Myniar*, or *Ysnid*, and is also known from its peculiar drumming as *Nyddwr*, or "Spinner." By the superstitious (and there are still many such hereabouts), it is greatly disliked, being looked upon as the voice of death, or of an angel coming for the soul of one about to die. This recalls very much the description of those writers who have likened the noise made by the Snipe to "the wail of a lost spirit," people who, as Professor Newton used sarcastically to remark, "were presumably well acquainted with such sounds," but who may have taken their simile from the old superstition.

Since the time when Meves¹ first propounded the theory that the drumming, or whinnying, of the Snipe was produced by the stiff outer feathers of the tail, which is rigidly spread out when the sound is made, much discussion has taken place on the subject, some people supporting Meves' views, others as strongly disagreeing with them. So recently as January 1907, Mr P. H. Bahr, in a paper read before the Zoological Society of London, explained very fully his own experiments made with the tail feathers, which led him entirely to agree with the conclusions arrived at by the Swedish naturalist. But, maugre such opinions, and the ingenuity displayed in the arrangement of the tail feathers on wood or wire, in order, by their rapid vibration in the air, to produce a sound approximating the drumming of the Snipe, I cannot think that the arguments are conclusive, or that many people who have watched the bird drumming overhead will be convinced by them. It must be admitted by everyone who has carefully watched a Snipe drumming, that during the steep descent through the air, at the moment when the drumming is produced, the wings are in rapid and powerful motion, and it seems to the writer quite incompatible with reason that some sound should not result therefrom, and that a more powerful one than any

¹ In a paper published in Sweden in 1856, a translation of which appeared in the *Proc. Zool. Soc.* for 1858, p. 202.

that can emanate from the vibration of the comparatively unimportant tail feathers. If that be conceded, how comes it that the lesser sound reaches our ears, while the greater does not? But there seems to be the further objection to the tail-feather theory, that while the drumming of a Snipe is distinctly audible at a considerable distance, say a quarter of a mile away at least, can any sound be produced, by mechanical means, with the tail, that will carry half that distance?

Nor is that all that can be said on the subject. The experimenters have failed, we are told, after repeated trials, to produce the drumming sound by vibrating the wings artificially; but is that to be wondered at? The musical sounds made by the Lapwing on his love-flights are quite as characteristic of that bird as is the drumming of the Snipe; so, too, are the various "whistles" produced by Wild Duck, Golden-eye, or Shovelers, upon the wing. Has it ever been questioned that all these sounds (there are of course a large number of others that might be mentioned) are the result of wing action, or are they capable of anything approaching exact mechanical imitation? That the tail of the Snipe, which, together with the feet, acts as the rudder during flight, may produce some sound during the time of drumming is quite likely, but it must be remembered that it is preceded by the greater bulk of the body through the air, and thus some portion of its vibrating, sound-producing, power must be lost. And that, in any event, it is capable of making any sound that would exceed that made by the wings, is a proposition from which the writer must entirely dissent.

Many Snipe breed on the moors round about, and, towards the end of August, these collect about the fields and marshy land at the head of the lake. At that season I have frequently flushed wisps of from half a dozen to more than double that number, from the side of the streams, and have seen more than thirty or forty on the wing together. The majority of these are young birds, as evidenced by their darker colour, and undeveloped voices, the familiar *scrape*, *scrape* being represented by only a low,

hoarse note, or the birds going off without any cry at all. Their stay here was only for a week or two, and each year they departed suddenly, and evidently in a body, early in September, after which scarcely one was visible until the following spring. The Jack Snipe, *Giach fach*, seldom visits Llanuwchllyn. I only heard of one or two being seen, always in the depth of winter, and one of the only two which came under my personal observation was noticed to run under a heap of railway sleepers, lying near the station, when the ground was covered with deep snow, accompanied by a keen frost, on 28th December. In order to make sure of its identity, it was flushed from this retreat, which it refused to leave without some persuasion, and then it only flew a short distance before pitching again at the edge of the platform.

But after this rather long digression upon Snipe, we must once more "take the road" for Arenig. The village, straggling over both banks of the Llafar, in the valley below us, is Parc, a sequestered spot, far from the beaten track. Some distance above this, a curious instance occurred of the manner in which sudden changes in the local landscape may sometimes be effected. The stream, at the place in question, had eaten its course into a mound of clay and stones of morainic origin, until a naked bank of some fifty feet in height had been formed on its western shore. The ground at the top of the bank was clothed in places with growths of alder, hazel, and ash, many of the trees decayed and gnarled, and of uncertain age. On the opposite side of the stream was a flattish expanse of pasture, overgrowing a deposit of water-arranged gravel and soil, resting upon fixed rock, and clear of trees over a considerable area. Quite recently, an extensive land-slide had carried a mass of many tons of soil, stones, and trees, from the top of the bank, and, shooting it right across the stream, had left a miniature "moraine heap," resting "unconformably" on a stratified base, on the surface of the opposite field. The mound was covered with grass, ferns, and bushes, several of the latter being quite respectable trees, and standing almost as upright and uninjured as though they had grown

there. In fact, a tree-clad mound had suddenly appeared on what was but yesterday a comparatively flat and bare spit of land; and before the growth of summer was over, all external trace of its origin would probably have been covered up.

A little below Parc, by the side of the road leading down the valley, are two large Ash trees with particularly fine, pendulous branches, though the trunks are upright and of considerable height. The trees are old, and must, I should think, have been growing where they stand before the discovery of the alleged parent of all our cultivated weeping ashes,¹ and, on that account, are worthy of notice, irrespective of their attractive habit.

Maesmathew and Cwmttylo, "the Vale of the fair daughters," is the last habitation on this side of the mountain, at the present day, though traces of former dwellings can be made out on some of the higher ridges. Fragments of rock lie thickly scattered round, one huge stone in the middle of a hay field being specially pointed out to me as traditionally believed to have been transported to its present position by a flood, perhaps *Y lli mawr*, or "the great flood," which resulted from a thunder storm on 20th June, 1781. There are many stones in the neighbourhood, round which similar traditions cling, Maen hirion, "tall stones," and the Maen llwid, or "grey stone," on the lower slope of Rallt-llwyd, for example. Some of them are, with livelier imagination, attributed to the handiwork of giants, who had their abode amongst the mountains in former days; or to the visits of Cythrawl or Brudiwr, a kind of wizards, or demons, of which most hill countries have usually been prolific. Some relics of Roman occupation have from time to time been discovered here. Across a mile of intervening bog, to our left, stands Bryn-llech, "the Slate hill," to which one of the fair daughters had lately been romantically transported by an octogenarian beau.

Veins of white quartz, some of them containing very fair

¹ The first Weeping Ash is said to have been discovered in Cambridge-shire in the latter part of the eighteenth century.



MISSEL THRUSH.

crystals, vary the monotony of the grey rock that crops up with ever increasing frequency as the mountain is ascended; but the long ranges of cliff are singularly devoid of bird life. Upon the last of them before the summit is reached, a Missel Thrush, *Tresglen y crawl*, or *Pen y llwn*, "Master of the copse," had built her nest, on a ledge, at the foot of a rock on which a Raven might more reasonably have been expected. I saw the recently fledged thrushes flitting about the crag in May, a curious site in which to find such birds, probably a mile beyond the nearest trees.

The Missel Thrush is numerous in the valley during summer, building in the gardens in the village, as well as in many of the wooded dingles on the lower hills; but is almost absent in winter, its numbers probably then going to swell those flocks so often met with, at that season, in England. It returns to Llanuwchllyn early in the spring, adding its boisterous whistle to the morning chorus about the beginning of March, a week or two after the Song Thrush, *Tresglen*, or *Bronfraith*, has begun singing, and shortly before the Blackbird, *Mawyalchen*, or *Aderyn du*, has started. The Missel Thrush delights to sing from the topmost branches of a tree, and, like the Blackbird, he frequently begins to pipe before reaching his post. The Blackbird, also, as frequently continues his song, for a short time, after he has left his perch, but the common Thrush I have never heard attempt to sing upon the wing. Of the three, the vocal efforts of the Blackbird are decidedly the most finished production, and from the subdued tones in which they are often uttered, the performer seems to be quite well aware of the fact, fearing not but that his melody will arrest the ear, and tempt the passer-by to stay and listen. In addition to his better known whistle, the Blackbird has also a variety of sweet warbling notes, recalling part of the Dipper's song, but given forth in so low a strain as scarcely to be audible unless he is very near. I have sometimes listened to a Blackbird singing continuously in this subdued voice for a minute or two at a time; and then, with momentary pauses, perhaps for breath, the song has been pursued for ten minutes. No

bird music is sweeter than the Merle's full note, which, as Grahame says,

“ Melliferous, rich, deep-toned, fills all the vale,
And charms the ravished ear.”

The writer will never forget a good old North-country dominie who loved it so that the only time he was ever known to accept a boy's excuses for being late for morning school, was once, when the happy thought struck the culprit to plead that he “ had lingered by the bush just to hear the Blackie singing,” and escaped without punishment ; though, boy-like, he afterwards boasted to his companions that it was to rob the nest he had tarried !

Skelton in his *Philip Sparrow* well distinguished between the songs of the Missel Thrush and Song Thrush when he wrote :—

“ The threstill with her warblynge,
The mavis with her whistell.”

But Mavis, though commonly applied to both birds in North Britain, is most usually given to the smaller species, “ Big Mavis ” denoting the Missel Thrush. In French the name is *Mauvis*, in Spanish *Malvis*. *Throstle* is Anglo-Saxon, and is still in common use in many parts. In Germany we have *Drossel*. Another Anglo-Saxon name, *Thryscce*, almost exactly represents the pronunciation of Thrush in parts of the West of England, and not inaptly in Wales also.

Like all its allies, the Thrush is a notorious eater of small fruits, and is, on that account, generally disliked by the gardener, regardless of the fact that for more than half of the year its food consists almost entirely of worms, slugs, snails, and other creatures that, collectively, do him infinitely more harm. In fact, for about nine months out of the twelve, the Thrush does nothing but good, and even in summer is only a partial thief, for it has been said that if a ripe strawberry and a snail be placed before a hungry Thrush at any time, it will be the latter that is taken first. To all who grow no small fruits, the bird is nothing but

a friend, without a single bad trait in his character, and as such is deserving our protection, quite irrespective of the debt we owe him for his song in spring. How gratefully that song falls upon human ears, poets of all ages have never ceased to tell us ; but how much sweeter must it sound to the attuned ears of his mate ! Macgillivray has thus translated its language :—

“ Dear, dear, dear,
Is the rocky glen ;
Far away, far away, far away,
The haunts of men.
Here shall we dwell in love,
With the lark and the dove,
Cuckoo and corn-rail ;
Feast on the banded snail,
Worm and gilded fly,
Drink of the crystal rill,
Winding adown the hill,
Never to dry.
With glee, with glee, with glee,
Cheer up, cheer up, cheer up, here .
Nothing to harm us ; then sing merrily,
Sing to the loved ones whose nest is near,
Qui, qui, qui, kweeu, quip,
Tiurru, tiurru, chipiwi,
Too-tee, too-tee, chiu, choo,
Chirri, chirri, chooce,
Quiu, qui, qui ! ”

Let us, then, not grudge the minstrel the price of his hire, nor blame him because he fails to recognise that the table spread by Dame Nature is replenished with the kindly fruits of the earth for us but not for him. Instinct did not include that lesson in his curriculum, and, if we would teach it now, let us do so in reason and with mercy. A few yards of netting will protect our berries, and warn the Thrush, and his cousin the Blackbird, that their presence is unwelcome ; but he would be considered a harsh judge who would mete out death as a punishment for ignorance.

Most of the Song Thrushes, like their larger relatives,

leave the neighbourhood of Llanuwchllyn in autumn, and so, too, do the majority of the young Blackbirds. It may be of interest, in connection with the migratory movements of the latter, to mention that, on 2nd March 1907, an old male, in full black plumage and with a particularly yellow bill, was seen amongst the rocks on the top of Aran, where there are certainly no resident Blackbirds. His bill was so conspicuous as to attract the eye even while he was upon the wing, and to mark him as either an exceptionally well-coloured bird, or a representative of some yellower-billed race.

Just under the final climb to the summit of Arenig, there is some wet ground, and a tiny lakelet of bright pellucid water, fed by springs, and forming the head of one branch of the burn that, by-and-by, finds its way down past Cwmtulo. In dry weather it is little more than

“Just a bonny wee well, on the side of the brae,
Where the sheep come to drink in the heat of the day,
And the wild moorland birds dip their nebs and take wing,
And the titlark may bathe ere he rises to sing.”

To-day the pool is of greater dimensions, and much of the surrounding ground almost under water, owing to the recent snows and thaws. Both here and in some of the peaty pools, on the top of the highest ridge, Frogs are numerous, and engaged in spawning; they also abound in similar pools near the top of Aran, and on all the other mountains I visited at this season. They emerge from their winter retreats, wherever these may be, and seek the pools directly the snow has gone, and there is frequently ice on the water they inhabit, covering their eggs, apparently without ill effect. One can hardly help wondering that such creatures should be found in such elevated spots, and often under such inclement conditions. They seemed to be brighter in appearance, in those upland stations, with more green in the yellow of their colouring than their lowland relatives, and to have more swollen forearms. In one place I noticed a number of their half-devoured remains round the abode of a Stoat amongst the rocks.

In the same pools, Newts also occur, though they are far less numerous than the frogs; on the mountains, all those seen were, appropriately enough, of the Alpine, or Palmated species (*Molge palmata*). In the valley, and on some of the lower bogs, the Common Newt (*M. vulgaris*) occurs, though not apparently plentiful anywhere. I saw a few now and again round Llanuwchllyn, and unearthed one, from beneath a stone, at a considerable elevation above Llan-y-Mawddy. The Crested Newt (*M. cristata*) was not noticed in the Dee valley, but it is found near Borth, and may easily have been overlooked here, as I never particularly looked for it. Newts generally are known to residents as *Genew-goeg*, or "The open-mouthed," and are almost invariably regarded as being venomous, but so, too, very often, are lizards, and even frogs and toads. A trout caught on the Lliw had a partly digested newt in his maw, showing what an omnivorous feeder *Salmo fario* is. One I killed in Scotland many years ago disgorged a recently swallowed and not long hatched bird, most probably a young sparrow.

Unlike frog spawn, the eggs of Newts are deposited singly, each one being carefully rolled in a snug nest of its own in the leaf of some aquatic plant. Where it occurs, I have noticed that the long floating leaves of *Poa fluitans* are especially favoured by the Alpine newt, and numbers of their eggs must thus be devoured by cattle, which are very fond of licking this sweet grass from the water. In Merionethshire, sheep crop it just as cattle do in other districts, and I have often seen them here standing belly-deep in the pools nibbling up all the fronds within reach. The sheep in these parts are, in fact, much more aquatic in their habits than I have ever noticed to be the case elsewhere. They wade through all the streams quite freely, not even hesitating to swim if the water happens to be deep and they particularly wish to reach the other side, or some island that looks temptingly green, and the hardy little lambs very soon learn to follow their mothers in like manner. I one day saw a lamb carried off its feet in attempting to follow its mother through a rapid on the

Little Dee where the current was too strong for it. It was rolled over several times before being swept into the pool below, but ere I could hasten to its assistance, it had recovered itself and got to land again. As it chanced, however, the landing had been effected on the same side as that from which it had started; and the little creature, more alarmed at the approach of its would-be rescuer than at its near escape from drowning, fearlessly dashed into the stream again, at the lower end of the pool, and this time succeeded in crossing in safety, and was soon scampering off with its dam as if nothing unusual had happened.

That pretty little mountain moth, Haworth's minor (*Celæna haworthii*) is abundant all over these moors, and, having seen it on Arenig during the previous autumn, I took the opportunity to-day of looking for its larvæ. Cotton Grass (*Eriophorum vaginatum*), its food plant, grows in abundance everywhere, but here most of the tufts are surrounded by water an inch or two deep, and, until the last week or two, must have been buried under snow, and, as it melted, pressed down by its weight so as to be actually under water. Notwithstanding these adverse conditions, however, the tiny caterpillars were active and vigorous in the stems of the grass, living almost, if not quite, a sub-aqueous life, and appearing to revel in it. Numbers of these, also, must be eaten by sheep, which are particularly partial to the Cotton Grass in spring, cropping the stems, in which the larvæ live, close down to the ground, or even raking off the soil to follow it below. In September, when the moths were swarming, I noticed a female laying her eggs on a flowering stem of *Poa fluitans* growing in a pool a foot deep, so that I conclude the larvæ may also live in the stems of that grass, though in winter they, or the eggs, must be entirely under water. Where the caterpillars pupate, in situations of this kind, is something of a puzzle. Many of the tufts of Cotton Grass, on which they feed, are growing in places that are hardly ever dry, and are liable to be submerged by every hour or two's rain, so that, unless we are to suppose that all the larvæ reared in such spots are destined to perish, we must conclude that the pupæ are not inconvenienced by

water. In Scotland I have dug up the pupæ from the comparatively dry peat (often it is as dry as tinder at the season) round the tops of the pits from which peat has been cut for fuel, so that, when it can secure a dry resting place, the caterpillar would seem to prefer it, but in hundreds of cases no such comfortable quarters can be forthcoming. Somewhat analogous cases occur with some of the larger moths, caterpillars of Puss or Hawk Moths being not uncommonly found on slender willow stems growing in water, where it is impossible for them ever to spin up, or turn to chrysalides, in a normal way. I suppose that many such creatures must be foredoomed to destruction; but finding their retreat cut off, they may drop into the water, trusting to chance to being carried ashore before they drown, and in that way a remnant of them may escape. With *Celœna*, however, I think the case must be different, and probably the hundreds of larvæ that cannot find a dry place in which to undergo their metamorphosis, complete their change in what, at best, must be a damp bed. The moths which occur here do not vary much from type, but in all of them the white orbicular spot is conspicuous, and the white nervures perhaps rather more pronounced than is often the case elsewhere. At this Arenig lakelet, any number of them might have been collected on an August afternoon, as they settled on the flowering heads of *Poa fluitans* and other grasses.

Another of the Minors, which I have little doubt occurs at Llanuwchllyn, is *Miana captiuncula*, usually considered rather a local species. When examining Carices I found their stems tunnelled in many places, not only *C. glauca*, but also *C. flava*, by a small lepidopterous caterpillar which must, I think, have been this species. Unfortunately, I did not pay much attention to them at the time, and none were reared; but anyone chancing to read these notes, who is interested in the local entomology, would, I have little doubt, be able to establish the record without much trouble. Some of the mined carices were gathered on the moors along the railway side, west of the village, others on the slopes of the hill below Llyn Lliwbran.

Amongst other moths noticed, were single specimens of *Plusia festuæ*, *Acronycta menyanthidis*, and *Agrotis ashworthii*, the latter from the hill west of Drws-y-nant. Caterpillars of Poplar, and Eyed Hawks, Drinkers, Oak-Eggers, and Puss Moths, were frequent; those of the Kitten (*Dicranura furcula*), *Notodonta camelina*, *N. dictæa*, *N. dromedarius*, and *N. ziczac*, rather scarce, but generally to be found on the stunted sallow and birch bushes, if carefully looked for. Of these the Coxcomb, and Iron Prominents, generally prefer oak, and alder, respectively; but in Merionethshire, both happened to be most often found on birch. The Ziczac caterpillars were all of the pale form, often almost white on the upper surface, sometimes with dashes of vivid yellow on the lateral region. They are then amongst the most attractive of larvæ, and as most of my caterpillar-hunting was done for the benefit of youthful entomologists, they were always enthusiastically welcomed. A single larva of the Nut-tree Tussock (*Demas coryli*) was also a special prize; the handsome yellow and brown striped *Hadena pisi* was numerous on sallow, scabious, and other low plants.

Of moths attracted to the light of my window, one of the most obtrusive was the Old Lady (*Mania maura*), of which three or four would sometimes enter the room together. By the side of the river it was numerous, in the evenings, some very pretty, distinctly banded, varieties being amongst those caught. *Euplexia lucipara*, *Phlogophora meticulosa*, and *Gonoptera libatrix*, also came frequently to the light. *Agrotis lucernea* was numerous on Aran, commonly flying in the afternoon sun, though it is chiefly a night insect. I saw several newly emerged specimens, at the end of June, on tufts of viviparous *Festuca ovina* growing on the cliffs, near the top of the hill. Elsewhere I have taken the larvæ at the roots of this grass, in similar situations, on the face of igneous crags; it being easy to collect a number of them, in such places, by simply pulling up and examining prominent, and isolated, tufts of the plant. They are full fed towards the end of April, and later the chrysalides may be found spun up in the same places, or amongst lichen in convenient niches of the rock. Or, if the grass be growing among

débris at the foot of the cliff, the pupæ are often spun up underneath loose stones. If *Sedum acre* grows in the locality, it is a favourite food plant. In Wales, I believe it also eats *Sedum anglicum*, which is the more abundant Stonecrop there.

Of Geometers, notes were made of the following, in addition to some that have been already mentioned, but here again, any collecting done was for young people, and only of the most casual character. One or two *Selenia illunaria*, that came to my window in August and September, were such small specimens, and so different from the type, that it was at first thought they must belong to some other species. Except at the tip, the wings were scarcely notched at all, and in colour they were very pale, a male being almost as yellow as an ordinary female. *Larentia cæsiata* was abundant; of *L. ruficinctata* (now included as a variety of *L. flavicinctata*) several were taken; *L. multistrigaria* and *L. olivata*; *Hybernia rupicaprararia*, *H. leucophearria*, and *Anisopteryx æscularia*, were all rather common. *Hypsipetes ruberata*, frequent, the larvæ and pupæ easily gathered from beneath loose pieces of bark on sallow bushes, in spring. A plan which, if more frequently resorted to, would probably lead to the discovery of this usually considered local insect in many fresh localities, as by this means I have found it commonly in several districts in which it had hitherto been looked upon as rare, or was unknown. *H. impluviata* occurs in a similar way on alder trees. *Melanippe tristata*, *M. galiata*, *Melanthia rubiginata*, *M. ocellata*, *Anticlea derivata*, *Coremia propugnata*, *C. munitata*, *C. ferrugata*, *C. unidentaria*, *Scotosia dubitata*, *Cidaria miata*, *C. corylata*, *C. testata*, *C. dotata*, *Pelurga comitata*, and *Anaitis plagiata*, were all more or less frequently seen.

Euclidia mi was common, *E. glyphica* less so. *Phytometra aenea* was only once identified, but is, no doubt, not rare. Several Skippers were numerous down the Drws-y-nant road, including *Thanaos tages*; and Green Foresters, Orange Tips, Green Hair-streaks, Small Pearl-bordered, and High Brown Fritillaries, were amongst the most conspicuous of the day fliers. Peacock butterflies were not numerous, but were

sometimes met with far out upon the hills, whither perhaps their strength of wing had carried them from lower latitudes, but where little colonies of the larvæ are met with on unexpected nettle clumps, that often survive as almost the only mark of the site of a former human habitation.

Dragon-flies are numerous at some of the pools on the mountains in summer, as well as on many of the moorland bogs : one of the commonest being the pretty, brown-hued, *Libellula quadri-maculata*, which in June I watched consummating its marriages in the air, the sexes chasing one another in rapid flight over the bog holes. The female also lays her eggs upon the wing, gliding slowly over the surface of the pool, and at each momentary pause dropping a single egg into the water. The full, black markings, and rich brown shading on the wings of the specimens breeding here, is in marked contrast to the poor colouring displayed by some of those I have taken upon the east coast of England, where, apparently, they sometimes arrive in migratory bands. Indeed, I do not think that I have anywhere seen the deep chestnut hue of those peat-hole-frequenting insects equalled.

CHAPTER XV

Liverpool's water supply—Lake Vyrnwy—Its fishing—Tasteful planting—
Brambles—Vitality of seeds—Barrows—May-flies—Creeper fishing—
Black-game.

How far Liverpool may be satisfied with its water-supply is not a question that concerns us here ; but there can be no two opinions about the added beauty and attractiveness which the Montgomeryshire mountains have received from the formation of the huge reservoir that contributes this supply, and is known far and near as Lake Vyrnwy. It collects the upper waters of the river of that name, and, being contained by a dam of solid masonry, nearly 400 yards in length, winds up a most picturesque valley for a distance of about $4\frac{3}{4}$ miles : in width the lake does not generally much exceed half a mile. It forms the second largest sheet of fresh water in Wales, covering some 1120 acres. The dam rises to a height of 84 feet above the bed of the stream, the foundations having been carried down nearly as deep again. It is built of the Silurian rock of the district, obtained from a quarry close at hand, laid in beds of concrete, and faced with immense blocks of stone, each of many tons in weight. Indeed, it is said that the stones averaged over four tons apiece, the largest weighing more than ten tons. A wide carriage road is carried along the top of the dam on a viaduct of thirty-one arches, through which pours the superfluous water when the lake is full. In the pool below the fall thus formed, I saw some large Chub rising one hot September afternoon. The Chub is an abundant and little appreciated fish in the river Vyrnwy, and seems to be on the increase in the lake, notwithstanding the netting resorted to in order to hold it in check. I was rather surprised to find that it was known to some of the

residents, by its Dumfriesshire title of "Skelly," which is probably a corruption of "scaly," from the coarse appearance of the fish by comparison with the more familiar trout. Its Cymric name is *Cochgangen*, or sometimes *Penci*.

The roadway over the dam is continued right round the lake, forming a nice drive of some twelve or fourteen miles, over well laid macadam, and opening out some fine scenic effects where it winds through the plantations with which the hillsides have been tastefully laid out, where natural "hanging woods" of birch, oak, and hazel, did not already exist. Considerable judgment has been displayed in the planting, larch, spruce, and silver firs having been freely used, while the pines are varied with plenty of *P. strobus*, *P. larico*, *P. austriaca*, *P. excelsa*, and others. Douglasses have also been favoured, and are so far doing well, and here and there are nice specimens of *Picea nobilis*, *P. nordmanniana*, etc., varied with clumps of rhododendrons, azalias, purple beeches, cut-leaved alders, laburnums, and other flowering trees, and shrubs. Nor in enumerating these introductions, must the equal attractions of the native brambles, and dewberries, be lost sight of. They creep and twine over many a rocky knoll, and extract from what would otherwise be barren ground, a fullness of delicious fruit for which many a weary traveller, besides the writer, has, no doubt, offered thanks to the all-bountiful Giver. Nor is it from material reasons, only, that the *Rubus* family claim our gratitude. Was it not the great Chaucer who sang—

"Sweet as is the bramble flour
That bereth the red hepe."

And do not the blooms offer an unfailing attraction to the superbly silvered Fritillaries, and a host of other insects? Innumerable bees resort to them, the summer long, and the dainty Hair Streaks, and their more gaily painted relatives, the Small Copper, and the blue butterflies, know no more favourite flower. Lizards, and many other lowly creatures, find a secure refuge beneath the tangled thicket of their branches, whilst the same afford safest retreat, and nesting sites, to Whitethroats, Garden Warblers, and several

others of our sweetest songsters : and when October—the *Wyn Monath*, or *Winter Tylleth*, of our Saxon ancestors—comes round again, what foliage is there that can lighten up the brake like a long trail of bramble, with its russet-tinted and golden leaves ?

This is, perhaps, scarcely the place for a lengthy dissertation on the *pros* and *cons* of the vexed question of how long buried seeds, or mummy wheat, can retain their vitality, and an author must not be held responsible for the authenticity of every tale he repeats ; but if proof were wanting, as assuredly it can hardly be, that the tastes of early man differed but little, if at all, from our own, it would seem to be forthcoming in an extract from the *Gardener's Chronicle*, of 25th September 1852, now before me. It is therein stated that “a mass of seeds having been taken from the stomach of the body of an early Briton disinterred from a tumulus in Dorsetshire, and having been sown, they germinated, and produced a Rasp” ! It may just be added that it has been my fortune to witness the opening up of a goodly number of British Barrows, in several widely separated districts, but in no case have the enclosed cists revealed more than fragments of wasted bones, with sometimes the remains of “urns,” weapons, or trinkets, which the friends of the deceased had intended for his, or her, use in the next world. At the most, all that remained of the more perishable part of the human body was a mere handful of discoloured dust, or a dark stain only upon the white sand at the bottom of the tomb, to mark where it had been laid ; all else having, long ages ago, entirely disappeared. But what of that ? He must, after all, be accounted something of a dullard who would be for ever seeking to disprove, by the negative evidence of his own limited experience, the positive assertions of others, and it is enough that the narrative has conjured up a picture of the ancient Welshman regaling himself on the produce of this same bare bryn,¹ and regarding with jealous eyes the Roman, or Saxon, intruder on his black-berrying grounds, just as his descendants—yonder children, with their tin

¹ A small hill.

gathering cans, and purple-stained aprons—are looking askance upon our presence now.

But we are wandering away from the matter in hand. Beneath the waters of the present lake lies buried the site of an ancient village, the houses, churchyard, and other traces of which were bodily removed when the reservoir was formed, and the building now utilised as a boathouse on the northern shore is said to be what remains of an erstwhile chapel. The houses now nestling on the south bank of the Vyrnwy, near the base of the huge dam, represent the moved village, on its new site. On an eminence, near the other end of the embankment, stands a palatial hotel, for the convenience of anglers, and others, visiting the district, and largely patronised by the merchant-princes of Cottonopolis. The hotel was undergoing extensive alterations at the date of my last visit, it having been found inadequate to meet the demands made upon it during summer. The lake is well stocked with common and rainbow trout, which afford diversion to numerous visitors. I had the curiosity to run up the catches entered in the *Anglers Book* at the hotel, and found that, over a period of eleven years, ending with 1904, the number of trout killed annually had been about 3000, averaging a little over 10 oz. apiece. The period includes some lean years, and the fish appear to be increasing in size as well as numbers; but, even so, the lake would scarcely seem to be at its utmost capability. Probably, as in most waters at a highish altitude, the dearth of food is most felt in the early spring months, when the large fish are recovering from the exhaustion of spawning, and when they can least afford to go hungry. In summer there is an abundance of insect-food; but moor-land streams, hurrying over cold, bare rock, and comparatively poor soil, can never compete in the way of raising large fish with those draining fat, meadow land, in a lower country. As the trees grow up, and as other vegetation increases round its margins, the lake itself ought steadily to improve as a hatching ground for all kinds of insect, and crustacean life, the increase of which will, no doubt, be reflected in the improving size and condition of the trout, and meanwhile a



ON OUTLOOK FOR MAY-FLY (CHAFFINCH).



WATER RAIL.

good deal has been done to assist Nature, by the authorities whose interest lies in seeing that the fishing is improved. That their efforts will be crowned by the highest attainable success must be the wish of everyone who has visited Vyrnwy, and has had eyes to see, and appreciate, the trouble taken to make the place as attractive as possible.

The Dark May-fly, or Mackerel (*Ephemera danica*), occurs on the Vyrnwy and some of the neighbouring streams, and has found its way into the lake, but, as on many other waters, the trout there show no particular liking for it. It is sometimes abundant on Llyn Tegid, and its tributaries, as is, also, the closely allied *E. vulgata*, which has, perhaps, most claim to be regarded as *the* May fly, or Green Drake ; but there, too, neither species possesses that attractive power over large fish which English anglers are disposed to expect of them. I have seen them out in hundreds, from about the second week in June onwards, and nothing but an occasional small trout rising at them, and have often had similar experience of them in other mountain streams. But although trout refuse to recognise their charms, birds do not. On Bala Lake, scores of Black-headed Gulls may sometimes be seen greedily hawking May-flies, while Swifts, Swallows, and other small birds, are not slow in showing their appreciation of such delicate mouthfuls. One day I saw a Starling carry upwards of a dozen to her nest in quick succession, and she was still returning for more when I left. Chaffinches, also, are particularly fond of them, and very adroit at taking them upon the wing. A few examples of *E. danica* appeared about Llanuwchllyn towards the end of May, but it was most abundant quite a month later : the earliest date on which *E. vulgata* was noticed being June 8th.

The real "May-fly" of these parts, as indeed of most streams in which it occurs, is, however, the Stone-fly (*Perla bicaudata*), which comes out in April, or sometimes in March, and is often abundant in May, and when it is upon the water, all the best trout are on the feed. Properly fished with, there is no more deadly bait than a natural Stone-fly, but an imitation, at all satisfactory, is difficult to make. "The Creeper" of Scotch streams is the full-grown larva

of this insect ; and whether the larva, or the perfect insect, is used upon the hook, matters but little, both being fished with in the same manner, and both greedily taken by the trout. The custom of many anglers is to impale two insects (or creepers) together upon the line, using a double hook, or one tied on a little above the other ; but, personally, I have always preferred a single fly on a single hook ; and if a short bristle is tied on, at the head of the latter, it effectually retains the fly in position, and covers the hook. Such an addition, it may be remarked, is also a great advantage when a single hook is used for worm fishing. The creeper requires to be fished like up-stream worm, a short line being all that can be used owing to the tenderness of the bait, and broken water at the heads of pools, or behind large stones, will generally be found the most certain cast.

When Lake Vyrnwy was made, the Corporation purchased the whole water-shed, and included in the property are some excellent grouse moors, the sport obtained at some of the butts being, to some extent, gaugeable by the large number of empty cartridge cases strewn around them, when I walked across the moors in September. In addition to some Pheasants visible around the woods, Black-game have also been introduced, and are the envy of many of the Scotch keepers on adjoining moors. On many of these properties, one can hardly help being struck by the absence of Black-game, for some of the partially wooded, and brake-grown vales, look like ideal ground for them, and they ought certainly to thrive as well, or better, here than the pheasants, and partridges, on which so much care is often lavished. During my stay in the Dee valley, only one solitary Greyhen came under my personal notice (this was in the birch wood near Craig-y-tan), though I was told that there were, or had been, a few somewhere in the neighbourhood of Trawsfynydd, and of an old Black-cock that had, for two or three years, made his home on the mountains above Drws-y-nant. With a modicum of fair-play at starting, I feel sure they would do well round Llanuwchllyn, and as an addition to the game-birds of a moorland country, Black-game come only second to the Red Grouse.

CHAPTER XVI

Lake Vyrnwy continued—Cattle—Rhiw Argor—Giant's stairway—Mountain berries—Hag of the midnight mist—Bogs—Polecats—Highland and Welsh keepers—Poultry thieves—Taffy was a Welshman—Cock-crowing—Dew—Glow-worms—Nightjar's song.

THE water intended for Liverpool leaves Lake Vyrnwy through the stately tower, which rises high above its surface, and stands in deep water off its northern shore. The water is filtered in the tower by an elaborate system of screens, before it is allowed to reach the pipes, through which it flows, by gravitation, to the town on the Mersey, and thus diverts from the Severn water-shed a stream of no inconsiderable dimensions. To compensate the riparian owners on the river Vyrnwy, for this extraction, the authorities are bound, under their Act of Parliament, to send down that stream, when and as required, twelve hundred million gallons of water annually, in the form of freshets, each freshet to consist of not less than forty million gallons. This, of course, is in addition to the ordinary daily outflow from the lake, which is constantly running to the river through a pipe of eighteen inches in diameter; and in addition, also, to that which is sent down every month through a thirty-inch pipe.

As though to remind us that the water-shed has been crossed, and that we are now looking down towards the English border, the majority of the cows, and cattle, hereabouts, carry the white faces that are so characteristic of Hereford and the Western counties of England. In the vales of Merionethshire, the native black cattle hold almost undisputed sway, and for adaptability to a semi-mountain life they would be hard indeed to beat by any other breed.

The upper end of Lake Vyrnwy is dominated by a series of bold and most picturesque bluffs, which at a short

distance appear, in places, almost to overhang the water. On one of these—Craig-yr-Ogo—Ravens still attempt to breed every spring, but are generally destroyed by the keepers. I saw two deserted nests in 1905, and the bodies of two of the unfortunate old birds hung suspended from a rail, in company with three poor Buzzards, at the rear of a keeper's dwelling. In the following season, I understood by the orders of the lessee of the shootings, the Buzzards were not molested, and the young from at least one nest were successfully reared.

The two principal streams which feed the lake enter here through rugged gorges in the mountain side, each forming a series of fine cascades, or *Pistylls* as they are termed. That above Rhiw Argor is particularly grand, the water tumbling under a tree-fringed cliff, over a sort of giant's stairway, each step of which is represented by a huge ledge of slaty rock. In the uppermost steps the rock has been upheaved, and lies at various angles to its original bed, and here the water often rushes over a smooth face of sharply slanting rock, twenty, thirty, or even more feet wide. Of course, to be seen at its best the stream should be in flood; but at any time it is a fitting place for contemplation on the amount of power which is daily running to waste in some of Nature's great engineering schemes. Thorns are intermixed with the alders, and oaks, on some of the lower slopes above Rhiw Argor, and, in summer, lighten up the glen with patches of white "May." Higher up, their place is taken by the hardier Mountain Ash, which, distorted and crippled by the foul storms of winter into the very forlorn hope of trees, yet manages to hang out a few garlands of snowy blossom on its more sheltered side, to be replaced, in autumn, by a scarlet bravery of berries, that supply welcome pickings to Mountain Blackbird and Missel Thrush. Grey lichens, and mosses, are rampant everywhere in the moisture-laden atmosphere, hanging in the sheltered crannies, from branch and rock, in festoons of "witches' hair" that, to the imaginative rustic, at nightfall, call up the *Gwrach-y-rhyhin*, or "hag of the midnight mist." The gnarled and twisted limbs of some of the trees are themselves suggestive enough

of apparitions from the nether world, when viewed through a darkening fog, so that we will do well to leave the gloomy glen behind us ere night descends. The way over the mountain is treacherous even in the gloaming; and sheep tracks, though generally safe to follow, when they lead in the right direction, have a disagreeable way of bifurcating at inopportune moments, just when we happen to be least certain of our ground, or of disappearing altogether where the heather is supplanted by a stretch of grassy pasture. And the bogs! He that would wander over these hills with dry feet will do well to keep to hard roads, if he can find them; for the hollows are often so wet that to cross them, dry-shod, is nearly an impossibility, even in daylight, and under other circumstances, becomes altogether hopeless. Personally, I never attempted it. Knee-boots would hardly suffice in many places, and are, of course, out of the question if a long tramp is to be undertaken with any degree of comfort. Low brogues, bored with holes along the welt, are by far the most satisfactory foot-gear. They let in the water, of course, at the first step from the path, but they let it out again as freely, and they make one quite independent of the intolerable nuisance of always having to pick one's steps.

I foregathered here with one of the clan Jones, distinguished, as usual, by the name of his residence, as "Harry Gadfa," and learned from him, that he had trapped two Polecats, about a dozen years ago, which he regarded as being almost the last of their race. This I found to be the opinion of most of the farmers, and keepers, in the district, few of them having seen a *Ffwlbart*, *Fwlpar*, or *Gwichyll*, for many years past, where twenty or thirty years ago they were abundant. In parts of South Wales, they are still pretty numerous, and they exist, also, in fair numbers, a little to the north of the Dee valley; but where keepers are active, and moors well looked after, a fall of snow is sure to betray their presence, in unaccustomed parts, and in all probability lead to their undoing. The tell-tale track catches the eye of the observant Highlander (who fills the position of gamekeeper on so many estates in Wales), and

he follows it like a Red Indian till he has found the Foumart's home, after which a trap or two easily completes the work of destruction, and "Sandy" returns one morning, triumphant, with a fine skin for a new sporran. Yet in spite of this constant vigilance, the Polecat is not so altogether extinct in Merionethshire as most of the inhabitants believe. I met with it more than once round Arenig, and in the vicinity of Trawsfynydd and Dolgelly, and in the springs of 1906 and 1907, followed its unmistakable tracks upon the snow in several places round about Llanuwchllyn. Two were seen together at Tin-y-Nant, in March 1907, and a week or two previously a very large male was trapped by the keeper at Nant Glas. The latter weighed 2 lbs. 10 oz., and measured 1 ft. 10 inches in extreme length, of which the head accounted for about 2 inches and the tail 6. Early in the following June, a female was found in the same trap.

At Plas-in-Cwm-Cynllwyd one was caught in a gin, amongst the hay, in the loft over a cow-byre standing in the fields, but on being attacked by a sheep dog, it managed to free itself and escaped. I did not hear of a single case in which a hen-roost had been raided, or other depredation committed upon the farmer, during my visit to Merionethshire, though the memory of many an old tale still survives, so that the few remaining Polecats would seem either to have developed greater circumspection in their movements, or else former stories have been much exaggerated. Assuredly it cannot be from any undue precautions taken by the farmer, that his losses in poultry, from foxes or other "vermin," are not greater than they are, for it is quite common to see whole rows of hens at roost upon a low rail, or even on top of a turf dyke, anywhere in the neighbourhood of their houses; and the only marvel is that, in a mountainous country like this, any of them survive at all. Perhaps the custom, now so often abused, of turning all the dogs out of doors at night, may have partly owed its origin to the idea of "keeping the fox from the fowls"; but be that as it may, the only serious poultry thief nowadays generally walks upon only two legs. A familiar old nursery

rhyme may suggest itself to the English reader ; but in the light of the legal paradox which declares that "the greater the truth, the greater the libel," it may not be judicious to quote it. Local opinion maintains it to be the base invention of a malicious Saxon mind ; or that the historic Taffy was a Welshman, whose failure to distinguish between his own beef and other people's was the result of contamination in profligate London, and the fable may be without significance. On his native heath the Celt is probably as honest as other people ; but as that heath does not commonly extend into the neighbouring parish, it is manifestly absurd to expect that it should reach to Ultima Thule.

In the village, the amount of cock-crowing in the early morning is often a serious nuisance. Where the poultry are all roosting out of doors, on wall-top, hedge, or stick-heap, the least noise wakes them up, and sets the clarions going, at all hours of the night. I was sometimes amused to note the reversal of the ordinary course of things in this way ; the tread of an early workman beneath my windows, though it was still quite dark, invariably having the effect of setting the cocks agoing ; the man thus serving to call the bird, not the bird the man ! In this connection rather a funny incident, which occurred here, may be related. A farmer had always made it his boast that he got up at "cock-crow," and that he had never failed to hear his self-set alarm. One morning, however, he was found still asleep by his man, though considerably after daybreak, and, still protesting that such a thing had never happened before, he hastened out of doors, only to find that his cock had been "lifted" during the night !

But to return to the Polecat. In spite of its short legs, and apparently rather clumsy body, it is surprising the extent of ground that one of these animals will cover in the course of a night, especially in the spring during the pairing season ; and I have been astonished also at the ease with which it jumps. I have known one spring, without, apparently, any great effort, a height of nearly four feet from the ground, and in tracking them in the snow, have frequently seen where a ditch, or other obstacle, has been

cleared, in a manner that could hardly have been expected. The fact is, however, that the body of a Polecat may be said to be almost a ball of muscle, and the limbs and feet are proportionately strong. I doubt whether any other animal can show a similar all-round development, and it is when handling a wild Polecat, or even a recently killed one, that one comes to recognise what an ugly customer he must be to meet with in the confined space of a burrow, and to appreciate how it is that either fox, otter, or cat, or indeed any animal, is so ready to bolt before his domesticated, and vastly deteriorated, descendant, the ferret. In a trap, a Fomart is fury personified; there is no adjective that adequately expresses the idea of rage, and ferocity, that its actions then convey; and from its thick, long hair, all "standing on end," it appears to be about twice as large and formidable than it really is.

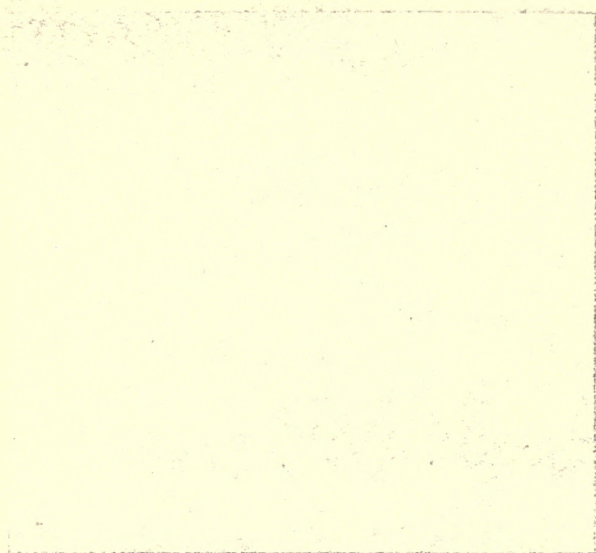
It was the introduction of the common steel trap which first sealed the fate of all such creatures as the Polecat, and has led to their disappearance over so large a portion of the British Isles; and the large influx of Scotch gamekeepers to Wales, during recent years, is fast bringing about their extirpation, in many of their last remaining strongholds. The instincts of the Welsh keeper, in the matter of "vermin," are much more sportsmanlike, and less uncompromising, than those of his northern brother. He will hunt down his enemy with a zest, with dog and gun, where a certain element of fair-play comes in, but he is either not so skilled a trapper, or else is above taking such base advantage of a foe, and will seldom pursue the game to the point of extermination. The Highlander, on the other hand, is as vindictive as the grave, and knows nothing of either reason, or mercy, so far as "vermin" are concerned. He will go miles out of his way to encompass the death of his victims, and the rarer the particular animal may chance to be, the prouder he is to nail up its poor body to his "rail." Hardly will his master's express orders to the contrary suffice to stay his hand, should either winged, or four-footed, vermin cross his path; and almost no amount of outside argument is sufficient to convince him that hawk or buzzard, polecat



FLEDGLING BUZZARD.



A POLECAT OR FWLPAR.



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or weasel, may have some compensating virtues to make up, even in part, for the toll they take of his game.

The sun had long since disappeared behind the Ddwallt ere I gained the water-shed of the Avon Fechan ("The Little Brook") and the beaten track for Llanuwchllyn once more, and the summer's night had drawn her grey mantle closely over the deep vales. The grass glittered in the starlight with "tears of Eos," fallen before their time¹ :—

"That diamond dew, so pure and clear,
It rivals all but Beauty's tear."

Nor was it only in the heavens above that stars were shining, for the Glow-worm had lighted its nuptial torch, and gleamed brightly by the wayside, especially so (as is its wont) in damp places where *Juncus acutiflorus* flourishes. From what its liking for this rush arises, I do not know, since it does not seem to feed upon it at any stage of its existence, but its partiality for sitting upon it is quite remarkable. Possibly the association may merely be a coincidence, both plant and beetle liking wet ground. The Glow-worm here referred to is, of course, *Lampyrus noctiluca*, the wingless female of which is so different from the dingy brown beetle, her partner, that she is commonly regarded (by daylight) as "a mere grub," and a distinct creature. It is abundant in Merionethshire, but so little attention is generally paid to such "small deer" there, that for the benefit of Welsh readers, it may be worth while to recall the fact that, both in its larval and mature state, this insect is not only harmless to plant life, but lives largely on snails and slugs. To that very great virtue (I write as a gardener, and feel sure that brother horticulturists will endorse the remark) I may add another, which seems to be less generally known—viz. that it also eats aphides. The phosphorescent light is chiefly given out by the adult female, presumably for the attraction of the male ; but is sometimes

¹ Eos was the dawn, in Greek Mythology, and when her son Memnon was killed, her tears are said to have fallen from the sky in the form of morning dew.

observable, to a small extent, in the sterner sex, as well, also, as in the earlier stages of existence.

When I reached the old bridge leading across the Twrch to the village—it has since been pulled down and replaced by a more trustworthy but less picturesque structure—the purring of a Nightjar, serenading his mistress from the boughs of an overhanging oak, was sounding distinctly above the murmur of the water. A note in such perfect harmony with both place and hour, that I must beg of you, gentle reader, to pause with me a moment and listen to—

THE NIGHTJAR'S SONG.

Voice of the summer night,
 Quav'ring and eerie trill,
 Born of the fading light,
 Song of the Whip-poor-will.

Dream of a twilight hour,
 Sound of a silence heard,
 Whisper of flow'r to flow'r,
 Lisp of a love-sick bird.

Whir of an arrow sped,
 Twang of a Cupid's bow,
 Lilt of a love long dead,
 Voice of the after-glow.

Quake of a loosen'd chord,
 Flutter of throbbing heart,
 Voice in the gloaming heard
 Whispering, "I come, sweetheart."

CHAPTER XVII

Highest road in Wales—Red-handed thieves of Dinas—Morning on the mountain—Deceptive distances—Geology—Querns—Shooting butts—Merlins—Birds teaching their young to fly—"The eagle suffers little birds to sing"—Stoats—Catching a weasel asleep—Vachddeiliog—Cupid's darts.

SOUTH and east of Llanuwchllyn there is a wide tract of rugged country, bounded towards the north by the railway and Bala Lake, and enclosed on the east by the tree-clad slopes of the Berwyns, rising in well-defined ridges that shut off the counties of Denbigh and Montgomery. On the west it is sharply divided from the Arans by the vale of Cwm Cynllwyd, up which winds the road for Dinas Mawddwy. Where the latter crosses Bwlch-y-groes, it is said to be the highest main-road in Wales, and its descent, by Llan-y-Mawddwy to Dinas, is through a narrow rock-girt pass, whose barren grandeur is perhaps as unequalled. It was round here that the "Red-handed Thieves of Dinas" had their headquarters, and gave the district that notoriety for robbery, and rapine, which is even yet scarcely forgotten : and traversing the pass at murk, or exploring some of its wild corries at grey dawn, as I have done, it is not difficult to conjure up, in the screech of an Owl, or the weird croak of the Raven overhead, the warning signal for bloody onslaught. To-day, however, the sun rises, in all the splendour of a June morning, on the more peaceful picture of the ewe and lamb dozing undisturbed on the mountain side, and it is only the whistle of the jealous Curlew that breaks in upon our reverie. Having made an early start, I had reached the summit of Moel-y-geifr before the sun's rays had penetrated the valleys, and in the clear, dew-laden atmosphere, the mountain tops stood out sharply defined. Wisps of white mist curled slowly up the sides of Aran, and enwreathed the triple crown of Cader Idris, dis-

closing, as they passed, those rich crimson and purple tints, harmoniously blended with the varied greens and greys, that dawn discovers upon the mountain. To the north, the more distant peaks of Snowdon were just discernible behind the barren slopes of Moel Llyfn-nant; and the long ranges of cliff, and brown scaurs, on Arenig-fawr were being gilded over with sunshine till their harsh features softened into many a winning smile.

Away in the opposite direction, the view extends right across Montgomeryshire, over a sea of billowy ridges and bosky dells, almost as far as Welshpool. Below us nestles Lake Vyrnwy, at present only visible where the light strikes it, as a silver band, round the turreted shoulder of Allt-yr-Eryodd, a name suggestive of a former eyrie of the Eagle, though the rock is now only occasionally tenanted by a Buzzard. The lake is barely half a dozen miles away, as the crow flies; but the numerous inequalities, and hidden dingles, make miles measured in that way, or on the Ordnance Map, very deceptive here, where distances can hardly be comprehended till the ground has been traversed. In one of the recesses, near by, stands a curious stone, said to mark the resting-place of a celebrated outlaw, but I was not lucky enough to find anyone who could help me to interpret its strange hieroglyphics. There are many fragmentary remains of ancient occupation, and legend, scattered over the whole of this district, but they are nearly as much entombed from outside knowledge as are the fossils sealed up in the underlying rock.

From all the valleys round about, the hills rise precipitously for several hundred feet; and any stranger, toiling up the steep ridges, must be lacking in observation if he be not struck by the energy, and perseverance, displayed in the bringing, and keeping, of such land under cultivation. Ploughing, and the carting on of manure, and removal of crops, is all extremely laborious, yet Taffy sticks gamely to his work, and richly deserves to succeed. Higher up, the sides of the hills have been bared to the bone during the ages of snow, and their nakedness has often scarcely yet been covered by the slow erosion of the rock, that has taken

place since. Scrubbed and weathered stones crop out everywhere, and in every dingle we must scramble painfully over piles of *débris*, with which the half-buried cliff is gradually completing the process of self-interment in its own ruin. Some of these heaps of stones afford admirable summer nurseries to Stoats, which are fairly numerous in spite of constant trapping, but the soil about them is mostly too thin to offer much attraction to rabbits. Most of the sides of the hills are covered with grass, scanty but sweet amongst the rocks and where the soil is dry, sometimes coarse and rushy where some dip in the ground retains the wet. In winter, however, the sheep, and cattle, eat up much of the rushes, wherever they can get at them, and crop closely the tufts of even such rank food as *Aira cæspitosa*, which is seldom relished elsewhere. The flatter uplands are chiefly covered with peat, and clothed with heather, but on the sides of many depressions in which rock has accumulated, the disintegration of the hard stone may be traced. Where rills intersect it, the peat has been broken up, and is being steadily carried away, and where it is intermixed with the crumbled stone, we see in progress the gradual formation of a richer soil. In the course of the rill, the older herbage is being supplanted by Sheep's Fescue, and *Poa annua*, the seeds of which may, originally, have found their way thither in the wool of the sheep, whose descendants now eagerly seek out the sweet grass, while their scattered droppings are constantly aiding still further to increase the fertility.

Several of the larger mounds on these hills are crowned by artificially raised cairns of stone, and in one of them I was astonished to find an excellently preserved Quern. Such vestiges of the early Britons are, of course, not infrequent in the valleys, but how an implement for the grinding of grain should have found its way up here, it is not easy to conjecture. On the low ground, I noticed Querns built into the dry-stone walls in several places, and here and there they are to be seen as ornaments at a cottage door, or in more pretentious gardens. Perhaps it may have been the custom for moving tribes to carry a mill about with them, and the stone on the hill may have been accidentally

left behind by some wandering clan, or abandoned with the heavier impedimenta on a sudden surprise ; but in any case, it lies there still, awaiting an owner, and may have occupied its present site since before the time of the Romans. The hardness of the stone may be judged from the slight amount of abrasion it has undergone in the interval, and the nature of its dressing reflects credit upon the skill of the workman, who is supposed to have been possessed of only rough tools of stone.

Much of the ground on this range of hills is drier than on the Arenig side of the lake, and grows better heather, providing, in consequence, more valuable grouse moors, and, needless to say, the bird has every attention paid to it. Ranges of shooting butts break the monotony of the heather in every direction, and nowhere, I think, have I seen butts built in such a workman-like and substantial manner. In summer their rounded walls of turf form favourite coigns of vantage to numerous Cuckoos and Pipits, and are also sometimes turned to account by a Merlin as a dinner table. I saw one in such use to-day, on the Aber Hirnant moor, and with binoculars watched a male Merlin make three or four successful sorties upon passing Oak-Egger moths. His method of sallying out from, and always returning to his perch, strikingly recalling the tactics of a Spotted Flycatcher. In capturing the moths he did not resort to stooping, as we are accustomed to see Merlins take a feathered prey, but, gliding up to the approaching quarry, he either seized it at once, with outstretched talon, or followed its twisting flight in close pursuit until he was able to do so. I did not observe that more than one foot was ever brought into use, and the captured insect was always carried back to the feeding place in the foot extended at full length beneath the tail. It is years ago since I satisfied myself that most (and probably *all*) birds hold the feet in this position, when in ordinary flight, and not doubled against the breast, as most generally represented in drawings ; and it is certain that birds of prey would always carry their booty in the like manner, were it not that it is sometimes too heavy to admit of their doing so. In the latter event, it hangs pendent

beneath them, and is never, I believe, adressed to the breast by the bending of the joint between the tibia and metatarsus. This pendent position of the carried prey is well seen in such long-limbed birds as the Sparrow-Hawk, or a Harrier. I have also seen a Peregrine Falcon pass swiftly overhead, with a grouse dangling beneath its tail. The prey is, in fact, dragged along, in just the position in which it offers least resistance to the air, and that is, after all, only the natural method of dealing with any heavy and cumbersome burden that has to be carried.

Scattered round the Merlin's butt, I afterwards found the wings of four or five Oak-Eggers, all males; one Emperor moth, also a male; and one Painted Lady butterfly. Emperors were just emerging; during the day I saw one hanging, with wings yet undried, to the tops of the heather, and another just struggling from the neck of its cocoon. On another occasion, I found the wings of an Emperor moth beside a Merlin's nest, as well as those of a large dragon-fly, probably *Æschna juncea*, or *Æ. mixta*. Elsewhere, I have noticed the short brown dragon-fly (*Libellula quadrimaculata*), that is so often met with on these moors, included in the Merlin's bill of fare, as well as a cockchafer (*Melolontha vulgaris*), and occasionally one of the larger beetles. The chief food of the Merlin upon the moors, however, is the poor little "Moss-Cheeper" or Meadow Pipit. One finds their remains more commonly at the nests than anything else, and never without a pang of regret that such a cruel fate should overtake so cheerful a little bird, that never fails to greet you with a stave of its modest song, or to accompany you, with jerky flight, through the most inhospitable tracts of peat bog, in which it somewhere manages to find a safe lodgment for its nest.

A keeper, who accompanied me for some time to-day, told me of a trap that he had once set at a Merlin's nest, amongst the heather on this moor. The trap was set on a Saturday, and on the Monday morning he found the female Merlin in it, surrounded by no less than eleven "Heather Larks" (his name for the Meadow Pipit), all fresh and un-

touched, but all more or less plucked, and all, no doubt, provided for her use by her attentive, and soon to be widowed mate, within the short space of certainly not more than forty-eight hours. There were the remains of some other Pipits, which had been eaten previously, about the nest, which contained much incubated eggs. The trap was reset, and in a few days the male Merlin had followed his partner across the bourn, and his body was also fluttering in the breeze that stirred her dainty plumage on the keeper's rail.

The Merlin is a fairly common nesting bird on all these moors, and being now, happily, recognised as comparatively harmless to game, is not generally much harried. Its most usual nesting site is on flat ground amongst the heather; but frequently the additional security offered by broken ground, such as the rim of a little landslip, or a stony bank, has superior attractions for it. In Merioneth, I saw several nests upon regular cliffs, in just such situations as a Kestrel might have chosen, and in old Crows' nests, in trees, or bushes. One was upon the flat, heath-covered, top of an isolated rock, about four feet above the adjoining level, and comparatively safe from being trodden upon by sheep or cattle. I believe that the principal reason why nests are so frequently met with in Wales otherwise than upon the ground, is that the hills are often so heavily depastured, that the risk of being trodden upon by stock is one to be seriously taken into consideration.

The nests made use of in trees were all those of the Carrion Crow (almost the only available nests in such situations), of at least one year old, weathered and worn down till they presented little more than a nearly flat platform of clay, on which the Merlin's eggs were laid. In one case a few slender birch twigs had been added. All the "trees," except one, were the isolated white-thorns so commonly met with along a rocky hillside, and so constantly built in by Crows, in preference to the much safer cliff often closely adjoining. The highest of these trees would scarcely exceed twenty feet. In the exceptional case, the nest was in a mountain ash (another favourite tree with Crows) near the



MERLIN'S NEST IN TREE.



MERLIN'S NEST IN HEATHER.



top of a wooded dingle, on the side of Aran Mawddwy, near Drws-y-nant. The full clutch of eggs varied from four to six, always of the orthodox Merlin type, with the violet bloom which so readily distinguishes such eggs when fresh from those of the Kestrel. The colour may be as easily washed from a Merlin's egg as from a Kestrel's, and, where the eggs have been much exposed to wet weather, I have seen them considerably blurred.

Towards the close of summer, after the young are well fledged, flocks of Starlings pass regularly every afternoon, across the moors, from the Dee valley in the direction of Trawsfynydd, flock after flock often succeeding one another in rapid succession. No doubt there is some specially favoured roosting-place in that locality, though I did not happen to come across it. On the moor, there was a Merlin's nest, which contained three scarcely more than half-grown young at the beginning of August, and the old birds had got into the habit of regularly levying toll on the passing Starlings. The remains of two or three young ones (I never saw an adult) were nearly always to be found at the nest, and we once found four, all newly killed, at the same time. Happening to be passing that way, rather late one afternoon, I sat down at some little distance to await events. Starlings soon began to appear, but without passing very close to the nest, and as yet no Merlin was visible. By and by, however, the male arrived, and settled upon a stone; the female, I think, must have been sitting all the time with her brood at the nest. Presently a flock of Starlings shaped a course almost directly over the nest, and in an instant both the little falcons were in the air, and, by almost simultaneous stoops, each brought its bird to the ground, quite close to the nest, and most probably well within view of the expectant young. It were easy to enlarge upon this, as an object lesson to the young birds in the art of catching prey, but the pen grows loath. It is too well known that no young hawks require any such teaching, but are ready, though they may have been hand-reared and never have seen a bird killed, to make the attempt to catch their food as soon as they are able to fly. It was certainly

a very convenient arrangement, however, for keeping the larder stocked, and one can only wonder that experience did not warn the Starlings to take another route; but they did not, or if they did, other flocks took their place, for until the Merlins were fledged there was probably scarcely a day passed that they had not starling for their evening meal, and instead of lessening in numbers, the Starlings passing that way steadily increased for several weeks following.

Writing of this brings to mind a story which a Caithness man, at that time a keeper here, told me in connection with the young Merlins. He and a companion, he assured me, had once witnessed the interesting spectacle of a Golden Eagle teaching her young one to catch game. Both birds were circling overhead, the old one carrying a prey in her talons, which every now and again she let drop for the young bird to catch, and when (as always happened) it was missed, she herself dashed down and recovered it before it had reached the ground. This went on for some time before the game was abandoned, and the "prey" allowed to fall to earth; when, to the surprise of the onlookers, upon going to see what it was, they found it to be only a dry "peat," as cut and stacked for fuel. It is not judicious to cast a doubt upon the veracity of a Highlander, on his native heath, and I did not risk it: the story was quite apropos, and *si non e vero, e ben trovato!*

I one day saw a Merlin chase a Wheatear into a hole amongst the rocks, and as she perched upon a stone close by, I have no doubt she would have waited for a chance of continuing the flight, had she not been disturbed. On the other hand, there was a Wheatear's nest under a stone, near the foot of one of the thorns which contained a Merlin's nest, and the young from each were fledged about the same time. At the Ddwallt, a Ring Ouzel reared her young, unmolested, within twenty yards of a Peregrine's eyrie, and the cock frequently sang from a projecting rock well within half that distance of it. Cases of this sort are, however, common enough. Does not Shakespeare say—

“The eagle suffers little birds to sing,
And is not careful what they mean thereby,
Knowing that with the shadow of his wing
He can at pleasure stint their melody.”

(*Titus Andronicus*, Act IV. Scene iv.)

Many years ago, I found the young of a Long-eared Owl in an old Magpie's nest, in a spruce fir wood, and in the bottom of the nest, amongst the collection of sticks, a Coal Tit had established herself, and was sitting upon a large clutch of eggs. Perhaps the incident is more worthy of recalling from the unusual site for the tit's nest.

Nearly all the Merlins disappear from the neighbourhood of Llanuwchllyn before winter comes on, as do the majority of all the other birds of prey (with the possible exception of Buzzards), and it is rare to see one at that season that is not in full mature dress. I saw one beautiful little male, that had been shot in December, whose plumage vividly recalled the description—

“The elfin king, like the merlin's wing,
Are his pinions of glossy blue.”

Yet he was only decaying on a vermin gibbet! Except when in this state of plumage, many keepers do not recognise a Merlin, but include it under their almost *generic* term of “Sparrow-Hawk.” On the other hand, so seldom do they get an adult male Sparrow-Hawk, that when they do, the blue colour of his back and wings often deceives them into calling him a “hen Merlin.”

Technically, the Merlin may sometimes be called *Hebog-y-graig* (hawk, or falcon of the crag), but the name is, I rather fancy, of modern origin, founded on the English one of Stone-Falcon, sometimes applied to this species. Hardly one countryman in a hundred would recognise the name, or distinguish the bird if he held it in his hand, and on the wing it is only a *Math o gwalch*, or “kind of hawk,” a very comprehensive term indeed, often including even Cuckoos and Nightjars.

But let us now return to the moor, from which this rather long digression has led us so far astray. Merlins are

by no means the only "unfriends" of the gamekeeper which make use of the shooting butts in the off-season. Buzzards, and Ravens, frequently carry a prey thither for discussion, leaving tell-tale remains, and droppings, behind them; but it was rather amusing to find that arch-enemy of the game-preserve, a Stoat, taking advantage of the dry lodging which a butt offered, to make it her nursery. A single small round hole had been neatly drilled into the peat, about half way up the back of the butt, but, unfortunately for her, was so conspicuous that it at once attracted the attention of a keeper. When the tenant was dug out, and despatched, the cutting disclosed a warm and roomy nest, excavated in the thickness of the "wall," and snugly lined with bents and grass. Later on, I saw another nest in a butt, on this moor, in which the young stoats had been found, and killed, the plan of the chamber being very similar to the first one. In each case, there was only a single entrance. The stone cairns, and barrows, likewise afford attractive retreats to Stoats, some of them being apparently resorted to, as places of call, or occasional bivouac, by all the stoat population of a district. A keeper who knows his business at once recognises such a rendezvous, and is not slow to turn his knowledge of the ways of animals to account. The outward and visible signs are rather suggestive of the back of a neglected ferret hutch, Stoats, like dogs, having a decided partiality for transacting certain parts of their business in particular places. The first fall of snow in autumn, or a late fall in spring, are sure to betray some such spots, and, properly taken advantage of, lead to the destruction of more Stoats than the trapping of all the rest of a season put together. Two cases in point, both of which occurred on these moors, may be instanced, as showing what can actually be done. They were both carried out by the same man, who, although suffering from an infirmity which prevents his getting over the ground so quickly as his more fortunate brethren, has yet by the exercise of a little of his Perthshire "gumption,"¹ proved, in more ways than one, the truth of the old adage

¹ *Anglice*, wit.

that one head is worth more than two legs. From personal knowledge, I could relate several similar experiences. Having followed a track in the snow for several miles, this keeper at length ran it to ground in a cairn, the "signs" round about which told him their own tale. Leaving it undisturbed, he returned next day, with two or three sparrows dosed with strychnine, and left them carefully concealed from harm's way amongst the rocks. At intervals, he left twenty-three sparrows similarly doctored, after which they ceased to be taken away, showing that the list of "callers" had been exhausted. Round about, at different times, he picked up eight dead Stoats, all males, and no doubt these were only a portion of those that had been destroyed, many having, doubtless, crept out of sight to die. On another occasion he tracked a Stoat to a peat stack on the hill, and worked it in similar fashion. Many Sparrows disappeared, but not a single dead Stoat was gathered. During the following summer, however, when the farmer was removing the peat, a great many skeletons, and mummy Stoats, were found inside the stack. I forget the exact number counted, but at any rate it ran well into double figures.

The track left by a Stoat in the snow is very characteristic, but easily overlooked by a person unacquainted with it. When travelling at an ordinary pace, about a foot, or perhaps a little more, is covered at each "stride," and all four footprints are so close together that, looked at casually, they form little more than a single spot in the snow. When examined more closely, however, the impression of each foot can generally be made out clearly enough, showing that the hind feet are placed slightly in advance of the others. When the animal is urged to a faster pace, the hops are correspondingly further apart, and in a "spring," a yard is comfortably covered. The track of a Weasel closely resembles that of a Stoat in miniature, but the individual footprints are often more widely separated and better defined. Except where the Stoat is occasionally hunted by hounds, few people have any idea how far the animal may wander in the course of a night. From five to ten miles is

commonly covered, and I have seen even that distance considerably exceeded. In mountainous country, the higher grounds are usually abandoned for the valleys, in winter, but not always ; and at that season, a trail picked up in the snow, on low ground, may lead the trackers, by very devious course, to some favourite haunt far away amongst the hills. At that season, a pair of Stoats (or Weasels) frequently travel in company, and the course of a stream, or a stone wall, is often followed for a long way. Frequently the same road is taken night after night, varied according to circumstances, but certain places of call being seldom missed.

The Stoat is, however, by no means altogether a nocturnal animal. It seems to hunt indiscriminately by day or by night, just as the spirit moves it, and, as is the case with so many other animals, it may be only its persecution by man that has led to its carrying on so much of its business under cover of partial darkness. Even in populous districts, it is commonly abroad during daylight ; and in places more remote, it is so often to be seen, that it must, one would suppose, spend much of the night in sleep. Although so admirably adapted by nature for pursuing its prey under ground, it seems to delight, too, in the true sporting instinct that prefers a long hunt by scent, and a kill in the open. It is, of course, idle to argue that the sense of "sport" can extend, in any of the lower animals, much beyond the encompassing of the death of the quarry ; but were the idea tenable, then assuredly the Stoat would take high rank amongst the sportsmen endowed only with instinct. Like many of his kindred, he hunts as much from sheer lust of slaughter as from any mere desire for food, and often kills far more than he is able to consume. When pressed by hunger, scarcely anything comes amiss to him, though small birds, and mice, or voles, seem to be preferred to most other kinds of food. When not particularly hungry, however, he will, like a knight of old, roam far afield in search of entertainment and adventure : and he enters into the pleasures, and attendant hardships, of a stern chase, with an enthusiasm, and zest, rivalling even

that of his mediæval prototype. If overtaken by an enemy, too strong to be withstood, he will make the best shift he can with such castles, or cairns, as may be at hand, and in the final assault will always die game to the last, hissing defiance at his foes, and never seeking to barter liberty for life. Content to hunt and kill almost anything that comes in his way, he yet seems to prefer a quarry that will put his energies and abilities to the test, and he will stick to the foil of a hunted animal with the pertinacity of a sleuth-hound, despite any checks or intervening cross-scents.

Like the rabbit, a Stoat seems frequently to make his couch above ground, during fine weather, and in winter at any rate, to prefer a warm and sunny situation for the purpose. The proverbial difficulty of catching a Weasel asleep applies with equal force to most of the lateral branches of the family ; and I was, therefore, much interested one day, when beating through a deep dingle, both sides of which had recently been planted with young fir trees, to see a Stoat, comfortably coiled up on a grassy ledge of rock, exposed to the full rays of the February sun, and sound asleep. The keepers were engaged, at the time, in killing out some rabbits which had found their way into the plantation, and several shots had been fired before we came upon the Stoat, but his slumbers had not been disturbed. Narrowly escaping with his life, from a blow aimed at him with a stick as he slept, he had to run the gauntlet of three or four cartridges that were emptied at him as he dodged through the trees, but, apparently, he got off scot-free, and reached the shelter of a friendly cairn with a whole skin.

Perfectly white Stoats are rare in these parts ; but a considerable proportion of those killed in winter, especially on the higher ground, exhibit more or less of their normal winter coat. I saw some very prettily pied examples, and had further opportunities of confirming what I had elsewhere observed regarding the change of colour in the fur. The change from brown to white has already been proved, on captive animals, to be due to actual alteration in the colour of the hair, induced by a fall in temperature, and to be capable of being completed, upon occasion, with remarkable

rapidity. From whatever cause the blanching of the hair may arise, I believe the autumnal change is always in the colour of the fur itself, and not due to any "moult." New fur is regularly assumed in autumn, but at first it is generally (if not always) brown in colour, and no further shedding of the hair takes place until spring. That the hair may turn white in some cases, however, without the intervention of frost, and that similar climatic conditions do not influence all Stoats in the same degree, is abundantly proved every winter. One of the most beautifully white examples I ever saw was a female, killed in low country, in October, before there had been more than slight touches of frost, and before any snow had fallen. It was not an albino; and many similar cases could be cited, without trouble, were it necessary. A full brown Stoat, upon the other hand, may be rare, but it is not unknown in Alpine districts when snow is lying deep, and when most of its companions are in white apparel. Why some should change colour while others do not, we cannot tell; but robust health, or the reverse, or food-supply, may to some extent be influencing agents.

The return from white to brown, in spring, is, in my experience, always brought about by the casting of the white hair; and in many piebald Stoats which I have examined, the hair on the white patches was being lost much more rapidly than the surrounding brown fur, and being replaced with dark hair. In one or two cases I have seen brown Stoats, killed in spring, whose coat presented a very ragged appearance, from the new fur being short, and close, on some irregular patches, long, and not yet started to be shed, on the rest of the body. Such animals, I conclude, have made haste to cast the white spots they carried, in order to get rid of undesirable attractiveness, while the fur on the rest of the body would not be renewed till some time later in the season. It can hardly be supposed that the animal is able to exercise any direct personal control over the change in colour of its coat, but it seems probable that the same failure of nourishment (or whatever it is) that induces it to turn white may also hasten the "death," and

fall of the white hair ; like causes thus contributing to the animal's advantage as much in spring, when the hair is cast, as in winter when it changes colour. The change from brown to white seems always to take place in the most irregular and haphazard fashion, scarcely any two animals being found exactly alike. Most usually, white seems first to appear on the tail, and spread gradually over the dorsal area, the neck and head being the last parts to become affected, often never changing at all, or only to a slight extent. In many cases, however, an almost exact reversal of affected areas is observable, and the white seems to creep upwards from the limbs, leaving the last vestiges of brown in a narrow dorsal line. If, as might be concluded, the object of the change is to protect the animal from foes who look down upon it from above, the retention of the brown fur on the back would appear to be about the likeliest possible way of defeating the end in view, and constitutes just one of those puzzles which Nature seems to be so fond of setting us!¹

By the better informed inhabitants, it is, of course, well understood that the Stoat is liable to change colour in winter, but the average person one meets with in the glens of Merionethshire considers that the white animal is distinct from the brown one. In common parlance, the brown Stoat is the *Wenci fawr*, or "big weasel"; when white, it becomes a *Carlwm*, and there is a favourite expression, *Gwyn fel y carlwm*, "as white as a stoat." An Ermine is very rarely recognised as being the same animal as a Stoat, and is known as *Cath bale*.

Next to the Fox (which in a hilly country like this, undrawn by hounds, deservedly heads the list of the keeper's enemies), the Stoat, and the Crow, share between them the unenviable distinction of being the worst friends

¹ Some interesting information regarding the causes of the change in colour in hair will be found in a communication by Mr E. Metchnikoff to the *Proceedings* of the Royal Society for 1902, in which it is stated that the loss of colour is brought about by some all-devouring cells known as *Phagocytes*, which, developed in the central part of the hair, make their way outwards, and there absorb, and thus destroy, the pigment-granules, leaving the erst-while dark hair colourless.

of the game-preserver. On a grouse moor, in comparison with this trio, all other "vermin" are of comparatively little account. A Crow generally leaves some traces of his depredations behind him; but a Stoat will, unobserved, steal every egg from a grouse nest, and removing them to some safe place for discussion, completely hide the robbery. Sometimes a large collection of egg-shells may be discovered beneath a rock, or on the removal of the stones from some cairn, or even in a peat stack, and the keeper recognises but too well the handiwork of a Stoat. Of course it may be captured, but so much harm has been already done. Sometimes, too, the sitting hen is surprised, and killed upon her nest. One day, while sitting on the side of the hill overlooking Dallgym, or "the Blind Valley," the keeper heard a Grouse cry out quite close to him, and on running forward was just in time to see a Stoat making off. The Grouse had been caught upon her nest, and sharply killed by a bite at the nape of the neck, from which the blood was flowing freely.

There is a magnificent peep into the Dallgym valley from the moor here, the hills rising almost precipitously, all round, for several hundred feet. We look down from the top of an almost self-buried little cliff into a natural amphitheatre, at the bottom of which nestle one or two farm houses, beside a brook which winds away to the woods surrounding Sir Edmund Buckley's seat at Vachddeiliog. On the lower slopes of the valley, a few trees are scattered here and there with park-like effect, and there are the usual little fields dotted about wherever a bit of ground has been formed level enough, and clear enough of rock, to admit of the land being ploughed. On some of the trees, Crows' nests could be seen, and a Peregrine Falcon held possession of all that remained of what must once have been an imposing crag. It is now, however, only a precarious site for an eyrie, the rock itself being of rather easy access, though the heap of fallen stone, at its base, slopes away so abruptly as to make it an arduous climb from the valley.

A short way further on, the moor is intersected by another deep valley, at the bottom of which runs the

Llanwddyn road, leading from Bala to Lake Vyrnwy. The bank which overlooks this valley from the west is almost as imposing as that we have just left. The entombed cliff peeps out here and there from amidst its own crumbling ruins, but it is seldom as much as fifty feet in height, in any one place, and is now untenanted except by a couple of pairs of Kestrels. While we sat near the top, however, three beautiful Buzzards sailed up the valley, and came wheeling around us, pretty close at first, but gradually enlarging their circles, as they mounted upwards, till they became lost in the direction of Rhiw Argor. No doubt they were visitors from the wooded crags round that place, where I afterwards found an eyrie ; but it was a most unusual sight to see three such large birds of prey on the wing together, at this season of the year, and apparently not jealous of each other's company. One of the points overlooking the road here, rather greener than the rest of the ridge, on account of the presence of a spring, is reputed to be a favourite resort of Cupid ; and when the little god is in a good humour he amuses himself by aiming his shafts at the passers-by far below. On this account, no doubt, it is a favourite walk with young people from Bala ; and when a girl is thought to be spending, unprofitably, too many years of spinsterhood, she is advised by her friends to "try the Llanwddyn road." My informant was a firm believer in the virtues attaching to the green mound, having himself, as he said, proved the efficacy of its spell. To-day, the only female visitors are speeding by on the unsentimental bicycle, as oblivious, apparently, of the beauty of the country, as unwitting of the proximity of Cupid's temple. "Love-darts would be wasted here," soliloquised my companion ; "they be English ladies, and would not be understanding the old language, I think."

CHAPTER XVIII

Rhiwaedog—Roman and Saxon invasions—Lywarch Hen—Harriers—
“The Eagles”—Kite—Golden and White-tailed Eagles—The king of
birds—Druid’s birds—A dust-bath.

A SHORT way beyond the Llanwddyn valley, and nearly overlooking Bala station, stands Rhiwaedog, or “The Bloody Braes,”—an old Roman station, later occupied by the Saxons, and redolent of tales of the days of eld. To quote Sir George Douglas¹—

“The grassy mound you here may trace,
Green foss and ruin’d wall,
That tells of a once conquering race,
And of the conqueror’s fall.”

Much that told of ancient occupation has been carried off, from time to time, to Chester and elsewhere, but a good deal still remains to interest the antiquarian. A curious old stone is pointed out, that legend avers was wont to open before the death of the reigning chieftain, or to portend any similar calamity, the runic signs which it disclosed being, of course, only decipherable by the bard. Some old furniture remains in the house, but the building itself is modern. The origin of the name is variously traced to engagements with the Roman legions, or to a battle fought by Lywarch Hen against the invading Saxons, in which the defender was defeated, and lost the youngest, and last, of his large family of twenty-four sons. Lywarch himself died at Llanfor, in the valley on the opposite side of the Dee, A.D. 660, aged 145, so that he well deserved his title of “The Aged.” He had lost all his possessions, as well as all his sons, in defence of his friend, Prince Cynddylan, to

¹ *Poems of a Country Gentleman.*

whom he had given shelter, and who at last fell himself before a Saxon blade.

To the south and east the moor rolls away in billowy ridges, to Moel-cwm-sarn-llwyd and the Berwyns. The Hen Harrier maintained a footing here up till the middle of the last century, and has occurred occasionally since. A nest is said to have been found twelve or fifteen years ago; but all the information I had from gamekeepers was somewhat vague, the species not being distinguished by them from Montagu's Harrier, which occasionally nests on these moors, a nest and eggs having been taken here in 1900. Both birds were killed at this nest, and are, I believe, preserved at Pale, the eggs being in the possession of a gentleman residing near Bala. I was never so fortunate as to see a Harrier here; but I talked with several keepers who had killed them within recent years, and had found their nest amongst the heather (including the last delinquent); and one man assured me that he saw a blue male here, in December 1906, which would doubtless be a Hen Harrier. There are so few nesting stations of this bird now left in Britain, that it seems a pity the last of them should be extirpated, however impossible it may be to deny the amount of harm they do upon a grouse moor. Few birds of prey, unfortunately, are more destructive to young game-birds, and even an old one has to bestir itself, to avoid capture, should a Harrier get above it. A good deal has been done by Lord Cawdor, and some of the members of the British Ornithologists' Club, towards the protection of the few remaining Welsh Kites: could these gentlemen not be persuaded to extend their good offices in favour of the Harrier, which is as much in need of protection, and perhaps as deserving of it?

Some people I met in the district professed to be acquainted with the Hen Harrier, and its memory is perpetuated on the sign of the village Inn at Llanuwchllyn. The name of the Inn is Gwesdy-yr-Eryrod, or "The Eagles," but on the signboard the King of birds is represented by three very dove-like Harriers in pursuit of a hare. The painting is, no doubt, the work of a local artist,

and rather suggests that, not being acquainted with a real eagle, he had represented a bird with whose appearance he was more familiar. When differentiated (which is probably not often by the ordinary Welshman) the name given to the Hen Harrier is *Y Bod tinwyn*, or white-tailed Kite; but this is said to be only a modern substitute for a more ancient one, *Bod glas*, or *Bod llwydlas*, blue or grey-blue Kite.

Upon these moors, one day in June, I saw what I believe was a Kite; but it sailed away, high in the air, in the direction of Pale, and was never near enough to make identification easy. This part of Wales is outside the present range of this species, and it is very rarely that a straggler is ever seen here. One was said to have visited Lake Vyrnwy two or three years ago, and another to have been seen nearer Dinas. *Barcud* is the Welsh name which properly belongs to the Kite, and many place-names, like Nant-y-Barcud, Coed-y-Barcud, and so forth, seem suggestive of former breeding stations; but, locally at any rate, *Barcud* is now so commonly applied to the Buzzard that they more probably refer only to that bird. Other names given to the Kite are *Bod*, *Boda*, *Barcutan papur*, and *Beri*. There is a Rhyd-y-bod in Cwm Cynllwyd.

The Golden Eagle has for long been extinct, as a breeding species in the British Isles, anywhere south of the Highlands of Scotland; but in the time of Willughby, who died in 1672, it was reported still to breed annually upon the high rocks of Snowdon.¹ I was informed that there is still a tradition extant that it also formerly nested on Cader Idris; and that the falcon, who now makes use of the site, holds only temporary possession, pending the return of the royal bird. When the rightful owner comes back she will quietly relinquish the eyrie, but meanwhile she keeps it free from all other intruders. The names borne by crags, in several other places, are also suggestive of former occupation by Eagles. One of these has already been referred to: near Bwlch-y-gros there is a rock known as Tap-nyth-y-Eryr, or "The nest of the Eagle." It was on the moor in that neighbourhood that a White-tailed Eagle was killed in

¹ See Yarrell's *British Birds*, 4th ed., vol. i. p. 12.

March 1899. This bird is now preserved at the Post Office, in Bala, where I saw it. The cutting from a Welsh newspaper, attached to its glass case, states that it weighed 15 lbs.; but the man who was responsible for its death assured me that this was an error, the actual weight having been 13½ lbs. It fell a victim to the eagle's well-known partiality for carrion, having taken a poisoned bait upon the moor. No other Eagle seems to have been seen in the neighbourhood for very many years previously; but it is not improbable that a bird which frequented the mountains here, for a week or two, in April 1905, may have been another wandering Erne. It was described to me by several persons who had seen it; one man saying that it had approached him so closely that he was able "to see its great yellow feet": in size, he maintained, "it was nearly as big as his cow!"

Although very well known in certain quarters, the story of the crowning of the Eagle as king of all the feathered tribes may not be so familiar to some of my younger readers, and I therefore take the liberty of repeating it here. It is said to date from as far back as the thirteenth century; but the rivalry between the Wren and the Eagle is of very much older origin than that, having been referred to by several ancient writers, Aristotle and Pliny amongst the number. When the animals were liberated from the ark, so the tale runs, the birds held a council for the purpose of electing one of their number to rule over them, and it was unanimously agreed that he who could mount nearest to the sun was best fitted for the position. The Eagle had no difficulty in out-soaring all other competitors; but, when he had become weary through his exertions, the Wren, who had concealed itself amongst the Eagle's feathers, flew up still higher, and in a merry outburst of song laid claim to the crown. Opinions were divided when the council re-assembled, some birds voting one way, others another; and while the matter was being debated, the Wren, whose tactics were hardly approved of, was imprisoned in a mouse-hole, and the Owl set to keep guard over him. The debate, however, was so protracted that the sentinel fell asleep at his post, and the prisoner escaped, at which

the other birds were so indignant that they banished the Owl to the furthest depths of the wood, and he now never ventures abroad during daylight ; while even at night his appearance is always greeted by loud hooting. The Wren, too, paid rather dearly for his frolic ; for his feathers, not being adapted by nature for so near an approach to the sun, became so scorched that they have not yet recovered : hence their present-day singed-brown colouring. His tail also was shrivelled to a mere stump. The council ended in disorder, some members proclaiming the Eagle as their king, while others elected to be ruled by the Wren, and to this day no unanimous decision has been arrived at. The consequence is that, while the Eagle is regarded as king in some countries, the Wren holds sway in others. There are many versions of this fable, a number of which will be found in Mr Swainson's delightful book on *The Folk-lore of British Birds*, to which the curious reader must be referred. In that work a long list of names, in different languages, is given, all conferring the title of King upon the Wren ; but, with the exception referred to below, they cannot be noticed here. In Ireland the Wren is almost everywhere known as the King of birds, a distinction not always to be envied, since it often leads to the poor birds being hunted to death on St Stephen's Day, Christmas Day, or other holidays. Something of the same custom prevails in other countries ; and where a Wren is met with in an open country (such as on a moor), away from trees and bushes, its short flights, and dodging habits, offer considerable temptation to young people to hunt it. More than thirty years ago, the writer has frequently joined in such a chase, the run often lasting more than half an hour, and more often than not resulting in the quarry's being "marked to ground" in some mouse-hole, and having to be left there.

Upon the Welsh mountains, I one day met a man (needless to say his name was *Jones*) who volunteered to show me a Raven's nest upon a bleak, but not very high, cliff, near the summit of the range. After we had completed our journey, and duly inspected the nest, we were seated,



A WREN'S NEST SHOWING HEN.



"THE SPIRIT OF KING ARTHUR" (WREN)

talking, amongst the litter of fallen rocks at the foot of the cliff, when a little Wren suddenly appeared, and, amidst the cheerless surroundings, poured out a merry stave of song. Both here and elsewhere I have often had a similar experience, for it is astonishing to what unlikely, and apparently inhospitable regions, a Wren will frequently find its way. But the appearance of this particular bird upon Cader Idris called forth from Mr Jones the interesting remark: "We call him the spirit of King Arthur here, and you cannot stay for half an hour anywhere on the mountain but he will appear to you." The German name of *Schneekönig* (Snow King) may perhaps have been bestowed upon the Wren from this same habit of turning up in unexpected places, even when the ground is under snow.

The common name of the Wren, in Wales, is *Dryw*, or *Dryw bach* (little wren), no doubt derived from the Celtic *drai*, from which we have the Irish *drean* (easily leading up to "wren"), meaning either a Druid, or a "Druid's bird," or "a bird that makes predictions." In any case, its association with the Druid bespeaks at least a sort of semi-royal state.

It is almost superfluous to allude to the well-known fact that, while some kinds of birds bathe in water, others prefer a dust-bath, while some may indulge in both. I do not remember, however, ever having seen any allusion in print to the fact that the Wren is one of those which delight in dust, although it also bathes in water. I once had a very good opportunity of observing this. There was a veranda outside my room window, containing some flower-pots, one of which was filled with dry earth, while all outside had been soaked with rain for weeks. To that dry pot there came a little Wren regularly every morning, while the wet weather lasted; and after a good roll and shuffle in the dust, it would sometimes sit for a minute or two on the rim of the pot, which was a large one, and preen its feathers. This dust-bath was taken with as much vigour, and apparent enjoyment, as one is accustomed to see displayed by the sparrows disporting themselves on a newly levelled seed bed.

CHAPTER XIX

Wild flowers—Varieties of—Viviparous grasses—Geology—Rock plants—
The lawn-keeper's best friend—White flowers—Toothache—Cuckoo spit.

ALL over these hills, the Wood Anemone flourishes abundantly wherever a little soil mixes with the peat, or where the vegetation has not been too closely cropped by the all-pervading sheep. Where ancient alders clothe some damp and rotten bank, it is of course in its element ; but it is equally abundant, if not so luxuriant, in many places far above the present limits of tree growth, suggesting a possible decline in forest conditions, and a survival of forest flowers long after the protecting boughs have disappeared. Be that as it may, however, the remains of fallen timber will generally be found, if looked for, amongst the soil, or peat, where the anemone grows, and it is in situations in which it is most starved in that respect that it seems to develop the greatest tendency to produce coloured blooms. Hereabouts, pink varieties are much more frequent than in most places, many of them being quite rich in colour, and attracting the eye while yet quite a long way off. I found to-day one large patch, of several yards in diameter, covered with flowers ranging from pink up to a pretty full rosy tint, very handsome and distinct, and well worthy of removal to the garden, could we only be sure of the colours remaining permanent. Blooms slightly tinged with pink, or violet, are, of course, not uncommon, but they seldom persist if the plant be moved. It is curious that the Wood Anemone should differ so much in this respect from its constant companion, and rival in beauty, the Wood Sorrel. The latter, also, is sometimes found wild with flowers of a more or less deep pink, but may

generally be relied upon to retain its colour when transferred to the garden. I have had a pink variety of *Oxalis acetosella* on the rockery for years without its losing anything of its beauty—though all attempts to increase its depth of colour failed,—but removal of varieties of the Wood Anemone has invariably been attended with disappointment. “It’ll change wi’ the lift,” as the old song says; but why it should be so still remains an unanswered question.

The moors round Llanuwchllyn are rather remarkable for the variations, both in form and colour, produced in many of the common wild plants. Perhaps the humid climate, or the frequently excessively wet soil, may have something to do with it. At any rate, that is probably the chief cause of the prevalence of viviparous forms amongst the grasses and some of their allies. I constantly met with clumps of the common Rush (*Juncus glaucus*) in which the development of young plants in the flower-head was so pronounced as to give the plant quite a hairy and conspicuous appearance; several of the other rushes producing similar varieties, in nearly equal abundance. Amongst these, *Juncus uliginosus*, and *J. acutiflorus*, may be specially mentioned. I cannot refrain, in passing, from allusion to one of the most useful properties of rushes on a moor, or bog, so far as the pedestrian is concerned. “Step on a rasher bush, and it will no deceive ye,” is an old Scotch proverb, the truthfulness of which is nowhere more apparent than on the marshy uplands of Wales. The hassocks formed by Rushes, *Aria cæspitosa*, or *Carex paniculata*, are often of the utmost service to him whose path is intersected by a bog, the soil gathered up and held together by the mass of roots forming secure “stepping-stones,” and enabling him to cross dry-footed, where his less accustomed companion may be wading knee-deep through mire and slush.

On the sides of the railway, or in other places where some protection has been afforded from the nibbling sheep, large patches of *Festuca ovina* may be seen, every head of which will be weighed down with the dense growth of young seedlings upon it, and on the less accessible ledges of many of the mountain crags, the same thing is very

noticeable. Here, perhaps, we see the developing of a variety into what is sometimes considered a distinct species under the title of *Festuca vivipara*; but its identity with the parent stock, or at any rate its immediate relationship therewith, is at once apparent on a careful examination. Here and there, amongst the monstrosities, a typical, non-viviparous head may be discovered; and close at hand, where the grass has been subjected to more regular grazing, the type rises triumphant over the variety.¹ The same remarks may be applied with equal justice to several other common grasses. *Dactylis glomerata*, *Cynosurus cristatus*, *Holcus lanatus*, and even *Poa fluitans*, may all be noticed showing more or less tendency to become viviparous here, the first two commonly so; and in some of the *Carices* a similar, though less pronounced, inclination is visible.

A mountainous district, such as this, where large tracts of country have never been disturbed since glacial times, also offers special facilities for the study of the natural spread of vegetable life. A face of rock may be so smooth, and so constantly washed by rain, that sufficient for the sustenance of even a lichen has not collected on its surface. Or some tiny crack, or inequality, may have held just enough of the wasted stone to afford rooting space for the germ of lichen or moss, which has spread outwards from its centre, it may be to the magnificent diameter of a three-penny-bit, and yet how many years old may the plant not be! Elsewhere, perhaps, a lichen has covered a space as large as a full-sized dinner-plate, or crept all over the stone, but yet it may be no older than its diminutive neighbour. So much do

¹ Were it claimed that the viviparous habit of these grasses was of prior date to that in which the seeds came to be dropped before germination had started, there is a good deal here which might be used in support of the theory. Wherever sheep, or other herbivorous animals, were able to crop the grass at will, it would obviously militate against the chances of young plants arriving at maturity were they carried during their early growth on the heads of their parents. Indeed, their very appearance there would only invite annihilation, while seeds which fell to earth to germinate under the protection of the neighbouring herbage would more generally escape. Hence to find viviparous heads continuing in protected areas only, and being replaced everywhere else by the deciduous habit which had proved to be more useful in the continuation of the species, would be nothing more than a consideration of the circumstances would have led us to expect.

circumstances alter cases in other spheres besides our own. Here, again, the spore of a fragile-looking fern, or the seed of a whortleberry, may have fallen into a chink, and found nourishment enough to sustain it. Of moisture there is generally no lack, where mist hangs heavily over the mountain so many hours of the week, and where copious rain often descends without its presence being suspected in the valley below. The plant takes root, and lives there; but the situation is too shelterless for it to dare to send up a leaf over an inch or two in height; and to flower is, for the present, quite out of the question. Its only resource is in patience. By slow degrees the roots push their way downwards and on every side, perhaps even enlarging the crack as they grow; and little by little the soil accumulates round them, more from the decay of the plant's own scanty vegetation than from anything else. But sparse though that vegetation may be, the leaves are continually collecting small quantities of carbonic acid from the atmosphere, which, with the humus acids arising from their own decay, are slowly but surely eating away the hard rock, and filling the cranny with more nourishing plant food. As more and more alkaline matter is dissolved from the rock, the soil in the cranny becomes more and more potent as a rock-destroyer, and as a plant-fertiliser, till at length, perhaps, the crack extends right through the stone, and one day the lower portion falls with a crash, leaving somewhere in its fall a scant accumulation of soil, to go on repeating the same process of disintegration elsewhere. Our plant may perish in the ruin it has been so largely instrumental in bringing about, perhaps even before it has opened a single flower, or borne a single seed, though it may be as old as the largest oak in the valley below. But, on the other hand, it may find another lodgment in its fall, or the original rock may not be so easily cracked; and for years before the catastrophe takes place, the plant may have so enlarged its little hoard of soil that it has tempted other neighbours to lend a hand in the work of colonisation. In a situation near a mountain top, probably one of the next seeds to find lodgment in the cranny may be that of a

Fescue ; and in due time a tuft of grass results, under cover of which our original fern, or bilberry, may put forth a few spore-bearing fronds, or flowers, and so aid in the perpetuation of its species. By and by, as the tuft increases in size, a wandering sheep is tempted to risk its neck for the sake of the sweet mouthful that it affords, or it gives shelter, and food, to the caterpillar of moth or other insect ; and with the arrival of the animal, though temporary loss of leaves may take place, increased fertility in the soil likewise results. Droppings are scattered, and more seeds come, and so the work goes on, till one day Dame Nature will have draped the whole precipice with her greenery, and its rugged nakedness will be hidden under a firm, luxuriant turf. The process takes time, of course, but Nature can afford to disregard the lapse of centuries, and what we see going on around us is only the operation, in its earlier stages, which has already clothed many a lesser hill and scaur below.

One of the most frequent grasses, on some of the most exposed hill tops, is the useful little *Poa annua*, the seeds of which, I suppose, must first find their way thither in the wool of sheep, or by the agency of the wind. It seems to crop up as naturally in little *débris*-filled depressions on the mountain, as on the less trampled corners of the busy town street, and here it bravely lifts its head to the blast, and, where very much exposed, ripens its seed on stems scarcely half an inch in height. It may be remarked in passing that there is no plant better suited than this for the renovation of putting greens on a golf course, or for employment wherever the end in view is the formation of a close, thick turf, in the shortest possible time. No grass is more tolerant of close and constant cutting, and none has the property of producing seed, and so renewing itself, so close to the ground, and under so many adverse circumstances. It is this very persistence that makes it such a troublesome weed on garden paths, and in places where it is not wanted ; but in its proper sphere it is, *par excellence*, the lawn-keeper's best friend.

The roots of many of these dwarf mountain plants would astonish the traveller, did he take the time and trouble to examine them, and where the formation of the rock admits of its being split away so as to lay them bare. For every half-inch the plant raises its leaves above the surface, the roots may go down a foot, or even a yard, and present a mass of rootlets more abundant than that of many a good sized garden shrub. A study of them is a good object lesson for the rock-gardener, and not for the rock-gardener only. Those who have so often failed in their endeavours to grow ferns, or other plants, perhaps carelessly pulled from wall, or rock, during a holiday excursion, may see here the prime cause of their failure; and if they pay attention to it, so as to profit by the lesson, they will probably henceforth cease to speak of such and such a plant as "Oh, that's too delicate to grow in the rockery; I have tried it ever so many times, but it has always died": the fact being that very often, when the plant is carried off from its mountain home, all its feeding roots are left behind.

White, and pale coloured, varieties of flowering plants are frequent about Llanuchwllyn, and may perhaps owe their prevalence, in part at least, to the same causes which induce a viviparous growth. On most of the moors White Heather is far from rare; and on some, such as that round the foot of Ffridd Helyg-y-Moch, it may almost be called abundant. This applies chiefly to Ling (*Calluna vulgaris*), which here, as elsewhere, is "the heather"; but in very wet places it is largely supplanted by the Heaths (*Erica tetralix*, and *E. cinerea*), and white varieties of each of these are of nearly as frequent occurrence. Indeed, I have seen the former in large clumps, four or five yards square; and as the white blooms are almost always large and fine, they form conspicuous and pleasing patches on the otherwise sombre coloured bogs. Both, also, show many rose-tinted, intermediate forms, eminently beautiful flowers; but "white heather" is seldom associated in the popular imagination here with that "good luck" which flings a halo round it in so many other districts; while the less conspicuous varieties

are overlooked altogether ; the ordinary Welshman, or even the children, not appearing to have much of an eye for wild flowers. White Thistles (chiefly *Carduus acanthoides*, *C. tenuiflorus*, and *Cnicus palustris*) are frequent, as are also pinkish, and white, forms of *Scabiosa succisa*, and *S. arvensis*. *Centaurea nigra*, called locally "Black heads," is one of the worst weeds in many of the fields ; but as it offers great attractions to Goldfinches, in autumn, the naturalist at any rate readily overlooks any bad qualities it may possess. Once or twice I came upon pure white varieties of it, and various shades of pink were common. A very pretty white form of the Sheep's Scabious (*Jasione montana*) is also deserving of mention, as it was not uncommon, especially on the Cwm Cynllwyd road, not far from the village. White Herb Robert (*Geranium robertianum*), Hare-bell (*Campanula rotundifolia*), Self-heal (*Prunella vulgaris*), and a number of other plants, were also seen from time to time, one of the most interesting, and least expected here, being the small Toad-flax (*Linaria minor*), which, as in so many other localities, grew amongst the railway ballast and may possibly be an importation. A very pretty pale variety of the Dusky Crane's bill (*Geranium phæum*), on the roadside near the chapel at Pen-y-Pont, must conclude the list. It grew alongside several plants of the normal colour, and its pale mauve flowers made a striking contrast to those of the ordinary dark purple.

If we suppose, as there seems good ground for believing may be the case, that white was the earliest shade assumed by primitive flowers, when first the petals began to change from green, and that the evolution has proceeded, through yellows and reds, up to blues and violets, it becomes interesting and instructive to note how much more often any deviation from type is progressive at the bottom of the scale and retrograde at the other extremity. Blues, and reds, are prone to revert to white ; but yellow flowers, though they greatly predominate in our woods and fields, very rarely sport in that direction, but trend upwards through orange to red.

Milfoil (*Achillea millefolium*), which in some of the old

Toothache and Cuckoo Spit 157

Herbals is recommended as a cure for wounds, and of which Drayton sang :

“The yarrow wherewithal he stops the wound-made gore,”

is here called *Milddail*, or *Wilffrai*, and is held in some esteem as a cure for toothache, the manner of application being to chew the root, or to press a bit of it into the aching tooth. My informant, who suffered very much from his teeth (a very prevalent complaint in the village), said he had tried it without effect, but had been told by the old lady who recommended it to him that he “must not have done it in the right way,” and was advised to “persevere and have faith.” I believe the doctor eventually extracted the tooth instead! Another middle-aged man, whom I met one morning with a bandaged face, said he had not had toothache for years, not since a gipsy woman, long ago, counselled him always to put the stocking on his left foot first when he got up in the morning, a practice he had faithfully carried out until that morning, when, being in a hurry, he had neglected the precaution.

Some of the school children, I found, were in the habit of sucking the “Cuckoo spittle” (more abundant here than in most places), saying they “liked its sweetish taste.” They regarded it, and the little insect which it contained, as “meat provided for the cuckoo,” or *Suran-y-gôg*, but had no idea of how it came upon the plants, and scarcely one of their teachers was able to enlighten them. It may therefore not be out of place to add that the inhabitant, and author of the spittle, is the young of the “Frog-hopper” (*Pytelus spumarius*), which lives upon the juices of the plant and secretes the froth as a protection to itself from birds, as well, probably, as from the heat of the sun. It is quite easily reared to the perfect, or winged state, by those who are curious about it; and the injury it does to the blooms of the plants attacked is too obvious in any garden, or almost on any wayside, to require comment. A useful property of the “spit” is that in very dry seasons it probably supplies both food and moisture to the young of ground birds, such as Grouse, Pheasants, or Partridges, when dew has not fallen

and other water is hard to find. The drops of liquid, exuded at their tips by the common Horsetail (*Equisetum arvense*) and other plants—always most plentiful on dewless nights and in the driest weather, and often mistaken for dew-drops—are almost certainly intended to fill a like useful office, but they are provisions of nature that are very apt to be overlooked by unobservant people.

CHAPTER XX

Ground-building birds—Voles, Mice, and Shrews—Carnivorous Goose—
Welsh names—Twites—Cuckoos—Superstition—Plumage of Cuckoo.

IN a country so closely grazed as this is by sheep during winter, and where all the fields are nearly as bare as the proverbial board before the spring comes round again, the herbage protected between the railway fences offers a welcome harbour to many of the small ground-building birds. And not to habitual ground-builders only; for even birds like Blackbirds and Thrushes, which usually choose the elevation of a bush for their nests, here commonly prefer the greater security which the railway enclosure affords, and build either in the ground itself, on a more or less steep bank, or upon some lowly ledge where the obstructing rock has been cut through. In a walk between Llanuwchllyn and Bala, in the course of an afternoon, I have seen as many as half a dozen of their nests so placed, some of them being on the sides of the ditch which usually borders the line, and thus actually *below* the general surface of the ground. In seeking thus to avoid the undesired attentions of school children, and ruminants, the birds frequently find themselves only escaping the rock Scylla to fall into the whirlpool of Charybdis, their nests upon the ground being always more liable to be raided by weasels, stoats, or mice, than when a more elevated site is selected. Amongst the latter depredators must be included the Voles, both *Arvicola agrestis* and *A. glareolus*, which, though more strictly vegetarian in diet, and less prone to take to arboreal habits than the more nimble Field Mouse (*Mus sylvaticus*), do not always decline the luxury of eggs to breakfast, when fortune throws them in their way. Shrews

I have never detected robbing a nest ; but they are such blood-thirsty little creatures that I feel sure they would not resist a baby bird, or an egg, if they considered the risk of attack by the parents might safely be disregarded. Shrews are, however, amongst the most timid of all our animals, and are always chary of quitting their well-paddled runs, and they will hardly, wittingly, incur the anger of even a Willow Wren. Probably a worse foe to ground nests than all of these put together, as well as a deadly enemy to all "mice" and their young, is, however, the common Mole. It is part of this creature's daily business to hunt for and prey upon such things, and I have time and again seen a nest undermined and robbed by it. Not long ago I actually caught one in the act of devouring a half-grown Thrush, which it had dragged through a hole bored into the nest (and that without upsetting the latter from its site), my attention having been drawn to it by the commotion the old birds were making. But Moles seem, sometimes, rather to shun railway sides, being possibly frightened by the shaking of passing trains, or kept off by boundary ditches, and the extra security thus attained may perhaps offer an additional attraction to other animals to resort thither.

Of the nests of habitual ground-building birds, the railway sides both east and west of Llanuwchllyn are usually prolific : and that it is not without good reason that such "protected areas" are resorted to, I had two very striking demonstrations. Scenes not without an element of comedy to an onlooker, but full of grim tragedy for the poor sufferers. In one case a sheep was literally "making hay" of a Pipit's nest, munching away at it in stoic disregard of the remonstrances of the distracted owner, who occasionally actually perched upon the sheep's back to scold it ! In the other, a Yellow Wagtail was the aggrieved party, and a Goose the aggressor ; and before I realised what was happening, or had time to interfere, only enough remained of one of the half-fledged young to determine their identity. In this case the parent birds uttered their complaints from the safer elevation of a telegraph wire, and in hovering over the head of the carnivorous goose.

Tree Pipits, Whinchats, Willow Wrens, and Sandpipers are perhaps the commonest of these railway-side birds; but in addition to many nests of each of these, I also sometimes found several of those of Yellow-hammers, Meadow Pipits, Robins,¹ Hedge Sparrows, Whitethroats, Linnets, Partridges, and Pheasants, in the course of a morning's walk, not to mention the Blackbirds and Thrushes already referred to; while amongst casual nests observed on the railway were Spotted Flycatchers, Yellow Wagtails, a Twite, Wrens, Chaffinches,² a Land Rail, and a Red-backed Shrike. Of course, many of these were amongst the sallows and other bushes fringing the line, or in growths of brambles, heather, and so forth. About the eaves of workmen's huts, Wrens' nests were frequent, and Flycatchers' not uncommon, three of the latter occupying recesses in half-decayed sleepers that formed posts in the wire containing-fence. Dippers find congenial sites under some of the bridges that carry the metals over the numerous streams.

The Twite's nest contained three eggs on 20th May 1905, and was shortly afterwards deserted, probably owing to my

¹ The *Rhobin goch*, *Frongoch*, or *Bronrhuddyn*, is quite as great a favourite here as in other places. In addition to other better known legends, there is one current in Wales giving the Robin credit for carrying drops of water in its bill to moisten the parched tongues of the damned, and his breast has become scorched red in consequence of his frequent visits to the nether regions. A local rhyme runs to the effect that—

“He who would rob the Wren's nest will prosper nevermore;
But he who kills the Robin would shed his brother's gore.”

While another informs us that—

“Where the Robin lives in peace, the people know no sorrow,
But where a Robin's killed, there'll be a death to-morrow.”

² The Chaffinch shares with the Robin the designation of *Bronrhuddyn* (Red-breast), but is also known as *Gwinge*, or *Y-winge*; the Bullfinch is *Coch-y-berllan*, *Llostrhuddyn*, or *Rhawn-goch*; the Greenfinch, *Llinos werdd*, or *Pila gwyrdd*; Yellow-hammer, *Llinos felen*, *Peneuryrn* (a name also applied to the Goldfinch), and *Melynog*; the Wagtail, *Y tinsigl*, or *Sigl-y-dwfr*, *Sigl-y-gwys*, etc.; Yellow Wagtail, *Sigl felen*; Grey Wagtail, *Sigl lwyd-felen* (from its yellow breast); Pied Wagtail, *Sigl fraith*, etc. The Meadow Pipit is *Hedydd-y-waen*, or *Corhedydd*, the latter name as frequently applied to the Tree Pipit, which otherwise becomes *Hedydd-y-coed*; *Llinos* signifies Linnet; *Hedydd*, Lark; Whitethroat, *Cegwyn*. Partridge is *Petrusen*, *Coriar*, or *Clugiar*.

too persistent endeavours to photograph the bird upon it. A few days later I found another nest, likewise containing eggs, a couple of miles away, on the side of Aran; but as these were the only Twites I saw during the breeding season, I suspect it is somewhat of a rare nesting species here. In February and March, 1905, however, a large flock frequented the fields above Plas-in-Cwm-Cynllwyd, and occasionally strayed down as far as the village; but they did not reappear during the next two winters. February 1905 was remarkable, likewise, in that on the 19th, during a heavy snow storm, I met with a party of five Ring Ouzels near the top of Aran. They were wild and restless, and were not seen again before the middle of April; but one of the keepers assured me that he thought he had seen Ring Ouzels here in winter before, though I confess that at the time I had some doubt about his identification. Over a large part of Scotland, the Ring Ouzel is known as the "Hill Blackbird"; here it is similarly called, from its haunts, *Mwyalchen y graig*, or "The Blackbird of the Crag."

Cuckoos are everywhere abundant, and make free use of the convenient perches provided by the railway fences and telegraph wires. I found several of their eggs and young, each year, in my railway-side nests; but it was rather remarkable that the most abundant, as well as the most easily seen nest on the embankments (that of the Tree Pipit), was not once found to have been resorted to by a Cuckoo. I suppose Tree Pipits must have out-numbered Meadow Pipits there, by about ten to one, or perhaps even more, and the habits and food of the birds are so similar that one would hardly have expected the Cuckoo to discriminate so nicely between them. Yet, as just stated, I never once saw a nest of the former species made use of, while Meadow Pipits were bringing up young Cuckoos all round them. Just to show there was no ill-feeling, as our Colonial relatives say, I took the liberty of transferring one Cuckoo's egg from a Meadow to a Tree Pipit's nest, and it was duly hatched and the young one reared. I may thus, perhaps, have been instrumental in founding a race of Tree



TWITE'S NEST.



RING OUZEL'S NEST BUILT WITH STAG'S HORN MOSS.

Pipit-duping Cuckoos in these parts, and adjusting the burthen of foster-mothership somewhat more equitably! Out on the moors, as is only natural, the Meadow Pipit becomes almost the sole Cuckoo-hatcher. The nest next most often victimised on the railway sides was certainly that of the Whinchat (the next most individually abundant species after the Tree Pipit). I found several Cuckoos' eggs in these nests, one in a Yellow-hammer's, and one in that of a Robin; but, except the latter, all the eggs much resembled one another, and were of the common meadow-pipit type. The exception was a perfect copy of a pale-coloured robin's egg, being irregularly blotched with the usual reddish markings on a dingy white ground. Of the Chats' nests victimised, one was placed quite a foot into a sort of rabbit-hole in a low peaty bank, overhung by a large tuft of *Aira cespitosa*; just the kind of situation in which one would least have expected to find a Cuckoo's egg, and where a nest *ought* to have been safe from robbery. There were, moreover, two other Whinchats' nests within a radius of five or ten yards of it, as well as a Tree Pipit's, all normally situated, all containing eggs at the time, and all *apparently* so much more likely to attract a Cuckoo's notice. The circumstance was sufficient to suggest the idea that it might have been the unusual means taken to conceal the nest that had excited the Cuckoo's admiration, and induced her patronage; but if so, her extreme caution was destined to go for nothing; for like so many other well-laid schemes that gang sae aft a-gley, the nest in the hole mysteriously disappeared, together with its contents, a few days after the Chat had begun to sit; while from at least two of those near by, though far more exposed, young were successfully reared.

Cuckoos in Merionethshire were repeatedly heard doubling the first note of their call, right through the spring months, from the time of their first arrival, making the song "cuc-cuc-koo," "two kookes to one koo," as the old rhyme has it. This I have often had opportunities of noticing elsewhere, and long ago came to the conclusion that the double note is commonly made use of by the Cuckoo whenever the sexes happen to be in close proximity

to one another, and quite irrespective of the time of year. The old rhyme, which tells us that it is only with the arrival of June that "she alters her tune," ought therefore to be relegated to the limbo of time-honoured beliefs in which poetic license has carried us beyond the limit of strict fact. I had here, also, frequent opportunity of confirming my previous observations that the female, at least occasionally, cries "cuckoo," in addition to making use of her ordinary Dabchick-like call. Nor do I think that the chuckling notes frequently heard are confined to one sex only. One female I saw being chased by two males, all, I think, chattering together, and after she had left them, and settled upon a branch below me, she distinctly called "cuckoo" three times, and followed it up, as she flew off again, with a loud Dabchick rattle. It is many years ago since I first had an almost similar experience, and I only specially allude to it now as in the interval I have so often seen the fact doubted.

The name given to this bird, in nearly all languages, is an adaptation of its universally welcomed note. In Wales it is generally *Cog-y-gog*, or *Cw-cw*. Euphonically, the latter agrees so closely with the early English rendering that I am tempted to quote here (in the hope that it may be new to some of my readers) two verses from what has been referred to, on high authority,¹ as "the earliest secular composition in parts, known to exist in any country." It is from the Harleian Manuscripts, and dates from about 1250, one version running :—

"Sumer is icumen in,
 Lhude sing cuccu ;
 Groweth sed, and bloweth med,²
 And springth the wde³ nu,
 Sing, cuccu !
 Awe⁴ bleteth after lomb,
 Lhouth⁵ after calve cu,⁶
 Bulluc sterteth,⁷ buck verteth,⁸
 Murie, sing cuccu !"

¹ Mr Chappell, *Ballad Literature*, etc.

² Seed and Meadow.

³ Weed.

⁴ Ewe.

⁵ Loweth.

⁶ Cow.

⁷ Gambols.

⁸ Goeth to harbour in vert or fern.

The Cuckoo has formed the theme of more rhymes, and folklore tales, than probably any other bird in the world. According to one of the latter, "Welsh ambassadors were called cuckoos because their countrymen generally invaded England in the spring about the time of the birds' appearance"; but what may have been true enough in olden days would seem to be no longer applicable, since Welsh people restrict their invasion to no particular season now! That "the cuckoo comes with a haw leaf, and leaves with a bere head," is as true here as in most places, for the thorn is late in coming out on the hills, and the old square-headed barley, generally grown, shoots its "seed leaf" early in July. The Cuckoos continued calling lustily at Llanuwchllyn till the first week in July, when every old bird seemed to disappear at once, each year to a day.

One of the keepers, who had shot a Nightjar in mistake for a hawk, buried it, in place of nailing it to his rail as most birds were served, believing it to be a Cuckoo and having a dread of the ill luck that would follow his action. When the bird was exhumed for my inspection, and was pronounced to be only a Nightjar, he was greatly relieved, and promptly nailed it up beside his other vermin, the old belief being that "he who shoots a cuckoo will shoot nothing else for seven years, unless he breaks the spell by shedding human blood." "A bloody nose for somebody might have done," the man thought, but might have caused trouble!

Its resemblance to a hawk upon the wing does not seem to protect the Cuckoo from the depredations of the Sparrow Hawk. I have frequently found its remains at the feeding-places of that bird, and did so twice in the neighbourhood of Llanuwchllyn in 1906; on a third occasion one had been devoured, apparently by a Peregrine Falcon, on the moors. In the latter case the Cuckoo was in full blue dress in early May; in each of the other instances—one on 12th the other on 25th June—the bird was in partially red plumage, and moulting: one of them was proved, by dissection, to be a female, with several eggs yet undeveloped, but rapidly coming forward, in the ovary.

I examined a bird, in precisely similar condition, in June some years ago.

This opens up an interesting question regarding the change of plumage in the Cuckoo, which is not very generally understood, and is mostly passed lightly over in text-books. It is now pretty well recognised that many of our birds moult only once a year, and that during summer ; but it is not so generally known that a considerable difference in regard to time of moult frequently exists between the sexes. The possible reasons for this discrepancy I may have an opportunity for touching upon later, at present it is enough to accept the fact, and to admit that the habit is not confined to any one particular family. The moult of our common Cuckoo may serve as an illustration in point. To a considerable extent its change of plumage is effected during our winter, when the bird is in warmer climates, but this is certainly not an unvarying rule. A large majority of the Cuckoos,¹ when they arrive in this country, in May, appear to have already completed the growth of their new feathers ; some of them, on the other hand, have undoubtedly not done so ; while in a few cases at all events, the young of the previous year appear to return in the same dress in which they left us in autumn, and to breed in that state. The feathers are somewhat faded and worn ; but in many cases, if not always, they seem to be retained at least until the approach of mid-summer, and frequently till an even later period. I have several times met with Cuckoos up till as late as the last week in June, which appeared to be in nearly perfect red plumage (*i.e.* in a dress similar to, if not identical with, their first feathers). I have actually heard such birds calling "cuckoo," and have proved by dissection that they were breeding ; but the few whose remains I have handled have always been more or less in a state of moult as regards their body feathers. As all old Cuckoos leave this country early in July, some of these red birds could scarcely have time to complete their moult

¹ It may be worth while noting, in this connection, that male cuckoos seem generally to largely outnumber the opposite sex ; a fact not easily explained, but one which is not confined to this bird only.

here, unless their feathers are reproduced much quicker than is the case with most other birds. However improbable such a thing may appear upon the face of it, I am, therefore, inclined to think that, occasionally at any rate, young Cuckoos may revisit our shores in spring in the same dress in which they left in the autumn (*i.e.* in their first plumage); and that, being here and engaged in breeding, they find it expedient to defer the moult of their flight feathers so long, that when they leave us a second time they are still actually wearing a considerable portion of their first plumage; or, in other words, they do not complete a full moult until they are more than a year old, and they help to continue their kind in the interval. It seems curious that all the individuals of one family should not behave in the same manner; but similar cases of divergence from rule are not unknown elsewhere, and it must not be forgotten that some young Cuckoos are scarcely full-grown when they leave us in August or September, while others of their companions have already been on the wing several weeks, and are by so much older. Some of these older birds may, perhaps, complete their change to the adult blue plumage before their return in spring, while younger individuals may not do so. Or, on the other hand, none of the young may moult until almost the end of their first year, and it may be only the more advanced of them that come back to us to breed in May. I do not pretend to know how far this may be so, or whether young birds in red plumage are ever seen, say in Africa, during summer; but merely throw out the suggestion as a possible explanation of why a few red Cuckoos are always found here in summer. Perhaps, too, males may moult before they come back, while females may not do so, and this may be particularly the case with young birds.

One Cuckoo, a breeding female, examined on 25th June, had nearly completed the assumption of her blue dress, but not quite. Over the body a few red feathers still remained: the tail and primary quills had all been renewed, and were blue and practically full grown, but about half of the secondaries were still red. The new secondaries were also

blue, but most of them were only partially grown; as usual, they had been shed in pairs, the corresponding feathers in each wing having been lost at the same time. This bird drew particular attention to a common, though trifling, inexactitude, which has been perpetuated in the descriptions of the Cuckoo in many of the leading works on ornithology (see *Yarrell*, etc.), viz. that the flight feathers in the wings of adult birds are all barred on their inner webs. In all adult Cuckoos which I have examined, the secondaries have not been barred at all, but are *plain* bluish-grey on their outer webs, and for about two-thirds on the inner web, the base of the inner webs being pure white. The immature secondaries, like the primaries, are all more or less barred with white and red, but still have a white portion at the base. The annexed photograph, showing an old and a new secondary from the wing of the bird before alluded to, will serve to illustrate these remarks. They are contiguous feathers from the same wing.

I have never been fortunate enough to meet with a Cuckoo in the "hepatic" phase of plumage; but as it has been described as "a rich chestnut-brown, like a female kestrel," it must rather nearly approach to the usual immature dress, paled as the latter is by weather and wear when the birds return to this country. There is, of course, no reason at all why true "hepatic" varieties of the Cuckoo should not occur as frequently as they do in the case of some other birds, and it may be thought presumption to hazard such an opinion, but still I cannot help expressing a doubt whether some of the specimens seen or obtained, and duly reported as belonging to the *Cuculus rufus* race, may be anything more than young cuckoos in what must after all be regarded as a normal plumage.

CHAPTER XXI

Sandpipers—*Spiræa* hedges—Birds carrying young—Adventure with Sparrow Hawk—Young Sandpipers—The angler's invitation.

NEARLY half of the entire Sandpiper population of the district may be said to resort to the ungrazed sides of the railway for nesting purposes, and therein they display their wisdom in more ways than one. Not only do they thereby avoid the risks of having their eggs trampled upon, but on the railway they are beyond the reach of those summer floods to which these hill streams are always so subject, and which are equally liable to overflow the shores of Bala Lake. It is owing to this fear of flooding that the nests in the valleys are often placed at quite long distances from the water's edge; sometimes on the banks of a lane-side fence, at others hidden away close to the roots of a field hedge. Many of the hedges here are, by the way, composed of *Spiræa salicifolia*, and have spread out to several yards in width. They cover a lot of ground, and form a very indifferent fence against stock of any kind, being freely traversed even by sheep; but against the storms of winter their massed canes do afford considerable shelter, and Partridges, and other ground-building birds, besides Sandpipers, find them convenient nesting places. Some of them, when in flower in June, are attractive objects to unaccustomed eyes.

The fearlessness of Sandpipers, when they have newly hatched young, is often remarkable. I have sometimes had both parents running about within a foot or two of me, and have had much cause to regret that a camera was not at hand to "snap" them. On more than one occasion I have convinced myself that, like the Woodcock, and probably

some others of the *Limicolæ*, the Sandpiper carries its young ones from the nest to more favourable feeding ground. Over and over again I have found newly hatched young, or a nest with chipping eggs, and on repassing the place, some hours later, have found the chicks transported to the stream, perhaps a hundred yards away or more, whither it was impossible that their own powers of locomotion could have brought them. I have never actually proved that the parents carried them, though the heavy flight of one has occasionally made me almost sure that it had a young one pressed to its breast ; but such things are often first noticed by accident, as it were ; and, when once known, everybody begins to see then, and to wonder how it is that he had never observed them before.

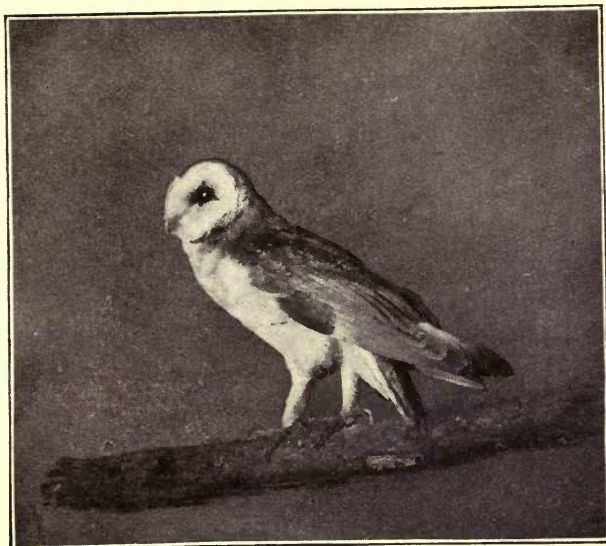
One very wet morning at Llanuwchllyn, I was within an ace of absolutely proving my long-held theory to be correct. It was the tameness of a Sandpiper that ran across the road, literally at my feet, that first attracted attention to the proximity of a nest, or young ; and, in order to watch her, I sat down upon a stone by the side of a field gate that happened to be at hand. As I did so, the male betrayed the whereabouts of the nest, on top of the earth dyke, by flitting off it within a few feet of my head. On looking into it, I found a single young one just emerged from the egg, portions of the shell still adhering to its yet moist and clammy sides. I was rather surprised to find only one occupant of the nest, into which the north wind was driving the rain in a most inhospitable manner that seriously threatened to flood it. Both of the old birds were now tripping about the road at my feet, complaining at my untimely intrusion on their domestic cares ; and, after I had resumed my seat, the female especially often perched upon the top rail of the gate, and ran swaying along it to within an absurdly close distance of my face. I had not sat many minutes before I became aware that the male was attempting to move a young one amongst the grass at the foot of the bank, while his partner showed great interest in a bunch of rushes on the other side of the road. The young one beside me was in such pitiable plight amongst the wet grass

that I lifted it back into the nest, and very soon the male had climbed, bobbing and swaying the while, up the bank, and settled himself upon it, upraising his lower feathers as he did so, so as to bring the chicks into closer contact with his warm breast. The female had meanwhile disappeared amongst her clump of rushes, so I got up and walked across to have a look at it. It was some time before I could see anything of her ; not, in fact, till I began to part the rushes with my stick. Then she tumbled out across my feet, and went fluttering down the road, feigning lameness. Careful search revealed a third chick, and this I carried over and put into the nest beside the other two, and resumed my seat on the stone. The same thing was then repeated ; the male quickly returned to the nest, and the female again vanished into the bunch of rushes. I walked across the road once more, but this time the female refused to be driven from her charge. I found her crouching under cover of the matted stems, her bright eyes intently fixed on mine, and as she did not move I picked her up in my hand. She scarcely struggled at all, and pressed closely to her breast, and held firmly there between her legs I saw she had the fourth chick. When she moved, the young one was dropped into my hand, and I vainly tried to get it into position again before allowing her to go. When released, she merely dropped at my feet, and went on feigning lameness as before, though she had been in my hands for two or three minutes. The chick was so weak that it could scarcely stand in the wet, so I placed it in the nest beside the others, sheltering the whole from the rain beneath a Butter-bur leaf, and watched the male contentedly resume his seat upon all four. Feeling that I had then intruded sufficiently upon them for the time, I withdrew, hoping to renew my acquaintance with them later, when perhaps the weather should have cleared up a little ; but on my return in the afternoon, the nest was deserted, and the whole family were discovered amongst the shingle by the side of the stream two hundred yards away. Quite apart from this second journey, I am sure that the two young ones could not have found their own way across the road, to the shelter of the

rushes, where I found them. The rain had converted the channels at either side of the lane into runnels, through which it was quite impossible for them to have waded, and the firm manner in which the female held the chick to her breast convinced me that she could easily have flown away with it.

During my walk that same day, I watched a Crow systematically hunting for a Sandpiper's nest, the near neighbourhood of which he had located. He was marching about, prying hither and thither, closely attended by the anxious birds, one of which I noticed more than once make a feint at lameness in order to draw his attention from the nest. This is the only occasion on which I ever remember to have seen such tactics resorted to by one bird to deceive another in that way, though, of course, it is a common device with many of them when trying to decoy a human intruder, or a dog, or even a cat or weasel, from their nest or young. I have no doubt the Crow would have persevered in his search until he had discovered the nest, had I not interrupted him. After he had been sent about his business I found the eggs, just on the point of hatching, lying snugly under cover of a tuft of heather, close at hand. Several times hereabouts I found Sandpipers' nests at the roots of whin bushes, where they were, comparatively, out of the reach of sheep's feet.

On another occasion I witnessed a Sandpiper's very narrow escape from the clutches of a small male Sparrow Hawk. I had been fishing, and having come into the neighbourhood of a nest, or young, I had sat down against some rocks, and was watching the anxious Sandpipers flitting about from stone to stone, by the water side, complaining of my presence so near their treasures. Suddenly I caught sight of the Hawk gliding like an arrow in our direction, from a tree on the steep bank a hundred yards away, and considerably above us. In a twinkling he had shot past me, with scarcely a movement of wings or tail, and had made a dash at one of the Sandpipers, which at that moment was balancing itself on a stone in mid-stream with deepish water all round. Completely taken by surprise, it did not



WHITE OWL.



SECONDARY FEATHERS FROM CUCKOO'S WING. (See page 168.)

observe the Hawk a moment too soon, and only saved itself by diving into the water. Just brushing the stone where its quarry had so lately sat, the Hawk followed the Sandpiper into the water, the force of its stoop sending a shower of spray in all directions, and all but submerging it. For a moment I thought it had actually seized its prey under water, and felt relieved when it scrambled, empty-footed, on to the stone, and shook out its wetted plumage. The next instant the Sandpiper appeared, swimming, beneath a willow bush at the side of the stream, and emerging from the water under its cover, flew off, piping loudly, as if assured of its safety now that it was upon the wing. The Hawk deigned to take no further notice of it, but, all unconscious of my near proximity, sat ruffling his wetted feathers for a short time, and then went off up the glen in search of some other prey. He had, as I knew, a family of three nearly fledged young ones to cater for, less than a quarter of a mile further up the stream, but yet I would have begrudged him a dinner off the Sandpiper. When I reached the nest, half an hour later, I found that he had already made good his loss by substituting Thrush for Piper, the yet warm, though half-devoured, remains of the victim resting beside his hungry brood.

The Sandpiper is a common bird over all the higher water-shed of the Dee, often following the streams far out into the mountains, and becoming one of the solitary angler's sole companions there. The summer long it flits, like another Ariel, before him, cheering his idle moments, and never failing to answer the click of his reel with a plaintive whistle. Its diet here consists largely of winged insects, and their larvæ; and often have I lingered to watch one tripping gracefully from stone to stone, securing a fly there, or anon balancing itself on some slight eminence here, to take stock of my movements. The head and neck are then scarcely still for a moment, and the tail is perpetually swaying up and down in the fashion so characteristic of the family. I have often wondered how this swaying motion can have originated. It is quite as pronounced in the tiny nestling—a mere puff of grey and white bespangled

down—as in the adult bird; but, except to add grace and extra beauty to its movements, it is difficult to imagine of what use it can be to the individual. It can hardly be doubted that it must have been acquired for some more useful purpose than to charm man's eye, and yet who can tell?

“Willy-wicket” and “summer-snipe” are names attaching to the Sandpiper in some of the adjoining counties of England; in Wales it is generally known as the *Pibydd-y-trath*. Perhaps I may be pardoned for concluding these remarks by quoting a wandering angler's song, that has at least the merit that it opens with an appreciation of his feathered friends, and of the Sandpiper amongst them.

THE ANGLER'S INVITATION.

The summer snipe has come again,
 And piping runs upon the gravel;
 The heather-bleats¹ have left the plain,
 And high above the moorlands travel.

The swallow skims upon the lake,
 The snow has left the distant mountain,
 And all the trout are on the take,
 In purling stream, and sparkling fountain.

The breeze is blowing from the west,
 Then get your lines and flies together,
 And bring the rod that you love best,
 And we'll away among the heather.

We'll leave the smoky town behind,
 And join the merry little dipper,
 And pleasures unalloyed we'll find,
 Where o'er the stones the waters lipper.

There let us fill our bulky creel
 With trout that take March-browns and Spinners,
 There country joys again we'll feel,
 That are denied to city sinners.

¹ Snipe.

An Angler's Invitation

175

And when the day is done, the Inn
Will give us welcome, and a bottle
Of sweeter wine than there's within
The far more grand and formal hotel!

There dainty Phyllis brings our beer,
In place of white-choked waiter, bless her!
And other answers we can hear,
Than the polite, eternal "Yes, sir!"

Then come, the sandpiper has flown,
On tackle no more time be wasting,
But let's be off at once, and own
That Nature still holds joys worth tasting.

CHAPTER XXII

Llangowr—Yew trees—Animals poisoned by yew—Stock Doves—Golden-crested Wrens—Some other warblers—Lime—Calcium—Ring Ouzels—Pipits—Butterflies.

ONE morning in early June I walked down the side of the lake to Llangowr, and afterwards climbed the rocky gorge by which the Gower here debouches from the mountain. About a mile above its estuary the stream bifurcates, and I followed the branch up past Rhyd-y-Wen to its source, afterwards walking along the watershed and returning by the other arm and the wood below Tynycfn. Llangowr is the church of Gwawr, the mother of Llywarch Hen, the warrior bard who is said to have been a member of the court of King Arthur, and to whom reference has already been made. There is a very fine ancient yew-tree in the churchyard, that measures more than twenty feet in circumference near the base of its trunk, and carries a wide and symmetrical head. The trunk is partly hollow, and is said once upon a time to have harboured a spirit. At the present day it is sometimes made use of by a White Owl as a nesting site.

To-day, Greenfinches were busily engaged in feeding upon its scarlet fruit, showing that, though they are readily enough eaten by Thrushes and other birds, they had not been greatly appreciated, or that the supply had been in excess of the demand. These finches eat only the pulp, and reject the "stone." Thrushes, on the other hand, swallow the whole fruit, and afterwards pass the stone without ill effect. Pheasants have often been reported to have been poisoned by eating the berry, it being believed that it is the seed and not the pulp that accounts for their deaths. In most cases of this kind, however,

some leaves have been found in the stomach with the fruit, and it is, at best, very uncertain from what the poisoning may arise, if indeed they be poisoned by yew at all. I have seen Squirrels eating the berries, apparently without ill effect, though in the case of wild animals it is difficult to make positive assertions of this kind. That sheep, cattle, and horses, are frequently poisoned by eating yew branches, is well known; but, on the other hand, it is equally certain that leaves and branches are often eaten by them with impunity, as witness the many trees, closely cropped, to be seen in almost any district.

Many theories have been advanced to account for these discrepancies, but the truth seems to be that we are yet as far as ever from an accurate understanding of the matter. Taxin, the active poison of the yew, has been proved by analysis to be present in every part of the tree (unless perhaps in the pulp that incloses the seed), but at times, or under certain conditions, it would appear to lose its deleterious effect. What these conditions are we do not know, and it is well, therefore, to treat the tree at all times with respect; but this much at least seems certain, that the leaves and shoots are at times very poisonous, at others less so, and sometimes, perhaps, not at all. The pulp surrounding the fruit would appear to be harmless to birds and other animals. Whether the inclosed seed may be regarded as equally innocuous is still open to doubt. Those in search of further information will find it in such works as Dr Lowe's *Yew Trees of Great Britain*, Cornevin's *Poisonous Plants*, and Bentley and Trimen's *Medicinal Plants*. Much has also appeared, from time to time, on the subject, in the pages of *The Lancet*, *The British Medical Journal*, and *The Field*; but the gist of the matter is, I think, set forth above. Loudon records that "in the mountains of Hanover and Hesse the peasants feed their cattle in part with the branches of the yew during the winter. They know its poisonous qualities, and, though they reckon it good food, they are aware that great precaution is necessary in using it, without which they run the risk of losing their cattle; consequently, they give

them at first a very little, mixed with other forage ; afterwards they gradually augment the quantity, until at last they can give them the leaves of the yew alone without any danger." From this it would appear that the poison is passed off, and is not of a cumulative nature. I may just add that most cases of cattle being poisoned by eating yew, that have come under my observation, have been in spring or early summer.

All the old churchyards hereabouts boast one or more large yew trees, frequently many, as at Llan-y-cil, on the opposite side of the lake, reminiscent, perhaps, of times when Welsh archers were without rival in warfare, for it was the *Yw*, as it is spelt in Cymrie, that supplied their bows. Many enactments were from time to time made for the proper preservation and planting of the tree, and it is doubtless to some of these that we are indebted for some of the oldest yews now met with in churchyards.

Several pairs of Stock Doves (sometimes distinguished from the wood-pigeon as *Colomen hengoed*) nest round about Llangowr ; and in the wood above the rabbit warren a Golden-crested Wren was watched carrying food to its young in a nest skilfully stitched to the pendulous branchlets of a silver fir. The twitter of young Goldcrests must, surely, be one of the thinnest notes known. Yet, quite inaudible though it was to my ears, unless I stood very close to the nest, it seemed to reach those of the parent bird at the apparently impossible distances of five or ten yards. The only note known to me at all comparable to it in lack of volume is the lowest chirrup of a Shrew in the grass, but even that is not pitched so high as a young Golden-crested Wren's small voice. The Gold-crest is the *Dryw peneuryn*, or *Breninog*, of the better informed Welshman ; but by the ordinary inhabitant of those parts most small birds are quite disregarded, and any distinguishing names for them altogether unknown. Wood Wrens (*Telor-y-coed*) and Willow Warblers (*Dryw-yr-helyg*) are both numerous here ; and in the bramble tangles on the railway side, and in similar places, the Garden Warbler

(*Telor-yr-ardd*, or *Y-ffigysog*) is not infrequent. The Black-cap Warbler (*Telor penddu*) is seldom distinguished from the last, their notes being very similar; it is always less numerous, but still not at all rare in sequestered spots, and in autumn is attracted to the village gardens to feast on red and black currants.

The Chiffchaff was so conspicuous by its absence round Llanuwchllyn that I never saw it except once, and that was during about a week or ten days subsequent to the 5th September, when one or two of them appeared amongst the trees in the village, and sang there lustily during their brief stay. Though it was not seen in any of my wanderings, however, it seems probable that it must nest somewhere not very far off; it is known in other parts of Wales as *Y telor-bach*, and is not uncommon in some localities. Had nests and eggs been taken as any guide, it might have been reckoned pretty numerous here, for the dark-brown-spotted, Chiffchaff variety, of the Willow Wren's egg was of rather frequent occurrence in the Dee valley; and some of the nests belonging to that bird which I saw might, from their situation, easily have passed as typical Chiffchaffs' nests.

I saw a beautiful hanging nest of the Hedge Sparrow (or *Llwyd-y-berth*) to-day attached to the slender trailers of a honeysuckle that draped an overhanging rock. This bird—I always prefer to think of it as the "Shuffle-wing," from its well-known actions as it frequents the garden and comes to the back door to see the dishes washed—seems to have a decided liking for suspending its nest in this way, as though it dreaded the attack of some creeping enemy. Not unlikely it is the Field Mouse that it mostly fears; for in a roadside hedge of dead thorn, etc., no nest is more commonly to be seen occupied by that animal. Often the nest may only be made use of by a mouse in autumn, after its real owners have flown, as a convenient seat to which hips and haws may be brought to be discussed at leisure; but when it contains eggs, such variations in the mouse's menu are always welcome. At other times I have seen the Shuffle-wing's nest attached to the hanging shoots

of ivy, or to the roots of a tree pendulous from an overhanging bank.

It is not often, perhaps, that the schoolboy, when regarding the turquoise gems which he has rifled from such a nest, pauses to consider that their blue shells are, in chemical composition, almost identical with the grey limestone he is treading under foot, or with the black, or white, bone, or ivory, haft of his pocket-knife. Nay, more, that his sister's mother-of-pearl brooch, or even a pearl itself, or the lump of red coral which adorns the mantelpiece at home, as well as the marble of which the mantelpiece is made, are composed of one and the same substance, namely, carbonate of lime, with the addition of a little magnesia, phosphates, or other matter. Yet the more often such facts are impressed upon him the better, and it is in the hope that some youthful reader may peruse these lines that I recall them here. The same subtle agencies that are ever at work within our own bodies, extracting calcium from the air we breathe and from the food and water we consume, in order to build up our own bony skeleton, are as actively engaged in the snail, or the bird, in secreting the substance that goes to form their shells. Just as assiduously do the coral animalculæ collect calcium from the water of the ocean, and, leaving it in their minute skeletons, in the course of ages build up the coral reef that in time supports an island, and becomes inhabited by plants, insects, reptiles, birds,¹ and in time,

¹ Plants undoubtedly preceded animals in the first colonisation of the Earth, plants being the producers and animals the consumers; the former, only, having the power to convert into organic matter the primitive elements contained in rocks or soil, and all the higher animals deriving their sustenance either directly from plants or indirectly by preying upon other creatures whose tissues have already been built up from vegetable food; but it must not on that account be too hastily assumed that the occupation of all new territory necessarily follows in the order here set down. In many cases it is known that it is not so, birds being frequently, perhaps generally, the first arrivals. In describing some of the islands of the Atlantic, where no plant—not even a lichen—was to be found, and where the only terrestrial animals were sea-birds, and a few insects which lived either upon them, their feathers, or their dung, and spiders which preyed upon the latter, Darwin wrote: "The often repeated description of the stately palm and other noble tropical plants, then birds, and lastly man, taking possession of the coral islets as soon as formed, is probably not quite correct; I fear it destroys the poetry of this

perhaps, by man himself. For the information of young people it may likewise be stated that calcium, although one of the most common elements in our earth's composition, and the metallic basis of all lime, can never be found in nature, in its simple or unalloyed state. After having been laboriously collected by the chemist, it at once combines with oxygen and disappears again, on being brought into contact with the atmosphere. In other words, it "evaporates," and it is chiefly in the form of lime (the oxide of calcium) that we become acquainted with it.

Out on the moor, birds were numerous, and five or six nests of the Ring Ouzel, each containing eggs, were discovered. Three of these were amongst heather on the bank formed by the cutting of the rough cart road through the peat and stones : in just such situations, one would have supposed, as were most likely to be discovered by children on their way to and from school, yet from two of them broods were eventually safely brought off. In each case the female betrayed her nest by flying from it at our approach. It is very curious why Ring Ouzels, and some other birds, will persist in making their nests alongside a road, even though other sites—quite as good to human eyes—may abound further from the paths of man. A good many Blackbirds and Thrushes, particularly the former, also breed about the lower margins of the moors ; but their nests, when not in a bush, are more generally at a distance from the more frequented tracks. Can it be that their greater experience of man has taught them that children are not always to be trusted, while the migratory Ring Ouzel has not yet learned that lesson? On the banks of a stream they nest freely, building on a heathery or grassy ledge, just as a Ring Ouzel would do. A yet more favoured site is in a crevice in some of the many dry-stone walls dividing the fields from the moors, or in the bank often associated with them. One Ring Ouzel's nest was found in such a wall to-day ; but, as a rule, they are not

story, that feather and dirt-feeding, and parasitic insects and spiders, should be the first inhabitants of newly formed oceanic land."—*Journal of Researches during the Voyage of the "Beagle."*

partial to such artificial structures, but always prefer a natural bank. A yet more unexpected site for a Ring Ouzel's nest was on the turf wall in the *inside* of a shooting hut, far out on the moor. The eggs in this nest would certainly have been set down as Blackbirds' had the bird not been sitting upon them when found, and made haste to escape by the open entrance to the hut as we entered it. They were of the common dull Blackbird type, freckled rather than spotted with numerous small dots, and quite without the rich brown blotches, and intervening patches of bluey-green ground colour, that usually characterise Ring Ouzels' eggs. Otherwise, the Ouzels' eggs seen in Wales were generally of normal type, some of them being very pretty and well-marked specimens. One nest was characteristically interwoven with a good deal of that true moor-land plant, the "Stag's-horn moss," *Lycopodium clavatum*.

Tree Pipits ascend the valleys as far as trees or bushes go, after which they are replaced by the true Moor Pipit (*Anthus pratensis*). On the lower ground the two species are freely intermingled, *A. trivialis* being, generally, most numerous. In the eggs of the latter, my experience, both here and in other places, has been that in open situations the red type prevailed, while in woodland nests the streaked variety was more liable to be found. Probably it is nothing more than a coincidence, but yet, perhaps, worth recording for the benefit of anyone specially interested in such matters. In this part of Wales, nests in open situations, as on the railway sides, far outnumber those to be found in woods; and the streaked, or Black-cap type of egg, was comparatively uncommon.

Throughout the day, Painted-lady Butterflies were flitting over the higher parts of the hills, never except singly, though half a dozen might be in sight at the same time, but all steadily pursuing one direction of the compass, viz. due South. While we sat for half an hour on one hill-top, I counted fifty-eight that passed us near enough to be identified with certainty, and that may be taken as approximately the rate of numbers kept up during at least six or

seven hours. The day was very fine, with a hot sun, and a very slight breeze blowing from the West. In one place I watched a Merlin catch two or three of the passing butterflies. A few Emperor Moths and Oak Eggers were also upon the wing ; but these, of course, are native to the moors, while the Painted-ladies are not.

CHAPTER XXIII

Crows—A many-wintered Crow—Crows and Grouse—Effect of persecution on Crows—Habits of—Usefulness of.

NEAR Fedo, I was shown the site of a nest from which the keeper had shot a Crow that had nearly the whole of both wings white. It had nested there, the farmer said, to his knowledge, for more than forty years, and was such a favourite with him that he "would rather have lost all his ducks and chickens than had it killed. It had brought him luck in many ventures, but now he could not tell how things might go," and warmly did the old man curse the keeper's interference! It was, no doubt, a pity that such an old and "many wintered crow" should have been killed, especially one distinguished as it was by its white feathers, yet it cannot be denied that, from his point of view, the keeper had right on his side; for there does not exist upon a moor a greater enemy to Grouse than the "Corby." In cunning, and intelligence, it almost equals the Raven, and in its fondness for eggs, and its capacity to find them, it far exceeds it; while it will without hesitation attack a pair of Grouse, and generally succeed in carrying off one or more of their brood despite any resistance they may offer. It will return again and again to the charge, though as often beaten off by an enraged parent, or disturbed by human presence. In fact, it is its persistence, and what may be called its "thoughtfulness" in attack, that makes it such a formidable foe to the game preserver. Occasionally it may forfeit its life to the defenders of the nest, or brood, attacked, rather than desist from the attempted theft; but its weapons of offence and defence so greatly exceed in effectiveness

those of its victims, that cases of this kind, though from time to time reported, must be very rare. I once knew a Crow to be dragged into the water and drowned by a tame duck in defence of her young ; but a Grouse, or even a pair of them, are no match, either in strength or cunning, for an old crow. Twice in the same season, on these Welsh moors, I saw a Crow make determined attacks on a brood of young Grouse. On each occasion both parents made a plucky defence ; but, as just remarked, a Grouse has no skill in generalship to make it the equal of a Crow, and in the absence of outside interference the result is a foregone conclusion. In one case I actually saw a chick carried off, and the like result would undoubtedly have happened in the other, but for the timely arrival of a keeper upon the scene. In each case very similar tactics were pursued. The Crow, in beating over the heather, discovered the young Grouse, and lowering its flight, sailed close over them. Each of the old Grouse uttered notes of alarm, while the cock jumped up in the direction of the intruder, just as an angry cock Partridge may often be seen to do at a passing Lapwing. The Crow settled a few yards off, and the cock instantly ran at him with considerable bluster. The Crow flew a few steps further followed by the Grouse, running. The hen, meanwhile, was calling her brood to shelter ; and presently, when the cock again charged him, the Crow made a dash at her. Great commotion followed ; both Grouse, screaming angrily, jumping and running at him, the brood in the meantime being considerably scattered. The Crow retreated as before, now followed by both birds, and having drawn them a little distance away from the young ones, suddenly flew at the latter and bore one off in his bill. Perhaps the feints may sometimes be a little more prolonged, but the tactics adopted are always the same. The Crow seems to understand that time is on his side, and never to be in the least flustered. Perhaps he rather enjoys the sport ; I have heard him give vent to a harsh "craw" or two, but generally he has the sense to keep silent, and no doubt he has always a weather eye wide

open to guard against surprise by "Sandy" or "Mr Jones"!

On the moors immediately round Llanuwchllyn, Crows are well looked after, and have but a sorry time of it; but they are numerous in many adjoining districts, and the places of those trapped, or shot here, are soon taken by others. As I was passing one place, not many miles away, one day, I stopped on the road to look at a man busy feeding his young pheasants, of which there were, I suppose, upwards of twenty coops in the field. It may perhaps have been a coincidence that so many Crows happened to be present together, and it might suggest exaggeration were I to mention the exact number actually in sight at one time, so I will content myself with the modest assertion that more than two pairs of Corbies were mobbing a female Sparrow Hawk in the trees bordering the field, while a dozen Jackdaws were sitting about the coops! Yet that same keeper had proudly nailed to his rail a Buzzard and several young Ravens, to acquire which, ere the arduous duties of pheasant rearing claimed his attention, had cost him more than one long tramp over the mountain! A Scotchman, living on a neighbouring estate, and who knew too well, from his own experience, the shortcomings of his brother across the boundary, fairly tingled with indignation when I related my tale to him a few days later. And, what was perhaps more to the purpose, he made a raid over the march very early one morning, and returned triumphant, and partly mollified, with nine young Crows in his bag, to decorate *his* rail, the produce of two nests in a wooded dingle, several miles beyond the confines of his ground, and where he had, of course, as little business to be found as his victims.

The persecution the Crow meets with in game preserving districts has had the curious effect of driving it for protection to some of the most thickly populated parts of the country. Even in some of the London parks it is not unknown (and it could, of course, scarcely choose a safer nesting place), and I have seen its nests in the villa gardens of several other large towns. In such places Rooks and Crows are often



WATER HEN'S NEST.



SANDPIPER'S NEST ON A RAILWAY BANK.

but vaguely differentiated, and there is an old proverb which makes it lucky to have "crows" come and build in trees one has oneself planted. Hence Crows' nests are often welcomed near a house, and it is remarkable how quick the birds are to recognise their changed circumstances, and to throw off their long acquired shyness. I have seen a Carrion Crow fearlessly feeding her brood within ten yards of the drawing-room window of a suburban villa, the proud owner of which, by the way, steadfastly maintained that the birds were Rooks. The nest was built near the top of a stiff and formal *Picea nobilis*, rather an interesting, because so unusual, site for so large a nest.

Crows frequently, too, find safety by hiding their otherwise conspicuous nest in or about a rookery, where, to distinguish it from those of the more legitimate occupiers of the wood, is often a matter of no small difficulty. It has frequently been stated in print that the presence of a pair of Crows in such circumstances means disaster to the rookery, but I can only think that such statements are the result of imperfect observation. "Hawks don't pick out hawks' een," is a proverb which must not, perhaps, be taken too literally; but there are several rookeries known to me in which a pair of Crows have had their dwelling for many years without ill effect upon the Rooks, or ill-will borne on either side; and similar instances of good-fellowship are common enough throughout the country to convince anyone, except the faddist, or the sceptic, on what slender foundation the accusation hangs. Occasional rogues are, doubtless, to be found in every family; but we need not, on that account, condemn the whole tribe. Much more improbable looking interlopers than Crows are sometimes tolerated in a rookery. I have known a pair of Kestrels to occupy, regularly, an old Rook's nest, in the very centre of an ancient rookery many hundreds of nests strong; and have known, as long as I can remember, another case in which a brood of Brown Owls have been annually reared in precisely similar circumstances. Neither the hawks nor the owls disturb their sable neighbours; but, what is much more interesting, the Rooks never interfere with them, nor resent

their presence in any way. And, it may just be added, the owl usually sits on a quite unprotected nest, in full view of any passing Rook, and sometimes within a few feet of an occupied rook's nest.

The fact is that Crows are really much more inclined to sociable habits, by nature, than we are often disposed to admit. They cannot strictly, perhaps, be said to be gregarious during the breeding season, one couple generally resenting the too close approach of another; but, where suitable trees were rather scarce, I have seen as many as a dozen nests, all containing either eggs or young, congregated together in a not very large plantation. In one case there was a Crow sitting upon eggs in one tree, while in a nest of the previous year in an adjoining one were recently hatched Brown Owls. In some of the higher glens of Merionethshire, where a few scattered alders, or mountain ashes, are the sole remains of the ancient forest, every tree may be seen occupied by a Crow's nest, and to such a spot I have seen as many as ten Crows return *in company* on a May evening.

Although sometimes compelled by circumstances to build its nest upon a rock (it has even been known to do so upon the level ground where better accommodation was not available), a Crow seems always greatly to prefer a tree, if it can get one. In Wales this seems to be even more markedly so than in North Britain. No matter how tempting the cliff may appear, in our eyes, so long as there is any kind of a tree, or bush, near it, the attractions of the rock are generally quite lost upon the Crow. Very often the bush may be only a stunted thorn, or mountain ash, a mere apology for a tree, not exceeding five or ten feet in height, and growing upon so steep a bank that the nest can be easily looked into, and almost touched, by walking up a few yards; but no matter, the Crow seems to think it offers a safer site for its treasure than the beetling cliff above. Conduct like this seems the more inexplicable when, as usually happens, the crows are found to *roost* upon the rock and not upon the "trees," even in summer.

In winter, in such situations, a party of Crows may some-

times be found resorting to the rock, for roosting purposes, in contiguity to a party of Ravens. I use the word advisedly, for to say that they roosted "in company" might be objected to as a terminological inexactitude. One ledge, or one part of the rock, will always be occupied by the Crows, another by the Ravens; the latter, of course, having first choice of position, and each being subject to slight temporary alteration to meet the particular state of the weather. It is just the same where Crows, and other Corvidæ, congregate with the Rooks to share roosting quarters in a rookery. Each species will occupy its own particular station. The Crows, or the Jackdaws, or the Magpies, may each be surrounded by the more numerous Rooks, but they will always be found assembled in their own little coteries. The identical trees may scarcely be fixed upon two nights in succession; but the numbers of the party will remain substantially the same throughout the season, unless thinned by the keeper's gun, or his far more deadly gins, and poisoned baits.

Where the preservation of game is not the sole object of life, few birds will better repay a close study of their habits than the Crow. Its intelligence is remarkable, and scarcely rivalled even by that of its relative, the Raven. Æsop's fable of the crow, which, through vanity, was induced by the fox to drop its bit of cheese, was certainly a gross libel if it were intended to apply to *Corvus corone*; or perhaps the bird has made advances in education since those days! Not only is the Crow most careful not to drop the food which it has carried to a tree, but it may be seen most ingeniously balancing it upon a branch, and shifting its position until a secure station has been attained. Furthermore, it seems to understand precisely how high a dog can jump, or how far his chain will reach, for I have watched one quietly discussing a stolen bone, within a few feet of the enraged former owner, and utterly oblivious to all his barking. A tame Crow will, also, sometimes lead cat, or poultry, a sorry life. Except to the gamekeeper during summer, crows are by no means to be regarded as useless, or altogether harmful birds. Although hardly refusing any sort of

food, under stress of circumstances, they will scarcely touch grain so long as better is to be had, and for the greater part of the year are nearly as assiduous as Rooks in hunting out and destroying beetles, earwigs, wire-worms, and a variety of other grubs, all of which are more or less inimical to the agriculturist.

CHAPTER XXIV

Crows—Confusion of names—The Crow family—Choughs—Daws and Rooks—Lessons of a Rookery—Starlings—Grubs—Lucky birds.

THROUGHOUT the British Isles the name of "Crow" is so indifferently applied to Rooks and the true Crows as frequently to give rise to no inconsiderable amount of confusion, many people knowing no distinction between one bird and the other; but this is as nothing to the indiscriminate use of the Welsh equivalent for crow, namely, *Bran* or *Fran*. It would be difficult to find elsewhere anything approaching in vagueness the use of this word in Merionethshire, where almost any fairly large bird of a darkish colour that flies is so designated. Even when the prefixes *Cig*, *Cog*, *Craig*, *Crug*, or *Yd*, are made use of, they are so loosely applied that he who runs may read the uncertainty pervading the mind of the user as to their appropriateness; and very few people one meets in the country are able to point out any distinctive feature between Rooks, Crows, Ravens, or Jackdaws, or to identify the birds correctly when they see them either alive or dead.

When correctly applied, *Craig-fran* (referring to its usual haunts), or *Crug-fran* (to its well-known croak, from *cru*, hoarse), is the proper name of the Raven. *Cig-fran* (*cig*, flesh) is the Carrion Crow, other names in occasional use being *Breuan*, *Brangrawciad*, and *Caniad*. The Hooded Crow hardly occurs here at all, and was unknown to anyone I talked with, except one keeper, who had only seen one once during several years' residence. The Rook, our "homely old corn crow," naturally becomes *Yd-fran*, or sometimes *Bran lligwen*; a rookery being *Nytha ydfrain*. The Jackdaw is *Cog-fran*, *Cawci*, or *Bran tyddyn*, in compli-

ment to the friendly manner in which it takes up its abode in houses, blocking up chimneys, or any other convenient crevice, with the mass of sticks it is so fond of collecting together as a nest, often to the great inconvenience of the rightful occupant of the dwelling. The Magpie is *Pioden*, or *Piogen*, often merely *Pi*. The Chough most usually shares with the Daw the names of *Cog fran*, sometimes rendered *Coeg fran*, and *Cawci*. In some places it is called *Palores*, or *Pulores*; but though a few pairs breed on the coast, it is very rarely seen inland here. In 1906, I saw a clutch of eggs, together with one of the parent birds, which were said to have been obtained near Llangollen; where Montagu, a hundred years ago, recorded that a pair had bred for many years previously on the ruins of the old castle. If it still breeds there, it is at any rate scarce, and it seems a thousand pities that so rare a bird should be molested in one of its few remaining nesting stations in Britain. In some parts of South Wales it still maintains a footing.

The decrease of the Chough all over the country has often coincided with a marked increase in the number of Jackdaws, and by some people this has been looked upon as cause and effect. Shakespeare's allusion to the "russet-pated choughs" in *Midsummer Night's Dream* (Act III. Sc. ii.) is so often commented upon, and referred to the jackdaw, "because the head of the chough is quite black," that a quotation from Professor Newton's note, in the fourth edition of *Yarrell*, may be interesting to those who have not read it: he says—"The meaning of this epithet has given rise to much ingenious discussion; but the late Mr E. T. Bennett, in 1835, doubtless supplied its true explanation, when he suggested (*Zool. Jour.*, v. p. 496) that the correct reading is 'russet-patted,' i.e. 'red-footed' (*patte* being a known equivalent of foot), and this view has been adopted by Mr Aldis Wright in his recent edition of the play (*Clarendon Press Series*, pp. 30, 112)." "Others maintain that russet did not necessarily mean red, but was frequently used for grey, and accordingly that the Daw with its grey head was intended."¹ Against the latter argument

¹ Newton's *Dictionary of Birds*, p. 88.

there is the undoubted derivation of the word from *russus*, red; the fact that pate means head, or the crown of the head, while it is only the nape, or back of the neck, that is grey in the jackdaw; and the marvellous accuracy of description displayed by Shakespeare, generally, to be taken into account.

The red legs and bill (from the latter it has been supposed that Camden's reference to it, in 1586, as an incendiary that sometimes ill requited the shelter it received in human habitations, "for oftentimes it secretly conveyeth fire sticks, setting their houses a-fire," may have arisen) are the most prominent distinctive marks of the Chough. Its characteristic cry of *chough-chough*, and the more metallic ring of its voice, generally, though otherwise somewhat resembling that of the Jackdaw, also quickly arrest the attentive ear; while in flight its wings appear relatively much larger than those of that bird. A person who claimed to have a special acquaintance with the bird in North Wales informed me that he could recognise almost with certainty a cliff inhabited by Choughs from the castings left about the top of the rock, and which, he said, always contained numerous fragments of beetles.

Jackdaws are not very numerous in the immediate neighbourhood of Llanuwchllyn, in the breeding season, being better looked after by the gamekeepers than is generally the case elsewhere. During winter, a large number assemble with the Rooks, to roost at the rookery below Glan Llyn, where I spent several evenings with the keeper, in December and January, his chief object being to shoot some of the Crows, which likewise resort thither to sleep with the Rooks. Indeed, the idea that safety is to be found in numbers was not shared by the Crows alone, for a few Magpies, and two or three Jays, probably all that were in residence in the neighbourhood at the time, also roosted there, as did likewise a Sparrow-Hawk, besides a number of Wood Pigeons, Stock Doves, Fieldfares, Redwings, and the usual complement of small birds. It was most interesting watching the arrival and behaviour of the different birds. Those which carried no premium on their heads dropped in

carelessly, and often noisily, at any time after the middle of the afternoon ; the Crows arrived in pairs, generally rather late, and, warned by previous experience, assembled at distant points of vantage, sometimes away on the other side of the lake, whence they called to, and answered one another, till dusk and the already settled Rooks seemed to bespeak safety. They then discounted all their previous prudence by an excess of caution that cost more than two or three of them their lives. Had they joined the Rooks and, coming in with them, kept silence, it would have been exceedingly difficult to distinguish them in the crowd ; but, in place of doing that, they always came by themselves, and not content with the scouting already done by the Rooks, must needs take a few turns round and over the trees, advertising their presence by their raucous cries, and thus giving their hidden foe just the opportunity for which he was waiting.

The Jays crept into some dark fir top, or holly bush, with the stealth that always characterises their summer movements, and were never heard, and seldom seen, unless when they chanced to be accidentally disturbed. The Magpies were almost as cautious in entering the wood, and displayed even greater dexterity than the Jays in escaping on the other side of a tree, or branch, if compelled to leave it. But of all the visitors, none turned his talents to better account than the Hawk, which, though he (it was an adult male) probably roosted there every night throughout the winter, never offered even the ghost of a chance to the gun. On a still night his arrival on the outskirts of the wood was generally announced by the silence that, of a sudden, fell on the noisy small birds, or the warning call of a Chaffinch, always one of the most certain indications of the presence of a Sparrow-Hawk ; but he never very closely approached his lodging till the light had faded considerably. He then came with the directness of an arrow, and on such silent wing, that he was scarcely more visible than a vague grey shadow flickering through the trees. He always roosted somewhere near the same spot, but apparently never two nights consecutively on the same tree ; though the perch for which he was making seemed to have been definitely

fixed upon beforehand, since he glided straight to it, and pitched up into the tree, from the cover of the brushwood below, with the same suddenness that characterised all his movements. Settling directly on the chosen branch, generally against the trunk of a not very thick tree, he became at once as motionless as a statue, unless his suspicions were aroused, when he instantly vanished in the same shadowy fashion in which he had come. When alone, I witnessed his arrival more than once ; but though the keeper several times lay in wait for him, I do not think so much as a single cartridge was ever expended upon him.

The Rooks and Daws flocked together as is their wont, but one tree-top was generally exclusively occupied by one species, the adjoining one, perhaps, by the other ; the trees most favoured being thin larches, considerably below the level of the adjacent oaks. Most of the Jackdaws slept in pairs, often sitting side by side touching one another. When, disturbed by an occasional shot, they and the Rooks had been kept out of their favourite trees till darkness had almost, or quite set in, they assembled in noisy crowds in adjoining parts of the wood, or circled about overhead, until it was too dark to see them, and then came pouring into their accustomed places in the most headlong manner, fluttering against the invisible branches in a way that showed a determination to reach home for the night in spite of all risks. On one such occasion, when they had settled to wait in a field adjoining the road leading from the wood, and rose in a black mass as the keeper passed, a double shot was fired "into the brown of them," and next morning fourteen or fifteen dead Daws, besides several Rooks, were picked up. By an unlucky accident for them, the Jackdaws had evidently occupied that portion of the flock in which the shots had taken effect.

Pheasants do not seem to mind the near company of Rooks, often exhibiting an apparent preference for roosting in a rookery, but they will not put up with the intolerable mess made by a crowd of Starlings ; nor can one wonder at it. Our olfactory organs are not slow in apprising us of the fact that a wood is occupied by Rooks, and Daws leave

a still more pronounced aroma behind them ; but when Starlings have seriously taken to roosting in a covert, the pollution becomes so bad that nothing else will remain in it. It is no exaggeration to say that I have seen the ground beneath the trees, in which a flock of Starlings had established themselves, covered an inch or more deep with their droppings, while the flat branches of the spruces in which they roosted carried a corresponding load of filth. When a crowd like this takes possession of a game covert, much of the undergrowth is often killed outright, and it becomes a very serious business for the keeper, as no amount of shooting will drive them away, nor has it any appreciable effect in reducing their numbers. They return again and again to the same spot, until its condition has become so unsanitary as to be unbearable even for a Starling, and then often only betake themselves to another part of the wood to repeat the offence. One consequence of such an occupation of a wood is sometimes seen, a year or two later, in a thick crop of young elders springing up from the seeds that the Starlings have discarded ; a legacy often regarded as a curse second only to the visitation of the birds, for, as underwood, the elder is almost valueless.

Laurels, rhododendrons, and other shrubs, are frequently much broken and disfigured by the disorderly crowding of Starlings roosting upon them. When the flock first alight, their droppings descend like a shower of rain, the continual pitter-patter on the leaves below being almost sufficient to deaden the twittering on the tree-tops above. One result of this mulching of the soil is to stimulate the growth of *Holcus mollis* and some of the coarser grasses. Its effect upon other herbage has perhaps scarcely received the attention it deserves.

The ceaseless activity of the Starling might very well justify its being included with the ant, and the bee, as an example of industry. It is never idle. Whether running over the grass in search of food, or twittering from the house-top, it seems always to appreciate the value of time, and to be determined not to lose a moment. Against such a bird, so attractive in its habits, so engaging from the con-



CROW'S NEST IN MOUNTAIN ASH.



A KEEPER'S VICTIM.

fidence it reposes in man, it is a graceless office to raise a word of doubt ; and yet, apart from the depredations it commits in fruit-growing districts, there can be little doubt that, if the increase in its numbers goes on unchecked, as it has done for the past thirty or forty years, it must shortly become a factor to be reckoned with by the agriculturist. Primarily its food consists of worms and grubs ; but failing these, it is almost omnivorous, and already it is known to consume a very considerable quantity of grain at harvest time. That this is so in certain corn-growing districts, I can speak from personal knowledge ; and if the taste develops, as it probably will do, the farmers of the next generation may be crying out to be saved from yet another of their friends.

The larvæ of the *Tipulidæ* are, at once, amongst the most destructive of insects to a large number of cultivated plants, and a favourite food of Starlings ; and the number of these which a single pair of Starlings will carry to their young, in the course of a day, is simply marvellous. But if that number be multiplied by the hundreds, or thousands, as the case may be, of Starlings known to inhabit a given area, the question of supply and demand at once becomes pertinent. How fruitful insects are (especially the injurious ones), we can all form some idea ; but Starlings are not their only natural enemies, nor the only ones that have shown marked increase within recent years, while draining, liming, and various other agricultural operations do not tend towards their well-being. The questions arising are, therefore, something like the following : If with all these things operating against them, and the army of Starlings still multiplying, the insects are yet able to hold their own, however came it that our grandfathers were able to grow any crops at all ? Or, secondly, will not Nature some day turn the energies of her superfluous army into some other channel, before the war has been waged to extermination against her insect hosts, and what will the birds then take to feeding upon ? Perhaps the practical answer to these questions may be that sufficient to the day is the evil thereof ; but it is the conviction of some observant people that the day of

the Starling's exclusive usefulness is already past, or is quickly passing, and with that opinion the writer feels impelled, however reluctantly, to identify himself.

In Wales, as in England, the number of Starlings in different localities varies greatly: round Llanuwchllyn the bird is never very numerous at any season, while in not far distant valleys just the reverse is the case. Here it is a general favourite, commonly known by the names of *Drudwy*, or *Drudwen*, and to have it nesting in the roof is considered lucky.¹ Odd pairs may be met with occupying hollow alders, or the lower ranges of rocks, far up some of the glens; but, like the sparrow, it always shows a decided preference for human society, and these may be looked upon as stragglers who have been crowded out of more desirable nesting sites. Nests have been recorded in almost every possible kind of situation, sometimes even built in the branches of a tree or bush, open to the sky; I have seen a pair occupying a Sand Martin's hole in a bank amongst a colony of these birds; and as if to emphasise the occasional contrary ways of Nature, a pair of the Martins had their nest in a crevice in the masonry of an adjacent wall.

¹ Whence the couplet—

“Swallows and Starlings build under honest eaves,
But where the Jackdaw nests the house harbours thieves.”

CHAPTER XXV

Hérons—Recognising a distant friend—Habits of Herons—Food—"The Heron never dies."

To return to the rookery for a moment, however, an occasional Heron nests here. In 1906 I saw a nest from which a brood were successfully reared, in a young larch tree, not above twenty feet from the ground, and surrounded by Rooks' nests on every side. The nest had perhaps been founded upon an old Rook's nest, and was a large collection of sticks, looking more bulky than usual in the slim tree. It was not, as is generally the case with Herons' nests, at the top of the tree, with an uninterrupted entrance from above, but had to be approached laterally through the intervening branches, and was the only Heron's nest so situated I ever remember seeing. There are generally one or two Herons' nests on the trees by the side of the lake, a flat-topped pine being the favourite site; and the angler, pursuing his avocation up any of the mountain streams, will occasionally meet with a solitary bird standing sentinel over a quiet pool, or dozing in some accustomed resting place, at once the embodiment of alertness and sleepy disregard of all but his own digestion. Very few birds make more for the picturesque than a Heron in such situations; and though he may rob us of a few trout, it should not be forgotten, by those who are disposed to regard him as a poacher, that he takes them all by fair fishing—by the triumph of his own skill and patience over their cunning,—and that he swallows, besides, many eels, rats, frogs, and other unconsidered trifles.

Hérons do not come to roost at the rookery, towards nightfall and dawn being the usual periods of their greatest

activity ; and that they are abroad even during the hours of darkness is amply attested by many a country swain, who, in other counties besides Merionethshire, has often been startled by the scream of witch, or cythrawl, as he wended his way homewards late in the evening. *Cregyr*, and *Crechydd*, common Welsh names for the bird, both denote a screamer ; but the designation always in use at Llanuwchllyn is *Crëyr glas*, recalling the Gaelic *Chorra-ghlas* ; and when a native wishes to display his knowledge of English he speaks of the bird as a "Grey Crane." There was a story current of one young farmer in the neighbourhood, who arrived home late, with a discoloured eye to corroborate his tale of an encounter he had had with a *Gwrachydd-y-rhybin*¹ at a certain ford, and who attributed his escape only to his having turned back and taken a circuitous route over the hill. The curious part of the story was that his dog, which had already crossed the stream, was found "dead and swollen" in the water next morning. The explanation, or the sequel to the tale (if it had one) I did not hear ; but my informant had evidently no doubts about the *Spirit* in the case, for, with a shrug of the shoulders, he summed the matter up as "Two mens, one girl, some goat's² milk, and a poison, I think" !

As an instance of the keen sight of the Heron, and the faculty birds possess of recognising a friend at an almost incredible distance, the following may be of interest : I was one morning, in April, watching a Heron quietly winging its way over the village, at no great height, when it abruptly altered its course, began to call at frequent intervals, and to circle upwards in a narrow spiral with apparently all the haste it could command. I thought at first that it must have been alarmed by a Falcon, and looked anxiously round in the remote hope that I might be about to witness a chase, but an even more interesting sight was in store ; for, far up above, a mere speck in the sky, another Heron presently appeared, sailing round, and descending to meet its comrade. The second bird was so high, that it seemed scarcely possible that any cry that had

¹ A species of witch, or spirit.

² "The Goat" is an Inn in the village.

escaped it, could have carried so far as to reach its companion's ear ; at any rate, it was some considerable time before we were able to discern an answering *frank* ; but as the birds approached one another their calls became more frequent, till, as they joined, they amounted to quite a mutual ovation. The two then circled round together, gradually rising, until, as mere dots against the blue sky, they disappeared away over the mountains. What the explanation of the meeting might be, of course remained a mystery ; but about the mutual joy, and understanding between the birds, there could be no doubt. No long-parted lovers could have met more demonstratively ; but from what journey number two was returning, whether he arrived quite unexpectedly, or whither the two departed, we can never know. How interesting it would be could the veil be withdrawn behind which such secrets are so often hid !

There is something almost ludicrous in the efforts made by a Heron to escape, when he happens to be surprised at close quarters. He swerves from side to side with every stroke of his huge wings, as though he would emulate the zigzag flight of the Snipe, and how easily so large a bird may then be missed, with both barrels, many a young sportsman, and not young ones only, must have realised to his confusion ! The thing looks hardly possible in cooler moments ; but the mere handling of a gun often seems to make the blood run quicker, and "nerves" and good marksmanship seldom go together. When thus taken unawares, a Heron sometimes gives us the impression that he carries too much sail, and might get along more comfortably were his wings better proportioned to his weight, but it is not in flight alone that his wings probably serve him. When at rest, they are drawn round his spare form like an ample cloak, affording protection against both cold and damp,—a mantle which is beautifully "finished off," so to speak, by the long silky feathers which hang pendent over it from the back of an adult bird. The ability of the Heron to withstand cold becomes all the more apparent, when we remember that most of its near relatives are

tropical, or sub-tropical birds, or withdraw southwards in winter; while our bird remains in its chosen haunts till absolutely frozen out, and then, for the most part, only seeks the coast to await there the departure of the ice from the inland streams. No degree of cold seems to chill a Heron's feet, for he will stand by the hour together in the most icy water, waiting with the patience of a Stoic for his prey to come to him. Patience is, indeed, the sole talent upon which he relies for his daily bread, for he utterly disdains the plebeian chase. Taking up a position in a likely spot, he waits, and, if prey comes not, simply goes on waiting. The approach of a victim is signalled by a slight movement as his lance is laid in rest; when near enough, a lightning stroke, with aim that seldom miscarries, is followed by a dexterous toss of the fish in the air, so that it may be held and swallowed head-foremost, a straightening of the long neck as the fish slips down it, a self-satisfied shake of the feathers, and, till his hunger is appeased, the watcher is ready to resume his vigil. When the resources of one pool are deemed to have been exhausted, he will proceed to another; but long study has given him a wonderful perception of the ways of fish, and if a shoal is in the neighbourhood, he knows much better than to move.

Amongst other food, a Heron readily swallows any newts that come in its way, and it is one of the best natural checks we have on the increase of the eel. Near Aberystwith, I one day saw a Heron alight for a moment on the sea, a quarter of a mile or so from land, and rise from the water again without any apparent difficulty. It was near one of those curious little heaps of gulls, and divers, which so often collect over the spot where a shoal of herring-sile, or white-bait, has been discovered at the surface, and the sight of the fish was no doubt more than the ever-hungry Heron could withstand. It made only a single attempt to strike a fish, while sitting upon the water, whether successful or not, the distance was too great to distinguish; and then, perhaps liking not the noisy company it had got into, rose, and with a loud *frank*, resumed its journey to the rocks.

A belief, common to many parts of England, and frequently

applied to other birds, exists here in a Welsh proverb to the effect that “The Heron never dies,” owing to the same spot being often resorted to by one of these birds over a long series of years. The farmer who quoted it to me, had been in his farm for, I think, about twenty years. It was situated away amongst the hills, and during that time a Heron had visited him every spring, to feed upon the frogs that frequented a pool in the valley below his house. As soon as spawning time came round, the Heron was as certain to appear as the frogs, and the farmer persisted that it was always the same bird. In this he was most probably quite correct, for in the nature of things there are few subjects upon which it is less possible to have precise information than on the natural term of a wild bird’s life; and the Heron is, almost certainly, not a short-lived member of the class.

CHAPTER XXVI

Ravens—Habits and nesting of—Corbies—a Corby messenger—The Ravens' God—Noah's curse—Superstitions—The Druid's rock—The devil's rock—Birds driving away their young—A paradise of "vermin."

THE Raven is a sort of *genius loci* of many mountainous districts, and is yet, happily, common enough to attract attention in most parts of Wales. In the immediate vicinity of Llanuwchllyn its lot is not altogether a happy one, for, in addition to the grudge which the sheep-farmer always bears it, it is there subject to much persecution at the hands of the gamekeeper, and is seldom, or never, allowed to bring off a brood. Old nests, or the remains of them, may be seen in several of the higher cliffs; but they are so substantially built, when new, and last for so many years, that such evidence cannot in itself be taken as denoting any very recent occupation. One nest pointed out to me was said to have remained untouched for ten years; and yet, at the distance of some couple of hundred feet, it looked so new, through the binoculars, that it was difficult to believe it had not been built that spring. Much of this durability the nests owe as much to their situation as to the substantial materials of which they are composed. The site may appear exposed enough, at a distance, but a nearer approach will disclose the care with which it has been chosen. Probably hardly a drop of rain can fall upon it, no matter whence the wind may blow; while projecting rocks often afford such protection from the wind, that however fiercely the storm may rage along the face of the cliff, or beat up against it, the nest lies in a kind of harbour, where all the great waves are broken on the bar, and nothing but gentle ripples stir the air immediately around it.

When it is remembered that the selection of the site

had to be made, and the nest built, during some of the stormiest weather of the year (for the Raven builds in what is practically "the depth of winter"), the need for attention to situation becomes more apparent. Probably the whole range of rocks does not present another equally favourable site, and in that may be found one of the chief explanations of a fact, which sometimes calls for curious remark, namely, that when, in the rare cases nowadays, in which a new pair of Ravens seek to establish themselves in an ancient, but long-deserted breeding place, the identical spot that held the former nest is almost invariably at once fixed upon. The date of the original selection of the site is, in all probability, more shrouded in the mists of eld than any event of which man possesses chronological evidence, for the Raven inhabited the country long before the time of the Druids ; and even supposing he were not then driven to the inhospitable places that now offer him the greatest protection he can claim, he has still occupied these, in unbroken succession, for a much longer period than any of the Ap-Jones, Llewelyns, or Fychans, by whom he is now persecuted, can trace their pedigrees.

Ravens pair for life, and remain together summer and winter. They are the earliest of our birds to begin nesting operations, and in Wales sometimes bestir themselves in that direction even before the turn of the year. In winter they roost together in large flocks, after the manner of Rooks and other *corvidæ* ; but their assemblies have generally all broken up by the middle of January, and for the next six or seven months the regular roosting places are untenanted, except by a few birds which apparently have no inclination to nest that year. It is difficult to understand these latter ; they go about in pairs, and some of them, at least, are not young birds, yet they show no tendency towards domestic affairs. It can hardly be that nesting sites are not available, if they chose to run a few of the ordinary risks ; and the keeper's suggestion that they are "barren birds that have ceased to be of use to anyone, and are only the cursedest nuisance to other people," is even less tenable, although seriously put forward by its author,

despite the fact that some of the birds which he himself has killed, are undoubtedly last year's young ones, while he knows well enough that some young ones breed in their first year. Whatever the solution of the problem may be, however, the fact remains, and it is doubtless from some of these long-used, and well-known resorts, that new partners are obtained, at short notice, by birds of either sex, who have been so unfortunate as to lose their mates in the throng of family cares. But whether a wife, or husband, is lent, or merely a foster parent engaged for the time being, or how otherwise the matter is capable of arrangement, is not so clear, since, as just stated, all these non-breeding birds are habitually seen in pairs.

Corby is a very ancient name of the Raven, still in almost universal use over a large portion of the north of England, and in Scotland, and not now altogether unknown in Merionethshire owing to the importation of so many gamekeepers from the north. From the greater part of the country the Raven has, of course, long since been banished; and both its place and name have in many instances been usurped by the "Corby Crow," which being now the only "Corby" known, the fact that such place-names as "Corby Crag" or "Corby Rock" really owe their etymology to the larger bird, is gradually slipping into oblivion.

The true application of the term a "Corby Messenger" seems to be in like danger of being lost sight of. The use and origin of the phrase is somewhat obscure; but it is most generally applied to a messenger who either does not return at all, or arrives too late; and that its association, in this sense, with the Raven liberated from the Ark, is at any rate of respectable antiquity, is attested by more than one old author. Thus, in *Lindsay's Warkis*, published in 1592, we have the story fully set out, and the raven and the corby messenger directly connected.

"He send furth corby messingeir
 Into the air for to espy
 Gif he saw ony mountains dry.
 Sum sayis the rauin did forth remane
 And came not to the Ark agane."

In those times which have since been described, by those who did not know them, as

“The good old days, before the reign of order,
When rapine was the watchword of the Border,
When power was law, force justice, and might right,
And the best plea for doing wrong was might,”

the expression “corby messenger” had a more sinister meaning, associated with coming strife and bloodshed, with its attendant glut of carrion ; and in the days of Howell Dda, or Owain Glyndwr, the Ravens of the Dee valley must have chanted their hoarse requiem over many a stricken field, of which they had, perhaps, been looked upon as the forerunners.

According to the Rev. Charles Swainson's *Folk-lore of British Birds*, “Woden was called *Hrafna-gud*, or the Ravens' God, because he was supposed to have two ravens, Hugin and Munin (Mind and Memory), which he sent out over the world to get intelligence : when they returned they sat on his shoulders, and told him all they had seen and heard. Hence the raven was held in high honour by the Norseman, and its form transferred to their standards, the most famous of which bore the name of *Landeyda*—*i.e.* ‘Land ravager.’ It was said to have been woven and embroidered in one noon-tide by the daughters of Regner Lodbrok, son of Sigurd, that dauntless warrior who chanted his death song while perishing in a horrible pit filled with deadly serpents. If the Danish arms were destined to defeat, the raven hung his head and drooped his wings ; if victory was to attend them, he stood erect and soaring. The Vikings also, following Noah's example, used the raven as a discoverer of land. When uncertain of their course, they let one loose, and steered the vessel in his track, deeming that the land lay in the direction of his flight ; if he returned to the ship it was supposed to be at a distance.” A Raven coming from over sea, therefore, must sometimes have been the precursor of an invasion, and anything but a welcome messenger to the Early Britons.

The curse of Noah, that fell upon the Raven as a

consequence of its not returning to the Ark, has assumed many forms. According to one version, "it always flies crooked, and not straight like other birds,"—a habit which is sometimes particularly emphasised when its nest is endangered. Soaring overhead, it may then, occasionally, be noticed going through a series of curious evolutions, giving the impression that it is progressing by alternate strokes of the wings,—a method of flight I have not observed in any other bird. It has also a habit of dropping a foot or two through the air at each croak, rolling over sideways in a manner peculiarly its own. Another variant of the story says that, when it returned not to the Ark, it took up its abode on the mountain tops, and was condemned by Noah to remain there ever afterwards. Hence we find it still an inhabitant of the mountain, and it may be heard calling upon "*Noah, Noah,*" to relieve it from the curse. To some ears the cry sounds more like "*Awake, awake,*" or "*To horse, to horse,*" and by such it is supposed to be calling upon some sleeping beauty, or warrior, who lies spell-bound in some mountain cave. Its sable hue is also said to be an heritage from the Ark.

" 'Tis said the raven, ere the Flood,
Was white as any white sea-mew :
But something that he said or did,
While in the Ark, upon him drew
A curse from Noah, and since that
His feathers have been corby-black."

In Merionethshire quite as many tales and superstitions attach to the Raven as elsewhere ; but the inhabitants have a particular dislike to talk upon such subjects, partly perhaps because they are still regarded more or less seriously, and it is very difficult for a stranger to get at them. One says that the Eagle would never allow the Raven to build upon Cader Idris (King Arthur's court), and that, since the disappearance of the royal bird, the Falcon has taken his place and assumed his sway.

According to another, all the Ravens fly to the seashore in the morning, if there has been a wreck at sea ; or, in the

rare event of any person being drowned in Bala Lake, they resort thither,—the first intimation of one such catastrophe having been given by the birds assembling there. No funeral has every been known to take place at Llanuwchllyn at which one or more pairs of Ravens did not attend, croaking overhead. This information I got from a tradesman while a funeral was actually approaching. On my calling his attention to two Ravens overheard, his reply was : “Yes, indeed, they always come ; they know beforehand when a burial is to be, I think.” By most country people they are regarded as birds of ill omen, and they are disliked by all. On one of the hills overlooking the valley, there is a slab of rock lying upon other large stones like a cromlech, though its position seems undoubtedly due to natural, not human agencies. It was formerly known, I was informed, as *Craig-y-Druidion*, or the Druid's rock ; but it is so commonly used as a perching place by “the bad birds” that the name has now become corrupted into *Craig-y-drwg*, or the devil's rock, and as such it is now generally known. Another devil's rock, above the *Pistyll Dee*, is a huge lump of curiously contorted lava, of which there are several smaller examples round about. It is very clearly marked by cloven hoofs, of many different sizes, the smaller impressions being not larger than might be made by a sheep, while a large dinner-plate would scarcely cover some of the others. A whole crowd of devils would appear to have congregated there at some time to dance, including, without a doubt, the father of all evil. The person who pointed this stone out to me was under the impression (since he had abandoned “the devil theory”) that the marks might be footprints of extinct animals ; but there is clearly nothing of an organic origin about them, while they are, besides, in an igneous rock, in which no such marks could possibly occur. In reality they represent merely the unequal cooling of the heated, or molten rock, some of the softer portions of which have yielded more than others to the disintegrating effects of the atmosphere.

The Ravens resorting to these stones were looked upon as evil spirits, or at least as holding communion with such.

One was killed there by a keeper one morning only a few years ago, which, I was informed, "continued to be dead all day, and was stiff when he threw it out of his bag in the evening on arriving home. Late at night, however, he and his wife were awakened by a terrible noise ; and on going to the stable, whence it proceeded, he found the Raven perched on the pony's back beginning to kill it. As the man entered it flew past him, knocking the canwyll frwyn¹ from his hand, and disappeared in the darkness ; but they got no more peace in the house that night, until the morning, and the pony was not itself again for many weeks afterwards. It always shook at the sound of a Raven's croak, and in the stable it often whinnied and pawed half the night as though chased by a flock of fears."

The young Ravens bred here are generally fledged by the beginning of May, not unfrequently some weeks earlier, and where not molested, they remain, or gather to roost, about the nesting site for some months ; after which they begin to congregate with others at some general winter roosting place. Before they leave the rocks where they have been bred, they are often very fearless ; I have sometimes had the whole party circling about me on a mountain top, or passing along the face of the cliff beneath, at a distance of only a few yards. When danger threatens them, however, the young are taken off by their parents, to safer quarters, as soon as ever they are able to fly ; and in such circumstances, they seem often to join some other family party without evoking any jealousy, for one sometimes comes on a dozen or more young ones flocking together with no more signs of disagreement amongst them than if they were a lot of Rooks or Daws. Very soon after the winter roosting place has been resorted to, the family parties become broken up ; for, there, it is rare to see the birds except in pairs, and so they continue for the rest of their lives.

From the above remarks it will be apparent that the writer is not a sharer in the general belief that Ravens

¹ A taper, or rush light, still in common use amongst the hills. See page 229.

Birds Driving Away their Young 211

“drive away their young as soon as they are able to look after themselves.” Neither in regard to the *Corvidæ*, nor amongst other birds, has he ever been able to convince himself that anything of the kind existed, while he has noted much that clearly pointed in the opposite direction. The family parties of Kestrels, hunting a hillside together, must be a familiar sight to many people, and they may also be seen roosting in company in rock or wood. Where they occur, similar parties of Buzzards, and other hawks, sleep and hunt in close proximity without serious disagreement. So do Kingfishers, Woodpeckers, Owls, and many other birds, against which charges of driving their young away have been brought. I one day saw a party of six Peregrine Falcons dash like so many pigeons into a precipice at night to roost together, as late as the end of July, and shall not soon forget the sight. The fact seems to be that none of these birds show any more tendency to bully their young than do other more familiar species, and it is not until the development of the wandering instinct, common to most birds in autumn, has asserted itself, that the family circles are broken up. It is then, perhaps, generally the young who depart first, and the adults may remain in their accustomed haunts throughout the year, but in many cases it is just the reverse that happens. With some species, and Ravens are amongst the number, it is the old birds that are the first to desert their nesting quarters, and this they probably do as soon as the young are able to look after themselves. Whether they then merely adjourn to some not far distant roosting place, which is the general winter rendezvous of the species, or go on a more extended journey, we have no information upon which to base an opinion, and probably never will have; but, in any case, it is quite certain that some of the winter assemblies contain far more than all the locally breeding birds put together, and how many of the latter they include is chiefly a matter of conjecture. Certain individuals, conspicuous by reason of white feathers or otherwise, have been known to resort for years to a particular station, whether in winter or summer, but

generally it has only been at one or other season, not both, that their presence has been remarked.

It is in spring, when the nesting stations are once more sought, that jealousy manifests itself. By that time parents and offspring have probably forgotten one another; the young are then as independent as their elders, and one pair (no doubt the original one as long as they survive) resumes possession of the family seat, and seldom allows a rival establishment to be set up anywhere very near it, whether by strangers or blood relations. This, however, is a matter for consideration according to local circumstances: I have seen two Ravens' nests not very far from one another, as well as others closely surrounded by Jackdaws and sea-fowl. One of the nearest nests to Llanuwchllyn occupies a commanding promontory on one side of a rocky glen; while on the other, not more than two or three hundred yards away, is a Peregrine's eyrie. Amongst the trees below these, there is nearly always at least one Crow's nest. When on a visit to the place, on 9th June, I not only saw all these birds, but also nests of the Buzzard, Merlin, and Kestrel, all well inside half a mile's radius, and once or twice had members of nearly all these species in view, on the wing, at the same time. The young Ravens were well fledged, and soared about without making themselves obnoxious to any of their neighbours. The crow's brood had very recently left their nest, and were sitting about on rocks and trees, one of them mounting up to what looked like dangerous proximity to the Falcon's quarters; and of all the birds the old Crows were by far the noisiest and most aggressive. They mobbed each and all of their neighbours in turn, even including the female Falcon, who treated their impudence with silent contempt, soaring out of the way without paying the slightest regard to them. The Tercel, on the other hand, once or twice resented their attacks and drove them back. The Merlins, Kestrels, and Buzzards were all jealous of the Crows approaching their nests too nearly, as well as of one another, and alternately mobbed, and were mobbed by each other. The least aggressive were the Buzzards, and perhaps they were more often attacked

by the other birds than any of the company. When either Crow or Falcon pressed them too closely, they uttered angry cries, and, turning on their sides, extended their talons in a very business-like way, that generally had the desired effect of terminating the annoyance for the time being. When they in turn stooped at any of the other birds, they did so with half-closed wings, uttering a low scream and dropping their legs as they passed, and even the Crows seemed disposed to treat them with more respect than the Falcons.

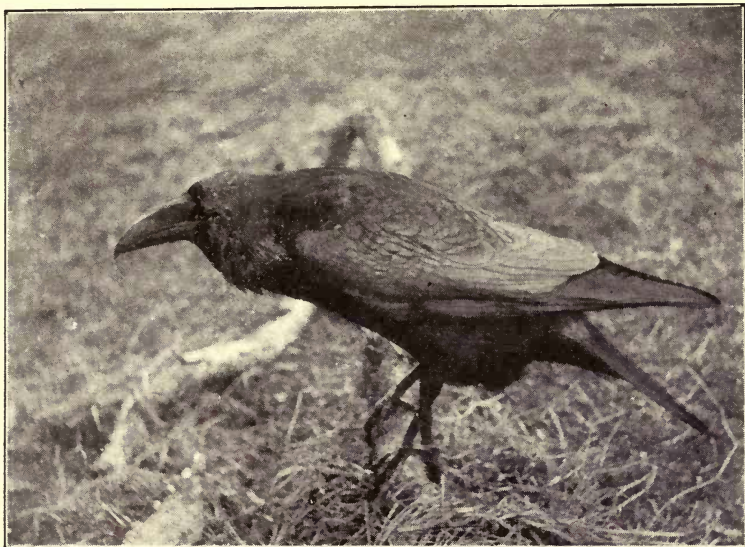
It was in this glen that I saw the Marten and Buzzard in such close proximity to one another, referred to in Chapter XL. Amidst this grand collection of "vermin," a Ring Ouzel, and several Pipits, and Wheatears, also had their nests, and frequently would be singing below, while one or more of the raptors were on the wing above. Familiarity had in their case evidently bred contempt of danger, though one could hardly imagine their leading other than rather anxious lives, especially when their young began to get upon the wing.

CHAPTER XXVII

More about Ravens—Sagacity of—Powers of smell in birds—Cries of the Raven—Ravens and Collies—Nature's scavengers—Diseased Salmon and Grouse—Strange tenacity of life—Nature a stoic—Flight, size, and weight of Ravens—Food of.

I HAD many most interesting experiences with Ravens in Merionethshire, frequently having these wildest of birds under observation from a concealment, at very close quarters, and sometimes several of them at the same time ; but the Raven is not easily outwitted. Once or twice, indeed, it required no great stretch of imagination to suppose that an individual actually entered into the fun of the thing, and flew off laughing—and not always in his sleeve—at the trick he had discovered. Occasionally, one quite posed for having his portrait taken, and on more than one of these rare occasions I was so unlucky as either not to have a camera with me, or not to have got it fixed up before the sitter's arrival. There was one place at the corner of an open straggling wood of old oaks, with one or two big silver and Scotch firs in it, round which Ravens were frequently to be seen soaring. It was often a sort of gathering place about which a dozen, or sometimes twice as many of the birds would hang for half an hour, or longer, ere departing for their roosting place in the afternoon ; but light was then never good enough for snap-shooting, and, although many exposures at beautiful subjects were made, few of them were good enough to print from. In the mornings, a few of the outgoing birds would sometimes tarry there for a short time, but then again it was usually before there was light enough for photography.

In order to try and induce some of the Ravens to come to this spot in good light, I dragged the remains of a dead sheep to it from a good half-mile's distance, and having



RAVEN.



YOUNG CUCKOO.

got it into position outside a bit of ruined wall, I proceeded to build a substantial shelter, a few feet away, beneath the pendent branches of a silver fir that overhung the wall, the shelter being, of course, inside the wood, and away from the bait. The hillside fell abruptly down from the wall, and the slope was thinly covered with trees, there being a fair clump at the back of my particular fir. There were stones, sticks, and braken in profusion, with which to build, and very soon I had a comfortable hut made, large enough to give me room to move about a little inside, and the only thing that remained to be done was to arrange an opening in the wall for the lens. This could be done for the most part from the inside, so as to leave the coast quite clear in case any Ravens should pass. While I was busy at it, but not half ready, a distant croak was heard, and presently a pair of Ravens were soaring overhead. Of course, there was nothing for it but to remain absolutely still, and await developments, to get the camera into position for these sitters being quite out of the question; and in twenty minutes or so, having satisfied themselves by soaring backwards and forwards that all was well, both birds were sitting on the top of my silver fir, perhaps twenty yards above me. Here they exchanged notes for some time, in subdued voices, which fancy might interpret somewhat as follows: "Right?" queried one. "Doubt it," answered his more suspicious neighbour. "Go long," said number one. "Right oh," responded number two, and dropped several feet nearer the sheep. This kind of conversation was kept up for some time, till one bird perched boldly on the moor, close to the sheep; no sooner had he done so, however, than something roused the suspicions of his mate, for with a loud "*Cave*" it left the tree, followed instantly by the bird on the ground, and in a few seconds both were soaring far overhead again; nor did they return. What it was that frightened them I could form no idea; I don't think it was anything to do with me, unless it could have been smell, and that, especially in the light of future experiences, seems to be most improbable. In fact, I hardly believe in the popular idea that birds of any kind can "wind" either prey, or an enemy,

at all. Many sportsmen, gamekeepers, and others, especially wild fowlers, I am well aware, hold contrary opinions, but they can seldom adduce any direct evidence to back them, while, though negative testimony is seldom very convincing, numerous experiences, besides those referred to in this chapter, have seemed to me to point strongly in the opposite direction.¹ That, however, is too long a story to go into at present ; the Ravens had gone, and for that day I saw no more of them, though, after the camera was arranged, I waited for several hours.

Some days of rain and snow then intervened, and before I got back to my shelter the bones of the sheep had been picked clean. Still, there was plenty of wool and skin about, and for several days I waited for a few hours beside these. Plenty of Ravens were seen, some of them coming very close, and I got a fair snap at a Kestrel one day that settled on a post not many yards away, but nothing better. Then, with the help of a farmer, I got another dead sheep into position—there were, unfortunately for him, quite a number of them about at the time,—and that day got an excellent “shot” at a Buzzard who came to feed at it. The click of the camera, so close to him, alarmed him, however ; and though he passed over once or twice afterwards, he did not come down again that day. This bait I took the precaution of hanging up in a tree, when I left the place, and so it lasted me for many days, most of them blanks, some of them quite interesting. I generally saw at least one Buzzard, and nearly always a few Ravens, though often they only passed overhead. I was in the habit of creeping into my shelter through a narrow hole, which was then generally closed by a branch and a few fern leaves. On one occasion, when this precaution had been neglected, a Raven came and found me out in the most absurd manner. He appeared so suddenly that I had barely got the camera into position, and had omitted to close the “door,” and he was, of all the birds that ever visited me,

¹ The experiments made by Darwin and others, with Condors and other birds, are well known, and have generally told against the possession of “smell” by birds.

the most entertaining ; curiously, too, he was alone, other Ravens invariably coming in pairs. The first intimation I had of his presence was a croak very close at hand, and almost immediately he alighted on my tree. There he sat cawing and chuckling to himself for a long time, sometimes changing his perch a little, the variety of his repertoire being extraordinary ; no sound uttered beyond a half tone, but almost every voice of the mountain being imitated in turn, and some of the notes defying all similes. He yapped like a dog, reproduced the call of a grouse, and a crow, to perfection, bleated like a sheep, or a goat, and made all sorts of metallic noises, from the click of a blacksmith's anvil to the creaking of a rusty hinge. Very leisurely he descended from the tree-top, till at length he sat on a branch immediately above me, and so close that I could have touched him easily with a walking-stick, there being nothing but the fir branches, thickened by a layer of fern leaves, between us. Then he went down and inspected my "bait" (it was nothing but wool and a bone or two), and then flew back to the wall beside me. An idea then seemed to strike him, and deliberately flying down into the wood at the back of the hut, he caught sight of a boot through the open door, and next moment was off through the trees as fast as his great wings could carry him. Needless to say, he never returned, and (probably no more than a coincidence) though I tried the place again many times, during several weeks after that, not another Raven ever came near again. Many passed ; but though new baits were provided, not a bird would come down even so much as to inspect them.

One day, when crossing a rather thickly wooded valley amongst the lower hills, I had a remarkable experience of the cunning and sagacity of the Raven. On the side of the hill along which I was walking were many old oaks, the opposite slope being covered with thick scrub, and young trees, for about half its height, opening on to heather and rocks above. A pair of Ravens came soaring overhead, and, getting behind some trees, I was watching them with my glasses, when I became aware that a couple of collies

were hunting rabbits amongst the scrub. Presently the Ravens were flying at no great height above the trees, evidently interested in the doings of the dogs ; and when the latter started a rabbit, and went yapping up the bank in pursuit of it, their interest was visibly increased. Leaving the scrub, and making for the rocks above, the rabbit was so unfortunate as to run into a trap. Its squeals quickly attracted the attention of the collies, and they were hastening towards it, when the Ravens lurched down from above with such threatening cries, that the dogs turned tail and fled homewards, apparently in the belief that it was a human voice that was rating them. Perhaps they were troubled with the poacher's conscience, to whom all sounds spell alarm, and paid no particular heed to the language, but, be that as it may, they left the birds masters of the situation. The struggles of the rabbit, and the click of the trap, distinctly audible where I sat, did not seem to disconcert the birds in the least ; they appeared to realise perfectly that its power of doing mischief was gone, and that it was harmless to themselves, for they soon alighted beside it. One of them then advanced, and dealing the poor rabbit a dexterous blow on the head, silenced his screams for ever, and the two proceeded to discuss the body without further delay. There was no apparent jealousy between them as to who should have the tit-bits, and in a surprisingly short space of time all that remained of the victim were its bones and a few scattered fragments of pelt ; while the Ravens, after wiping their bills upon the grass, again soared aloft, and disappeared, all unconscious of the interested spectator who had all the time been sitting within a few hundred yards of them on the opposite side of the glen.

The part which such birds as the Raven were designed to fill in the great scheme of Nature, as a sort of general scavengers, is rather apt to be overlooked in these latter days, when the engineer undertakes such duties, and Acts of Parliament seek to compel farmers to bury their dead ; but the ridding of the country of all such carrion feeders, while it may be for the general good, has often to be paid

for on a considerable scale. Large sums have, within recent years, been spent in collecting, and burying, the Salmon which have died from disease, and been stranded on the banks of some of our rivers ; and, it being recognised that such means of disposing of the bodies is a very inefficient one for checking the spread of infection, still larger expenditure has been undertaken, or is in contemplation, in some districts, by which the dead fish may be consumed by fire, or chemical agents. In olden days, all such fish would have been devoured by Nature's scavengers, and the germs of disease effectually dealt with by the process of digestion. Diseased Grouse upon the moors were similarly disposed of, and in like manner the country was kept clean from other epidemics, or they were stamped out when they occurred. Another important function that the birds discharged, was in putting a timely period to the sufferings of wounded, or crippled, creatures. Two or three cases, where the arrival of a pair of Ravens would have been in the nature of a godsend, came under my notice, during my sojourn in Wales. In one of them, a young sheep had fallen over a little precipice on the side of a stream, and had fractured both its fore legs, and otherwise hurt itself so that it could scarcely move. During the day or two it had lain in its helpless condition, everything within reach, including all the moss and lichen from the rocks, and part of its own fleece, had been consumed, and, when found, it was in the last stage of emaciation. It was covered with a cloud of blow-flies, whose maggots had already penetrated its flesh in many places, and my nose warned me of the presence of putrefying matter some time before I reached it. It was lying on a ledge of rock at the neck of a pool, and, never doubting for a moment that it was dead, I got a long stick to push it into the water, and so rid the spot of an eyesore. My horror may be imagined when, on being touched, the poor beast raised its head, and, turning towards me two sightless and maggot-filled orbits, actually attempted a feeble cry ! I desperately pushed it into deep water, and hurried on, but the sight haunts me still whenever I think of the spot. Why does life refuse to go in such a case ?

and at what period (if at all) does the sufferer cease to feel pain? are questions not easily answered. The sufferings that go on daily around us are more than enough to make us shudder, such tenacity of life becoming often incomprehensible. Nature has rightly been described as a stoic. Was she in this case standing idly by, gloating over her handiwork, visiting upon one of her children the punishment that rightly belonged to another, and ridiculing man's incapacity to cope with the problem he had set himself? She did not intend that one class of animals should occupy the land to the exclusion of others; and since her insurgent son had decreed it otherwise, was she mocking his inability to prevent the evils her simple cure for which he had taken upon himself to remove?

The flight of the Raven, like that of many other large birds, is very powerful, and at the same time very deceptive. Though generally given to soaring, he can, upon occasion, move through the air a great deal more rapidly than we are apt to give him credit for; a fact that especially impresses itself upon us when he is seen chasing a rival, or an intruding Falcon, from the neighbourhood of his nest. When he happens to pass close to us, too, the *swish* of his wings is very considerable, and quite comparable to that made by such a bird as a Wild Goose. On a calm evening, when the birds were going to roost, I have sometimes lain in wait for them, on the route they were known to take, and the approach of a bird, or a pair of them, is then frequently announced by the steady flap, flap of their wings, some time before the birds themselves become visible in the gathering twilight. Some years ago, a flock of fifty or sixty Ravens used to roost together, regularly, at Craig-yr-ogof ("the crag of the cave"), on Bwlch-y-groes; but from having been so much shot at there, they have now deserted it for a quieter retreat across the valley. There, I have sometimes seen considerably more than that number come in to roost at night, a body which must have represented the collected birds from a large area of country.

Sometimes, though not often, when they are circling

overhead, the cunate shape of the tail (in the possession of which the Raven differs from both Rooks and Crows) is distinctly visible ; and occasionally, as the light happened to strike it, I have seen the sheen on the neck, and throat, of an old bird, at quite a distance. The fine pendent throat feathers, forming a sort of beard, are often very visible, under those circumstances, particularly when the birds are croaking. The male can always be distinguished from his partner, when upon the wing, by his superior size, sometimes appearing to be quite a third larger than she is. This difference may probably increase with age, for an adult often appears to be almost as large again as a young bird,¹ even in winter. The bill, in adults, is also much larger than in immature individuals, and in very old birds the upper mandible sometimes overlaps the lower one (the *culmen*) to the extent of quite a quarter of an inch, forming a formidable hook. This is a feature I do not remember to have seen illustrated in any of our popular works on ornithology ; and it is, therefore, apt to strike a young person as something unusual should he chance to handle an adult bird. In some of the birds nailed to the keeper's rails round Llanuwchllyn, this feature was very pronounced. On some of these rails I have occasionally been sorry to see half a dozen, or more, Ravens, all adults, hanging uselessly rotting together.

Caught in a steel trap, a Raven will, in the majority of cases, pull itself free and escape, leaving a toe, or a foot, in the gin : for which reason the traps are generally set near water, so that, falling into it, the victims may drown themselves. Where the trap is on dry land, the marks of the bird's bill, where it has been stuck into the peat, in order to assist the pull necessary to break the sinews in the captured leg, may frequently be seen ; no attempt being apparently made to cut the tendons with the beak. Old Ravens, however, soon become very wary of a trap, and are not easily

¹ One adult male I examined weighed $3\frac{1}{2}$ lbs. ; a young one of the previous year, killed in February, less than 2 lbs. ; an old crow (a male), on the same date, scaling slightly over $1\frac{1}{2}$ lbs. ; an adult female Raven, in December, weighed $2\frac{1}{4}$ lbs.

taken in that way, while against the guns of the keepers they could probably also hold their own, but the insidious poisoned bait is beyond the highest intelligence yet developed amongst birds, and before that the race is gradually disappearing.

With a view to obtaining accurate data upon the food of the Raven, I took the trouble to examine closely a considerable number of the pellets, by which these birds, like their relatives, get rid of the indigestible portions of their food. These were picked up, from time to time, beneath roosting, or nesting places, and besides showing how little comes amiss to such birds as food, and the manner in which it varies with the season of the year, give some indication of the distances that are daily travelled for it. The sea is roughly about twenty miles from Llanuwchllyn, yet at all seasons some pellets showed traces of food obtained on the shore. Of this, fragments of the shells of mussels, and crabs, were the most frequent, with occasional bits of clam, and other shell-fish. Bones of fish, bits of sea-weed, etc., also commonly occurred, as well as round, water-worn pebbles, that were no doubt from the sea-beach. More frequently, however, any stones found in the pellets consisted of bits of glassy quartz, such as might be picked up about the mountain tops. These must either be swallowed inadvertently, sticking to other food, or (as I think more probable) from the same curiosity as prompts a tame bird to steal any glittering object. Grass, leaves of trees, and similar vegetable matter are, no doubt, taken adhering to other food. In summer, skulls of voles, mice, and rats, were very numerous, particularly the first named, these animals being no doubt captured upon the hills. Moles, too, were frequent, about equally so throughout the year, many of them, also, doubtless the result of independent capture, though others, perhaps, may have been killed in traps and flung aside. Fur and bones of rabbits were fairly numerous at all seasons, as was also the wool of sheep, and sometimes the hair of cattle and dogs; but what interested me most was the infrequency with which egg-shells, feathers, or other remains of birds, occurred. Of egg-shells

I could never, save once, detect a single trace,¹ and of the pellets examined not above ten per cent. contained any bird remains, at any season, while they were always most frequent in winter. Grouse feathers were naturally the most prevalent, since that was the most likely bird to be found dead, or wounded, about the moors : immature Starlings were almost the only other bird identified, and occurred most often in autumn (? from the capture of young birds, when crossing the moors, or from the picking up of the remains of hawks' meals), once or twice a few feathers of duck, or sea-fowl, were noticed, and twice the skull of a small finch. During summer, numbers of beetle wing-cases were nearly always present ; and that no fewer than thirty-one of the pellets, details of which are given below, picked up in the depth of winter, when beetles are largely hidden from view, should have contained such remains, seems to point to those insects forming a more favourite food of Ravens than might have been suspected. Those who, like the writer, have kept tame Magpies, or Jackdaws, which were allowed to fly about, will, however, recollect the eagerness with which these birds are always ready to follow their owner when stones are being turned over, to snatch up any beetle that may be discovered beneath them, and will readily appreciate the kindred taste.

Below is given a detailed result of an analysis of 433 separate pellets collected at random from amongst a mass of those lying beneath a roosting place of Ravens, near Llanuwchllyn, and brought home for inspection during the last days of December.

Fifty-one were composed of wool only, or wool mixed with other obvious remains of sheep ; 119 contained wool mixed with bones, hair, and other substances not apparently belonging to sheep ; 28 contained hair and remains of cattle ; 1, hair, probably of a dog ; 37, remains of rabbit ; 48, remains of rat ; 49, or perhaps more, remains of mice, or voles, chiefly the latter ; 54, moles ; 3, shrews ; 1, the

¹ Possibly this may, to some extent, be owing to the calcium in the shells being set free by the action of the gastric juices, a point which could no doubt be settled by experiment.

skull of a water-shrew ; 2, hedgehogs ; 2, stoat or weasel ; 2, fish scales and bones, in one of them the scales being very large ; 25, remains of birds, frequently only a feather or two, but in one case, apparently, nothing but the remains of grouse, probably of almost an entire bird ; 47, shells, and other seashore subjects,—crabs, bits of sponge, sea-weed, etc. ; 31, elytra and other remains of beetles, in some instances in large numbers ; 1, the cocoon of a moth,¹—an oak-egger ; 1, fragments of shell which appeared to have belonged to a domestic fowl's egg ; 17, husks of oats ; 4, husks of wheat ; 17, of beech mast ; 26, of acorns ; 2, of sycamore seeds ; 27, various small seeds not identified with certainty ; 1, a cherry stone ; 1, parts of the shell of a hazel nut ; 2, cones or seeds of pine tree ; 13, leaves or "needles" of same ; 49, cotyledons, or buds of trees,—oak, beech, alder, pine, etc. ; 30, grass, moss, fern leaves, bits of stick, etc. ; 17, pieces of stone, lime, chalk (in one instance), cinder, etc., but by far the most common of such mineral substances were bits of white quartz, in one or two cases in glassy, crystalline form. Amongst the 47 containing matter obviously brought from the seashore, were 11 that included fragments of the shells of sea-urchins, and one that contained a piece of coralline zoophyte.²

¹ It is worth while observing, as demonstrating the power of the gastric juices, that although this retained its perfect oval form, without visible hole, the entire contents of the enclosed pupa had been extracted.

² Part of the above information appeared in an article by the author in the *Field* of 19th June 1906.

CHAPTER XXVIII

Fishing—The great flood—Peat—Cwic Craes—Cwmffynon—Ancient habitations—Flint implements—Gold mines—A Roman Road—Buzzard's nest—Rush-lights—Stone walls—A black bull—Stoats—Hunting with—Lively Celtic imagination.

June 15th.—Walked up Cwm Cynllwyd to Tala, and fished up the burn which joins the Twrch there, to near its source on Aran. It is a very small stream, liable to be much overfished on its lower reaches, when flooded, but holds some nice little mountain troutlets nevertheless, especially in the higher part, and as my object was not so much sport as to explore the head of the valley, I was very well content with the dish of fish I was able to leave with Mr Griffith Evans when Cwmffynon was reached. Only a single fly on the finest of tackle was used,—a far more deadly plan, on such small streams, than if two or three are attached to the cast. With a single fly, each likely spot can be tried with a nicety otherwise unattainable; and nothing is more exasperating, when casting to *the* trout of a pool, than to have one of the droppers seized by some officious, and undesired fingerling, whose parting kick is generally enough to alarm all his betters. The water here comes all off slate and igneous rock, and is, in consequence, always very clear, and, on a bright day, a fisherman has good excuse for congratulating himself over each petty triumph. It was, therefore, with no small satisfaction that two half-pounders were basketed from the deep but narrow channel that runs beneath the old pack-horse bridge near Nant-y-barud; and if it be pride that prompts the recalling of such feats, the writer can only crave indulgence. It was not with intent to tell of fishing that the pen was taken up; but when you have gone and done likewise, oh kind and patient reader, you will be able to appreciate and pardon the digression; and—

“ There'll be good trouts there to-morrow,
 Spite of all we kill to-day—
 Will you catch them?—Well, begorra,
 I can only *hope* you may ! ”

The old bridge is said to be the only one of its kind, in the Dee water-shed, that was not carried away by *Y lle mawr*, or “ the great flood,” of 20th June 1781. It is shown in one of the illustrations, and rejoices in the name of Pont Gweirglawddgylfach. In the distance rise the crests of Aran, but to the rugged grandeur of the scene no photograph can do justice. The long high ridge, which rises so abruptly on the southern shore of the stream, and whose side is so picturesquely lined with walls of white quartz, bears the suggestive name of the Cwic Craes.¹ Its flat top is covered with peat many feet in thickness, which furnishes half the inhabitants of the valley with their fuel, the remainder of the farms having digging rights on the Aran side. The accumulation of peat on these elevated tablelands, with their precipitous terminations, and bare, worn sides, still remains a prolific subject for speculation as to the physical conditions that promoted its growth, and the changes that have taken place since. The termination of the peat is, in places, almost coincident with the abrupt falling away of the hill ; and so far from now increasing in thickness, it is, and has been for ages, slowly but surely wasting away, and its component particles are washed by every flood to lower elevations. For how long the process has been going on, we can only guess ; but the channels which storms have cut through the peat here and there show it to be still several feet in thickness, resting upon a gravel of the decayed rock beneath. That “ gravel,” for the most part, has no doubt been fashioned, *in situ*, from the slow weathering of the lava rock ; but it is instructive to notice that, amongst it, an occasional rounded and worn stone may be found, whose smooth surface seems clearly to point to the polishing action of glacial periods. Some of

¹ *Live Braes* (Anglo-Saxon *Cwic*, living), doubtless in reference to some ancient battle. The correct meaning of the word is preserved in the frequent Biblical expression, “ the quick and the dead.”

these little boulders lie *in* the peat, not actually at the bottom of the beds ; and how they came there, and when, is a problem upon which the geologist is left to ponder. In the peat here and there, too, branches of considerable trees occur, which we must suppose to have grown where they lie ; yet no tree could exist there now, and we are confronted with another problem scarcely less difficult of solution than the first. On some of the summits the peat is weathered and soft, without any of the homogeneity that goes to form good fuel, and so loose that it barely affords root-hold to the scantiest of vegetation. Of growing Sphagnum, of which the peat has been largely formed, there is none, except in the holes and basins at lower elevations.

The corrie in whose basin lies Cwmffynon, is one of the finest to be seen in Wales ; but its effect is better appreciated at a greater distance, as, for example, from the hills on the other side of Cwm Cynllwyd. Its precipices are composed alternately of lava rocks and slate, forced up into almost every conceivable angle, with heaps of *débris*, and mouldered stone, piled up below, steeper than it seems possible for loose material to cling together. Where the banks are overgrown with grass, they are often so steep as to be climbed only with difficulty on all fours ; but in many places no vegetation has yet found a foothold, and soil and stone lie barren and exposed, liable to slide away at every change in the weather, and almost inaccessible to human foot. On one such bare brae I came upon the nest of a Meadow Pipit, away from any vestige of herbage, and sheltered under a slab of rock, more like the nest of a Wheatear, or a Snow Bunting, than a Titlark. On another slope, a Wheatear, or *Gynffonwen*, had made her home beneath a piece of white quartz, at arm's length into a hole that seemed as though it might have been made by a Stoat, or perhaps a Vole, the bird only betraying her presence by flying out when I chanced to step upon the stone.

Every here and there one meets with traces of ancient huts, or trenches, which, apparently, can only have been formed for military purposes ; and it is easy to imagine the difficulty which Roman, or Saxon, invaders must have

experienced in following the active Welshmen in such fastnesses, or how difficult of attack such places must have been, even though defended by only a handful of half-armed but determined men. A mile or so south-west of Cwmffynon, ensconced in a fine amphitheatre of nearly precipitous hills, nestles a well-defined circular camp, of considerable dimensions, now known locally as "The Ram's Castle," because it is believed that sheep may have been penned there. From the bed of the stream, near by, I picked up, on subsequent visits, a very good flint arrow-head, and part of another flint implement. Galena, or lead, appears in the rock, accompanied by spots of yellow sulphureous ore, and there are two old drifts into the cliff above the camp. There is a tradition that the Romans worked a gold mine here, and the remains of an old roadway on the hillside is called "The Roman Road." Near the camp are the ruins of some dwellings, of uncertain age, built, like all the walls hereabouts, of blocks of white quartz.

On a ledge of rock, above the drifts, a Buzzard had her eyrie, and unluckily for her, beside her two newly hatched young ones lay the shoulder of a small lamb. It looked as though it might probably have belonged to a still-born lamb, and in any case would almost certainly be part of an animal which the bird had found dead upon the hill; but true to Shakespeare's dictum—

"Who finds the partridge in the puttock's nest,
But may imagine how the bird was dead,
Although the kite soar with unblooded beak"—

nothing that I could say to the contrary would persuade the farmer, who accompanied me, that the Buzzard had not been guilty of preying upon his flocks; and when I passed that way again, a few days later, the two poor young ones lay dead on the top of the cliff, and a trap, baited with the fatal piece of lamb, was set near by, for the old birds. The trap I took the liberty of pitching into the valley below; and should the setter thereof chance to read this confession, he will, I trust, forgive my interference, if indeed he still



“THE BRIDGE THAT WAS.”



A FARMER'S FRIEND (BUZZARD).

remembers the incident. It is only fair to add that the farmer in question was not the genial tenant of Cwmffynon, though the eyrie is on his holding. It has elsewhere been remarked that most of the Welsh farmers persist in refusing to recognise in the Buzzard, and most of the other birds of prey, some of their best friends.

At Cwmffynon, where I had tea, I made my first acquaintance with the Rush-light, or *Canwyll frwyn* (literally "rush candle"), as it is called, in actual use, though, later, it was seen in several other houses. In many places it is the only artificial light that is made use of, and as neither its illuminating power nor its endurance are very great, the inhabitants do not generally sit up long after daylight has left them. To make the lights, the largest rushes are gathered in autumn, and having been peeled, except a narrow strip of skin which is left to hold the pith together, are steeped in tallow, and hung up to cool like tallow candles. When hard they are stored in bunches, hung to the rafters, for winter use. The lights are held, when lit, in simple iron frames, sometimes suspended from the rafters, at others as standards on the table. One of the latter, with canwyll burning, is shown in the illustration. The light it gives is scarcely equal to that of a common wax "vesta" match. The house at Cwmffynon has an old-fashioned ingle in which the peat fire burns on the hearth, and at the sides of which are fixed settles on which you can sit and look up to the sky through the spacious chimney.

On the Twrch, above Afon Fechan ("the little river"), is Rhyd-y-bod, which may mean "The ford of the kite," or "hawk." The first stream that joins the one up which I fished is Nant-y-barbud, or "The brook of the kite"; but Kite here must be understood to mean Buzzard, though the name generally applied to that bird, locally, is *Barcutan*: elsewhere it is known as *Bwncath*, *Bod-y-gwerni*, and *Cyffredin*. The next stream that comes down from Aran is Nant-y-llyn, which carries off the overflow from Llyn Lliwbran, "The Dark Lake," that nestles under the peak of Aran Benllyn. This llyn is well stocked with nice trout,

running up to about a pound in weight, and sometimes they rise freely, one of the best flies being a heavy black insect, one of the *Tipulidæ*, nearly related to the common "Hawthorn fly" of anglers. It is often abundant here on a hot day, and when blown on to the water is sometimes freely taken. Trout no doubt find their way up the outlet stream; but some of them at any rate must spawn in the lake, or in the mouth of the very small feeder which falls into it from the rocks above, for I have seen fry abundantly there in April and May.

The channel, through which this stream flows, has been artificially cut into the rock in places, and its sides built up with rough stone, for no very obvious reason unless it be evidence of some ancient fortification. But in a country so thickly strewn with building material as this is, the making of walls seems, at times, to have been something in the nature of a pastime indulged in by the inhabitants. On every hand, upon the mountain sides, one meets with rude bits of wall, often without visible use, "beginning and ending in nowhere," which seem to have been put up merely because some large fixed rocks, incorporated in their structure, had suggested to somebody the idea of connecting them together. In a good many of the houses, and cattle-sheds, fixed rocks, or huge chance stones, have been made use of in a similar manner. In some cases such a rock may form no inconsiderable portion of the wall of one side of a building, the remainder of the lower part of the walls being formed of stones, presumably *rolled* into position, surpassing in size any that are to be met with in buildings elsewhere.

The Welshman also excels in the building of walls with a gentle curve outwards, from the field to face the hill, so that the top often overhangs the base in a manner which makes the five-foot structure unjumpable to even the active mountain sheep, and at the same time puts a very formidable obstruction in the path of the pedestrian. When a rock happens to lie adjacent to the wall, in such a position that it affords a foothold from which sheep might jump to the top of the wall, it has to be carefully bushed with thorns, or

other branches ; for nothing but the most strenuous care will keep the sheep from invading a hayfield, and a way, once discovered, quickly becomes a beaten track by which the whole flock seek the field, morning and night, if not prevented.

The way down from Llyn Lliwbran is intersected by several of these walls, shutting off the fields of Plas from the mountain, and of one of them we were glad to avail ourselves, and to make a wide detour under its shelter, to escape the attentions of a black bull, whose angry bellow most effectually proclaimed that there was no road that way. By way of retaliation, he was snap-shotted from the top of the wall, and thereby, maybe, his memory may survive long after he himself has sought new pastures, and the broad and easy way that leads to Bovril !

On the side of the wall facing the hill was a Ring Ouzel's nest, containing young ones, the parents greeting us with noisy clatter as we passed, and a little further on a Stoat was seen in active pursuit of a Rabbit. This was only one of several similar hunts I witnessed in this locality, always terminating in the death of the Rabbit. Indeed, unless baffled of his prey by human intervention, the Stoat probably seldom pursues in vain. Perhaps, instinctively, he does not hunt on bad scenting days, and thus always shows to advantage ; but the resolution with which he sticks to a line, and casts himself like the little hound he is, when thrown out, is rarely equalled even by the staunchest beagle. The pace at which he hunts, too, is by no means to be sneered at. What sport could be had with a pack of Stoats, would someone only take the trouble of taming them ! With a couple or two, any rabbit could be easily killed, while rats could be turned to good account when other quarry failed ; and on a hare, in fairly open country, such as many of our mountains yield, they would drive along at a pace quite fast enough for most men to follow, a-foot. The only thing lacking would be the music ; and even that might be supplied, to some extent, by tiny bells such as are worn by falcons.

A Hare one day passed me, lolloping along, and occasion-

ally screaming ; nearly five minutes later, the cause of its alarm appeared in the form of a Stoat, doggedly following the trail. That the chase had been a long one was evident from the Stoat's tongue dangling from its mouth, like a dog's when heated ; but the Hare had already disappeared into a wood, and I did not see the end of the run. A Rabbit generally makes but a poor effort to escape, after the first rush, being apparently semi-paralysed by fear, and quite unable to exert its full powers of flight. I was one afternoon lying on a bank by the side of a hedge, trying to get a photograph of a Land Rail on her nest, when a full-grown Rabbit dashed past, and disappeared amongst the long grass in the field below me. It was evident that it was pursued, and, suspecting a Stoat, I hastily turned the camera on to the track ; but before it could be focussed, the Stoat had passed, so intent upon his prey that my presence was unnoticed. A large field, divided by a rail so as to preserve one half of it for hay, lay below me, and I was able to follow the whole run from where I sat. The Rabbit had taken refuge in the hay, and had evidently stopped to listen for the approach of its foe, for the Stoat had not gone far when the commotion in the grass showed the Rabbit's flight. For perhaps a hundred yards it kept to the hay, the Stoat following not very far behind, then it came into the open, ran twenty yards or so, and squatted near a cow. When the Stoat appeared in sight it started off again, but in a very feeble manner, at the same time beginning to squeal, and, breaking from scent to view, the Stoat was instantly upon it, and administered the *coup de grâce* by a bite behind the ears. The kill had taken place quite near a farm-steading ; and some poultry, attracted by the noise, came cackling up to see what was the matter, one old hen advancing so near, that the Stoat, leaving the Rabbit, made a jump at her, when she took to flight across a pool of water, and the others withdrew, cackling as they went, leaving the Stoat to make his meal, which he proceeded to do on the spot.

The cliff above Llyn Lliwbran is occupied by a Peregrine, generally subjected to more or less of persecution by the farmers, who say it kills their poultry, one man solemnly

assuring me that, only a day or two before my talk with him, he had "seen the falcon come down, and lift a hen from close to his house, while he stood watching it." It would be unseemly to question the veracity of so circumstantial a story ; but the Celtic imagination is exceedingly lively, and, when once set in motion, is often apt to carry its owner considerably beyond the point he had in mind when starting ; while his patriotism is such that he would never think of allowing his own particular falcon to be outdone by others of which he had read in fable, or of admitting that the trout, in the stream near his house, are surpassed in size, or weight, by those of any other district whatever. It is perhaps the climate that is to blame more than anything ; and if to-day you fail to land a fish that is worth basketing, when "only the day before yesterday Mr Jones, of Bala, killed four dozen beauties" (they averaged about a foot in length, as indicated by Mr Jones', of Trohtellydds, hands), you will at any rate soon find that you have the sympathy of most other visitors, none of whom can do any better ; and if it is a consolation to know that by to-morrow, or next week at latest, your own poor fingerlings will have grown to half- and three-quarter-pounders, and have added amazingly to their numbers, you may rest assured that that glory, too, awaits you, when Mr J. shall have the chance of telling others of the baskets *you* have made !

CHAPTER XXIX

Walk down Dovey valley to Aberystwith—Borth—Predatory collies—Owls—Witches—Yews—Vaughans of Mallwyd—Nuthatches—Wood Lark—Red-barked Shrikes—Jays.

July 2nd.—Starting after supper, on a warm still evening, I walked up the vale of Cwm Cynllwyd, over Bwlch-y-groes, and through Llan-y-Mawddwy, thence following the course of the Afon Dyfi past Dinas Mawddwy, Cemmes, and Machynlleth, to Glan Dovey, where I breakfasted, or lunched, at a comfortable little wayside house, before resuming my walk by Borth, and Llanfheangel, to Aberystwith. On the following day I retraced my steps by a slightly different route, picking up several places of interest that had been missed on the outward journey. Part of the road was over classic ground, reminiscent of schoolboy days when, in 1876, we had passed a pleasant year of exile at Borth, to avoid the typhoid fever that had broken out at dear old Uppingham : a year of prosperity, and awakening, for Borth, which it was pleasant to see she had not yet forgotten. Yet how changed her aspect ! Thronged golf links, and gay dresses, where formerly the Wheatears used to play hide-and-seek with us amongst the bents, and to look positively grateful for the intrusion on their solitude, and the Lizards tarried to gaze at the unfamiliar human face—before wriggling into their sandy burrows—sometimes longer than was altogether consistent with their safety. Do those creatures still dwell here, we wonder, and if so, must they not, amidst this merry Saxon concourse, sometimes sigh for the days of their pristine quietude that are no more ? Or is it the privilege of poor mortal only, with his memory for departed scenes and faces, to regret ?

But it is of the *feræ naturæ* observed in this present year

of grace that these notes must chiefly treat, and amongst these ought almost to be included *Canis familiaris*, var. *predatorius*; for, from mountain top to lowland cors, almost no spot is exempt from their investigations during the stilly hours when their masters are a-bed. Sometimes they were encountered singly, but more often in couples, and, in either case, it was interesting to note how nearly their actions were governed by the wild instinct of a remote ancestry. Under ordinary circumstances, a Collie is never backward in challenging the presence of a stranger with his tongue; but when surprised upon the prowl, he is about as likely to call attention to himself in that way as would be a hill Fox; nor are the visual and olfactory organs of that animal much quicker in detecting an undesirable presence. Honest master collie has too much respect for his good name to tamely await recognition under circumstances which might cast a doubt upon his *bonâ fides*; and, when surprised upon a hunting expedition, slings himself behind the nearest available cover, and thence homeward at his best paces, with as much agility as most wild animals. One near the top of Bwlch-y-groes was evidently hunting Field Voles, and I suspect that these troublesome rodents are frequently a chief source of attraction for a midnight prowl; but, nathless, one cannot wonder much at the Welsh keeper's frequent complaint that there are too many dogs on his beat, or that they are not kept at home enough, to allow him to show as large a head of game as he might do.

The note that most fittingly voices the murk, in the Dyfi valley, is that of the White Owl, or *Dylluan wen*, of which numbers of recently fledged young were on the wing at the time of my visit. Some of them, doubtless attracted by the supply of voles, were met with on the bare hillsides, far away from trees of any kind; but it was naturally in the wooded valleys that the wheezing of the young, and the scritchings and snorings of the adults were most in evidence. One of them impersonated a ghost very cleverly for me at Mallwyd, no doubt a not unfamiliar rôle, as the present worthy representative of the family to be mentioned presently told me that one of his ancestors commonly

haunts the churchyard there, in the form of a lady in white. Owing to the excessive heat, I was glad to do as much of my walking in the cool hours as possible, and it wanted still an hour or so of dawn when I reached Mallwyd. Wishing to see the fine old church here, I seated myself beneath an ancient yew tree to wait for light, and my pipe having gone out, I was just dozing, when startled by a most blood-curdling cry, half hiss, half shriek, close above my head. The ghost was, of course, at once suspected, and as I remained still, the owl continued for some minutes to hiss out her complaints at the untimely intrusion on her secret bower, till finding her efforts to dislodge the intruder unavailing, she flitted off, a silent, shadowy form, in the grey light. The accumulation of castings beneath the tree showed it to be a favourite roosting place. There are several fine Yews in the churchyard; this, the largest, now split up into three or four divisions, measuring round the base of the trunk about twenty-eight feet, and carrying a wide spread of branches.

The church bears the date "1641. H." on the oak beams above the porch, and there are some very old, curiously perforated, boards round the top of the tower above. Built into the wall of the edifice is a slate slab, 1 foot 4 inches high, by an inch less in width, on which is cut, in rough capitals, "HERE LYETH ^RY BODY OF ROBERT VUCHAN OF GWM-GLAN MYNOCH WHO DIED FEB. ^RY 7. 1693. AND MARY HIS WIFE WHO DIED NO ^VY 30. 1732." The Vaughans are an ancient family here, one of their curious mottoes being—"Na werth y nef er benthyg byd" ("Sell not heaven for the loan of earth"). Another more ambiguously asks: "Wilt thou stake a fleeting present against an obscure future, or hold the memory of yesterday above the hope of to-morrow?"

The Nuthatch, a bird I never saw in the Llanuwchllyn neighbourhood, was rather common here, and as entertaining as it always is. Near Dinas, it was noticed carrying off the cones of a *Cupressus lawsoniana*, so that it probably finds the seeds attainable, and to its liking, though their bulk would

seem to be but a poor reward for the amount of hammering it must require to extract them. A more profitable task, at which one was observed to be engaged, was in digging wood-lice from the coping of a garden wall; another was vigorously extracting the seeds from the cone of a spruce fir. The Nuthatch was known here, I was informed, as *Delor-y-cnau*.

Another bird seen here, which was unknown in the Dee valley, was the Wood Lark; but as only a single individual was noticed—its mate would no doubt be sitting—it is probably not common. The bird, when I first saw it, was dusting itself on the road, it then perched on a telegraph-wire, and finally flew circling off to a small wood, uttering its never-to-be-mistaken and sweet, if somewhat monotonous, song. As the local distribution of this species is still but imperfectly worked out, it may be added that this was near Cemmes, in Montgomeryshire. The Welsh name of the Wood Lark, *Hedydd-y-coed*, is known to many people, even at Llanuwchllyn, where the real Wood Lark is never seen, being applied to the Tree Pipit, just as that bird is so often called the Wood Lark in many parts of both England and Scotland, where the true *Alauda arborea* is practically unknown, as witness Burns's lines—

“Oh, stay, sweet warbling wood lark, stay,
Nor fear to quit thy trembling spray”—

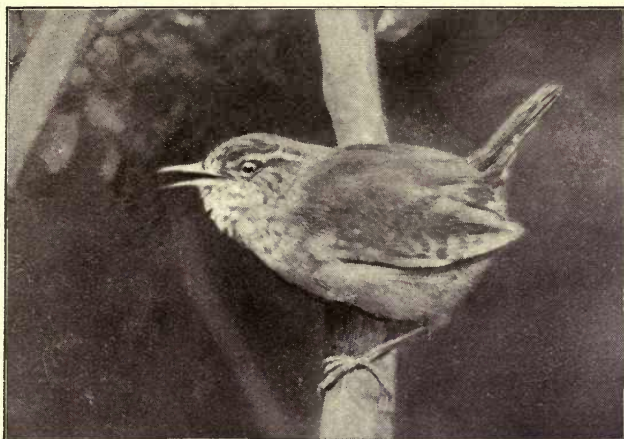
which without doubt refer to the Tree Pipit.

The Red-backed Shrike was more abundant here than in the Dee valley, three or four nests, each containing young, being noticed in the roadside hedges, the cock carrying off the droppings of the young from one of them. With these he invariably flew to the telegraph-wire overhead, and, having dropped them on to the road, cleaned his bill by wiping it upon the wire. I noticed him twice pounce upon one of the handsome and lively Tiger Beetles (*Cicindela campestris*) which were running about upon a sunny bank. For so small and harmless looking a bird, this species is peculiarly given to demonstrating its claims to be regarded as a bird-of-prey. Near Llanuwchllyn, one day, I saw one pursuing a

fully fledged Pied Wagtail for quite a long time, the quarry only eventually escaping by flying in my direction, when the "butcher" was driven off. On another occasion, one pounced upon, and almost instantly killed, an adult Thrush, within a few yards of me. Another fearlessly attacked a Bank Vole that was descending a small pine tree, where it had been robbing a Thrush's nest, and as expeditiously cracked its skull as an owl could have done. Perhaps it may have been the spinal column that was severed, rather than that the brain-pod was actually penetrated, but in any case almost instant death resulted from a bite in the region of the nape. The Shrike then flew off, with its prey dangling from its bill, to its favourite thorn bush, fifty yards away, the ease with which so considerable a weight was lifted being rather remarkable.

The site chosen for the nest of this species is almost invariably a thorn bush, if such be available; and if it form part of a hedge, it will generally be the densest part. The nest itself is large for the size of the bird, thickly padded with moss and wool, and lined with fine grasses. The identical spot in the same bush is often resorted to year after year: this being very markedly the case at Llanuwchllyn.

An instance of the curious abnormality of plumage—a divergence from what is generally spoken of as sexual dimorphism—was noticed here in regard to the Red-backed Shrike. In the other shrikes, which visit this country, the difference in plumage between the sexes is quite trivial, while in the species under consideration it is ordinarily most distinct. Cases in which the female Red-backed Shrike more or less closely resembled her partner have, however, several times been recorded. In some of these, it has been assumed that the cause of the female putting on a male livery might be due to age; in one case, at least, it was pretty satisfactorily established that she was a bird of the previous year. The evidence of the Llanuwchllyn pair was interesting, as proving that the abnormal plumage was retained for at least more than one year. In this pair of shrikes there was no visible difference between the sexes; and they successfully reared a brood, both in 1905 and



WREN.



RUSH CANDLE. (*See page 229.*)

1906, on the side of the railway, about a mile east of Llanuwchllyn station. In the latter year the eggs were of the cold grey type; in 1905 I did not see them. It was one of the birds of this pair that killed the thrush above alluded to.

The male Red-backed Shrike, besides being a remarkably handsome bird, has quite a pleasing song, uttered in a low tone, as though for the special gratification of the singer rather than for the world at large, but composed of a considerable variety of sweet warbling notes, recalling alternately the song of the Dipper and the Whitethroat, or sometimes that of a Whinchat. Some of the notes, indeed, may be said to be borrowed from the repertoire of other songsters, for, like the Great Tit, the Lesser Butcher-bird is no mean mimic. When the nest is approached, both parents are sometimes very fearless, approaching the intruder very closely, marking their anxiety by low, harsh chappings, and swaying their expanded tails from side to side, in a very curious and characteristic fashion. This shrike is known locally as *Y Ceigydd goch*.

The Jay is *Pioden-y-coed*, *Ysgrechog*, or *Ysgrech-y-coed*, recalling the Gaelic *Scriachag-choille*, "screamer of the wood." It is scarcely permitted to nest in the vicinity of Llanuwchllyn, though it does so round Bala, and again plentifully towards Dolgelly. It was numerous all down the Dyfi valley, recently fledged young being considerably in evidence in several places. The keeper at Dinas Mawddwy was under the impression that young Jays were a favourite food of Buzzards, from the number of their recently devoured remains he found about his woods; but I am inclined to think he was putting the saddle upon the wrong horse. Twice, on consecutive days, I saw one pounced upon by a Sparrow-Hawk; and as these are more numerous in the woods than Buzzards are, I fancy that it is at their door that the deaths of most of the young Jays must be laid. They must either be specially toothsome to the hawks, or must be taken in sheer bravado, for there was no dearth of other prey in the woods; and one of the Jays I saw taken was a fully feathered bird, and almost safe, one

would have thought, from the depredations of anything but a starving Sparrow-Hawk. The screaming raised by it, its parents, and companions, and which attracted me to the scene, was something appalling, and enough to have scared away all but a most determined robber ; but by the time I reached the spot, the hawk was already engaged in plucking its lifeless victim, in total disregard of the angry relatives, and only resigned it to me after an ineffectual attempt to carry it off.

A few small wandering bands of Jays were always to be met with round Llanuwchllyn, in autumn, gathering hazel nuts from the coppice, and beech mast and acorns from the woods. The latter it has been said to swallow whole ; but more commonly, they, like the other fruits above mentioned, are first shelled, and then broken up, and disposed of in fragments, being held in the foot for the purpose, and hammered with the bill. Jays seem always to prefer plucking such food from the tree, to seeking it on the ground beneath. The stomach of one killed on 6th December was filled with chips of acorns, amongst which were some small intestinal worms, round, about half an inch in length, and dull white in colour. Apples it is also partial to, as well as many other kinds of garden produce. Although, when moving to a distance upon the ground, the advance is made by a series of big hops, the Jay walks at other times, like the rest of its kith, as I have frequently had opportunities of observing. Where not molested, it is quick to throw off the shyness which has been forced upon it, and will resort, with other birds, to feed upon scraps thrown out upon the lawn. A most charming sight I enjoyed a year ago, in the garden of a friend in the west country, was in seeing a Jay, and two Magpies, together with a crowd of Starlings, Thrushes, and Blackbirds, feeding at a dish put out for them within a few feet of the windows, during a slight snowfall.

Although very destructive to the nests of small birds, a Jay is comparatively harmless to the eggs of game, its chief cause of offence to the game preserver often consisting in its persistent pilfering of maize from the pheasant feeds.

In some measure, it makes up for its misdeeds by being a most efficient watcher against prowling cats, and other undesirable visitors to a covert, giving instant warning of their presence by that raucous scream that grates upon the ear of anyone but the naturalist. In its quieter moments, a Jay gives vent to a variety of not unmusical notes, including the imitation of many familiar sounds, and a soft whistling which under domestication is capable of being trained to compassing simple tunes.

In winter the Jay's body is a ball of soft, fluffy feathers, so ample for its protection against cold, that they are gradually shed, and renewed, during that season, by both old and young birds. Those examined here during December and January—several adults and one immature—all bore out this winter moulting, which I had previously remarked elsewhere, each having many half-grown feathers upon the back, and flanks, though they were so much hidden by the others as to be inconspicuous till carefully looked for.

CHAPTER XXX

Ferns and alpine plants—Tawny Owls—Long-eared Owl—Natural check upon Wood Pigeons—Short-eared Owl—Farmers' friends.

THE abundance of the Scale Fern (*Ceterach officinarum*) on walls about Mallwyd is in marked contrast to Llanuwchllyn, where it does not occur at all. Indeed, the valley of the Upper Dee is not rich in the variety of its flora. The Common Polypody is the most abundant fern; *Ruta-muraria*, and the Black Spleenwort, are abundant on old walls and bridges; Hart's-tongue decidedly infrequent; *Asplenium adiantum-nigrum* is abundant; *A. viride* only occurs in a few nooks, such as the narrow gorge by which one branch of the Little Dee debouches from Aran, at Ceunant Llechweddyfwyalchen, and on the rocks above Craig Llyn Dyfi. On the latter, *Cystopteris fragilis* also grows sparingly, in company with *Rhodiola rosea*, and one or two other common alpine plants. *Hymenophyllum tun-bridgense* is abundant in many places, *H. wilsoni* rare. Of the Parsley Fern (*Cryptogramme crispa*) I only noticed solitary clumps, near the top of Aran, Craig Harri, and Craig-yr-ogof; but like so many other things, where they can get at it, the sheep crop it close, and effectually prevent it from spreading.

After that of the White Owl, the hoot of the Tawny Owl (*Y Dylluan frech*, or *Dylluan rudd*, in Cymry) proclaimed it to be the next most numerous of the *Strigidæ* in the Vale of the Dyfi, as it is, also, around Llanuwchllyn, the "keewick" of the young being constantly heard. It is this bird which, when on the wing at night, utters the "Kek Kek," water-hen-like call, that so frequently puzzles people. All the specimens of which I had a sufficiently near view in

Merionethshire were in the rich tawny phase of plumage ; but whether or not this indicates that that form predominates over the brown one, in this part of Wales, it would not be safe to say, as not more than perhaps about a dozen in all were closely inspected.

Near Drws-y-nant, one of these owls had her nest in a cleft in a rock, in a wood ; another, near Gwernhefn, was on the ground, at the foot of a tree, on the side of a steep gully ; but the most common site here, as in most other places, is in a hollow tree, or in the old nest of a Crow, or Magpie. I have also seen the eggs in a Squirrel's drey, reposing on a warm bed of thick moss, as well as in a Rabbit hole, on nearly level ground, in a wood. In some pellets examined, near the Drws-y-nant nest, the remains of Cockchafers, and the Braken Clock, were very numerous, both these beetles being very abundant there. The latter, especially, I never saw in such swarms anywhere else. Scientifically it is the *Phyllopertha horticola*, but is best known as the "Coch-a-bonddu" of anglers,—a name so variously rendered that it may be worth while explaining that it is properly *Coch-a-pen-ddu*, or "red with black head" ; the very common name of *Coch-a-bonddu* (properly *Y-coch bonddu*), and often misspelt *Coch-y-bondhu*, signifying "the red one with the black body," being quite a wrong description of the insect. At Tan-y-bwlch there was a nest of the Tawny Owl in the hay-loft over a cow byre standing on the side of the hill, a long way from any except straggling small trees. The owl had not begun to sit, when the hay was removed in the beginning of May ; and the eggs, bereft of their shelter, were then deserted. The entrance had been through the slit for air in the gable of the building. I heard of another nest on a hay-stack, under a wooden shed, at another farm without trees near it ; but I did not see it, and it may have belonged to a White Owl, which much more often nests in such places.

If an Owl suspects danger, she will not hesitate to remove her young ones from the nest, and carry them to a place of greater safety ; and should the young be more than half-grown at the time of the exodus, they are, as often as not,

carried into some thick tree, and left there amongst the branches, without the protection of any nest. By this time, they are able to grasp quite firmly with their feet, and to rest in the erect attitude of their parents, and each little fluffy ball takes up a position quite isolated from, and independent of, its fellows. Indeed, each young one may then be found on a separate tree, though more usually they are not so widely scattered. Sometimes—perhaps when it has chanced to fall—one may be found snugly ensconced at the foot of a tree, probably in one of the angles made by the buttressed roots. The castings beneath a tree thus occupied frequently demonstrate that the young have passed some time there, or their absence may point to only recent occupation. Sometimes I have known the young to be shifted to fresh quarters, nearly every night, by jealous parents; and when I have tried the experiment of removing them myself, and leaving them in some spot of my choosing, they have invariably vanished before the following morning.

The hooting of the Tawny Owl is sometimes incessant at night, and is then said to be influenced by the weather, whence the east country proverb, "When owls whoop much, expect a fair morrow." By hunting men, I have heard it maintained that much hooting proclaimed a good scenting day; and when the prediction failed to materialise, nothing was, of course, easier than to hedge with some such remark as "Scent problems most difficult, you know; even owls not infallible!" In the spring, especially, hooting is frequently indulged in during daylight; and the attitude assumed by the bird, in the delivery of its weird song, may then be studied without difficulty. The head is lowered, the wings being frequently slightly drooped, and the notes seem to be rolled in the much distended throat, the feathers standing out nearly at right angles to the skin, and the bill being alternately opened and closed. The extended hoot is invariably followed, after a short interval, by a dissyllabic note of nearly equal volume.

Owls must either be regarded as being much less timid than any other bird of equal size, or they must largely

presume upon the inability of other creatures to see in the dark, for I have sometimes walked, quite openly, up to the tree, in which one was hooting, without its being disturbed. The Tawny Owl occasionally varies its diet by eating worms. I once watched one at dusk, after a wet day, descend to the ground half a dozen times from an overhanging tree, and each time secure a large worm, backing with the worm in its bill, so as to draw it from its burrow, after the manner of a thrush, and returning to the tree to devour it. In captivity, they take worms rather reluctantly, and only when no other choice of food is offered them.

The Long-eared Owl (*Dylluan gyrnig*, or *gorniog*) was less numerous round Llanuwchllyn than in some of the neighbouring valleys, where its favourite fir woods are more plentiful; but I occasionally heard it at night, and sometimes saw one. It seems, sometimes, to be doubted whether this owl hoots at all, but I have frequently had ocular demonstration of the fact. The call is not nearly so loud as that of the Tawny Owl, but is more prolonged; a sort of weird bleat that may be syllabled somewhat like—"To-hoo-hoo-hoo-hoo-ho-ho." In cadence, it is subject to considerable variation, and harmonises well with the lonely fir woods in which it is commonly heard. Upon occasions, it has struck me as particularly expressive of anger. When bringing food to the young, this owl has also a soft crooning call, and it also "purrs" something like a cat, but louder. I have seen its eggs upon a ledge of rock, but its favourite site is an old Magpie's nest. Upon one occasion, I found one sitting on eggs in a new Magpie's nest, and have little doubt that it had ejected the rightful owner, for, when roused, it can become a veritable fury.

Though, like all the other members of the family, its usual food consists of small quadrupeds, the Long-eared Owl seems to have a particular penchant for robbing the nests of Wood Pigeons; and I have no hesitation in affirming that it, and the Magpie, are two of the best natural checks we have against the undue increase of that bird in the fir woods that form the favourite home of each. In default of better accommodation, a very flimsy Pigeon's nest,

amongst the branches of a thick spruce, will content a Long-eared Owl as a receptacle for its eggs. These are sometimes laid early in March, but frequently not before the beginning of May. Six is a very ordinary clutch. Neither in this, nor in any of the other owls, have I noticed any tendency to lay the eggs in batches at considerable intervals of time, as so frequently referred to by some writers, and I cannot think that anything of the kind can be more than quite exceptional.

The Short-eared Owl (*Dylluan glustiog*) seldom visits this district, and I was unable to meet with any evidence of its remaining to breed here. Although by most intelligent people all the owls are now recognised as amongst the farmer's best friends, Grahame's lines, in his *British Georgics*, may be commended to those who are still disposed to think otherwise—

“Let the screeching Owl

A sacred bird be held; protect her nest,
Whether in neighbouring crag, within the reach
Of venturous boy, it hang, or in the rent
Of some old echoing tower, where her sad plaint
The livelong night she moans, save when she skims,
Prowling, along the ground, or, through your barn,
Her nightly round performs; unwelcome guest!
Whose meteor-eyes shoot horror through the dark,
And numb the tiny revellers with dread.”

If some of my good friends amongst the farmers on the Merionethshire mountains could only be induced to view, with like regard, the Buzzards which hover by day over their vole-eaten pastures, the result might be reflected in their pockets, in a more substantial manner than they dream of, and would, moreover, preserve to their beautiful country a charm not reckoned its least by other sojourners at their gates besides the writer.

CHAPTER XXXI

Cemmes Road and Dinas : Attractions of—Buzzards' nests—Unequal justice—Food of Buzzard—Its powers of soaring—Its *mew*—Superstitions attaching to it—Its only fault on a moor—Sheldrakes.

THERE is a line of railway from Cemmes Road to Dinas Mawddwy, privately constructed some years ago, but unworked, and now grass-grown and rusted. The dilapidated station is used as the local post-office. Hard by, the road bridges the Dyfi, and across a deep defile below stands a narrow old bridge, reminiscent of the days of pack-horse traffic, and perhaps of exploits of "the red-handed thieves," to whom reference has already been made in Chapter XVII. It is altogether a likely looking place for checking a pursuit, or getting rid of useless baggage, or compromising evidence, and maybe it is as well that the stones have no tongues to tell of what they have witnessed. There are other attractions than those, too, to tempt the traveller to linger on his way, and many memories that cling to the bosky hillsides. A little later in the season and—

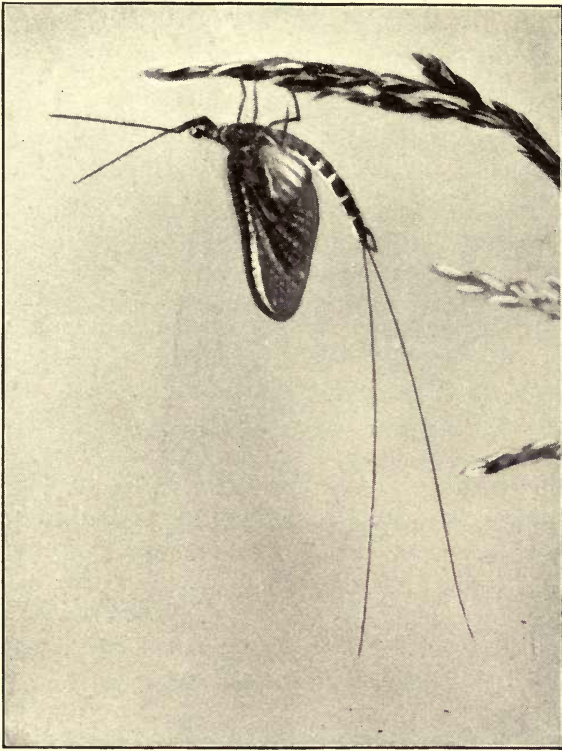
“ Full fair the gleisiad in the flood
Will sparkle 'neath the summer sun,
And fair the game in green abode
Will spread her wings in sporting fun ;
But fairer look, if truth be told,
The maids of county Merion.”

Much of the mountain around the village has been planted, and on the almost perpendicular slopes larch and firs are growing in a manner reflecting great credit on the taste and judgment of the planter. Round the Plas, Douglas firs, and other specimen trees, have done well, and through them there are some charming peeps of the road that winds away

westward to Dolgelly. Above the station is a large slate quarry, extending nearly to the top of the hill; and the plaintive *mewing* of a Buzzard, soaring high above it, in the early morning, seemed to tell of a habitation somewhere in the immediate vicinity. Not unlikely the nest may have been in the wood, for though the trees are not high, very little sometimes contents a Buzzard in the way of security for its treasures. On the opposite side of the valley, a pair had built their nest in a low oak, not much over twenty feet from the ground, quite near to the keeper's house, and actually on the borders of his pheasant-rearing field. The price of such misguided temerity was, of course, death; the female had been trapped at a rabbit below the nest, and the male shot, while the two tiny young ones the nest contained were taken, and hand-reared. Both did extremely well; and at the time of my visit, one, just able to fly, was very tame in the keeper's orchard, associating with poultry, and neither fearing, nor being feared by them. The other had been given away.

When a Buzzard builds herself a nest in a tree, as was the case here, the structure is, externally, a very rough collection of rather large branches, much flatter than, and wanting the solidity, which the mud lining gives to that of Crow, or Raven. To a slight extent, however, this deficiency is made up for by a considerable amount of soft stuff, padded in amongst the sticks, to form a foundation for the eggs. This padding generally consists largely of *Luzula sylvatica*, though in this Dinas nest there was a good deal of moss and grass. The preference shown by Eagles and Buzzards for the Wood-rush as a lining for their nests is rather remarkable. Those of the former are rarely without it, and, in the latter, it is certainly the most common substance made use of. I have seen nests of the Pied Flycatcher, too, composed of little else externally; and it is, also, rather a favourite plant with Dippers, for the first lining of their nests, but, in the latter, the inner lining is nearly always composed of dry beech, and oak leaves.

On the mountains, it is very often a subsidiary crag, rather than the chief range of precipice, that is fixed upon



MAY-FLY AT REST ON THE GRASS.



PEEWITS A FEW HOURS OLD.

by a Buzzard for her eyrie ; sometimes, perhaps, because the latter sites are often already occupied by Ravens or Peregrines, neither of which are much given to tolerating the presence of a rival near their domains. There was one cliff-girt pass, however, which I often visited, that contained a nest of each of these three species ; and as an instance of the unequal way in which justice is sometimes meted out, by the powers which rule in such places, I may add that it was upon the poor Buzzard only that the keeper's vengeance fell. The reason of this was not so much that he loved the others more, but that they were less demonstrative, and at the same time more wary than the Buzzard. It was a long range of rocks, whose higher escarpments looked out, at the upper end of the gorge, upon the open moor ; while at the other extremity they dipped in terraces, half buried under fallen *débris*, until lost in a drapery of blackthorn, hazel, and oak, that, increasing in stature as the ground descended, eventually closed the lower end of the valley in dense wood. The Peregrine had made her home upon one of the higher cliffs, where her inaccessibility generally secured safety. The Ravens' nest was perhaps a quarter of a mile lower down, on a rock, overhung, and invisible from above, but easily approachable within gunshot, by any tolerable climber from below. The Buzzard occupied a heathery ledge just on the confines of the wood, with some scrubby trees growing on the ledge itself, affording at the same time convenient perching places for the birds, and a secure bracket for the nest. It could be approached, with ease, within ten yards either from above or below, and was not very difficult of access after that.

The Peregrine cried a harsh defiance from her citadel, throughout the summer, and raided pigeons, and grouse, as she listed ; but it was too far a cry to fetch the keeper from his pheasant field. The Ravens took off their brood by stealth, ere serious hatching work had well begun ; but the unsuspecting Buzzards soared, mewing, overhead, regardless of the indefensibility of their position, just at the time the young pheasants were appearing, until they were both shot, and nailed up on the "tree" at the corner of the hatching

field. There, their conspicuous bodies might have been supposed to act as a deterrent to other evildoers ; but when I saw them last, they were being totally disregarded by the nimble Sparrow-Hawks, which pricked round the flanks of the field, and the battalions of Crows, and Daws, which operated upon its centre.

By nature the Buzzard is rather more of a woodland bird than a frequenter of rocks, and, though now generally banished to the mountains, still shows its latent preference for trees, by often choosing a ledge from which some mountain ash, or scrubby oak, hangs dependent. Frequently the nest is made at the base of such a tree, being sometimes a slovenly collection of sticks, and heather roots, lined with luzula and bits of wool, at others a mere scrape in the peat, amongst growing rush, or heather, with scarcely an attempt at lining of any kind. The eggs do not commonly exceed two or three in number, and, round Llanuwchllyn, had seldom more than a few narrow patches, or streaks, of brown on their dirty-white ground-colour. They were not laid till towards the end of May, sometimes not until even later.

Like most birds whose ordinary diet consists largely of carrion, the Buzzard presents rather a dull, and indolent appearance, except when upon the wing. But, when soaring aloft, on uplifted and nearly motionless pinions, it lends life to the landscape, so thoroughly in harmony with a mountain scene, as to hold the attention of many people besides the mere naturalist. Rising at first with somewhat heavy beats of the wing, it is soon climbing the air, in a series of ever-widening spirals, with so much apparent ease, as to be suggestive rather of a natural buoyancy than of any applied exertion. Wafted still upward, with each succeeding sweep, it often mounts to such an altitude that, almost before we are aware of it, it has become a mere speck against the clouds, and ere the eye has grown tired of watching, has disappeared into space altogether. When soaring thus, a Buzzard closely resembles an Eagle, in miniature, and affords a sight worth a long day's journey to the appreciative. The wings are slightly elevated above the plane of the body,

with the quills deflected upwards, and so fully expanded that their notched tips stand out distinctly from one another ; while the nearly white under coverts, and the barring on both wings and tail, are sometimes plainly visible, even at a considerable distance. It is the tail which, rudder-like, directs the course of the bird, when the wings appear to be most inactive, and careful observation will detect its "feathering" to right or left according as the course is shaped.

The plaining "*mew*" of the Buzzard, though it does not sound very loud, even when the bird is at close quarters, is a far-reaching cry, that falls so distinctly on the ear, on a calm day, as often to make it difficult to realise that its author is the speck, silhouetted against the clouds, so far overhead. It is a note that harmonises delightfully with the rugged scenery amidst which it is so often heard, and voices "the call of the wild," so dear to the lover of nature, better than most sounds. The note is not badly represented by the syllables "plui, plui," slowly repeated, and was wont to be regarded, by our forbears, as a cry to Jupiter Pluvius, for rain to assuage the bird's thirst. The Buzzard was supposed to be one of several birds upon which rested an ancient curse, prohibiting them from drinking anything except rain water ; and when more than usually parched, its voice became shriller, and it sailed nearer to the clouds, that its prayer might be the better heard. Hence a Buzzard flying high, and at the same time calling, came to be looked upon as a sign of rain. The superstition still survives, in the south-west corner of England, in the following doggerel—

"When the wind is north, or east, you sees
The Vanners keep to their nestesies ;
But when it's blowing west by south,
They sail aloft with open mouth."

"Vanner," or "wind fanner," being a name applied alike to Kestrel, or Buzzard, from their similar habit of hovering, and the reference to the south-west, or rain-bearing wind, obviously pointing the moral. In the Lake district, the Buzzard is sometimes called the "Helm Hawk," from a

similar belief. The mist, which so often caps the mountain's top in the morning, is known as a helm cloud, from the Anglo-Saxon *helan*, a covering for the head. If rain is pending, the cloud creeps down the hill; and the hawk, coming with it, becomes the precursor of rain: if the day is going to be fine, the mist "lifts," and the bird is able to seek its prey on the open moors.

That prey, in Merionethshire, consists largely of Moles, and Voles, the latter of which are often very numerous on the mountains, and are followed by the Buzzard, on account of the appreciation in which they are held from a gastro-nomic standpoint. In hunting for them, the Buzzard flies at a moderate height, quartering her ground as diligently as a well-trained setter, and returning to a well-stocked pasture, day after day, with the utmost regularity. Ever and anon she brings herself to a standstill, in mid-air, hovering just like a large Kestrel, and dropping upon the discovered prey with wings more than half closed, trusting entirely to her weight to give her momentum, and striking force. The legs, carried stretched backwards beneath the tail, at their fullest extent, are, at the psychological moment, brought forward to grasp the victim, their short but powerful talons being admirably adapted for squeezing out its life; but, if required, a bite on the nape of the neck is administered with the bill. The Buzzard is, however, a cowardly bird—"ignoble" was the term applied to it in the palmy days of falconry—and will rarely attack any animal it cannot readily overcome. Rats, and rabbits, are favourite food, as are also snakes, beetles, and such small deer; while a dead sheep on the moor is so attractive that it will be returned to again and again, as long as any flesh remains upon the bones. But from such a meal, the Buzzard will generally suffer itself to be driven by a Raven, or even a pair of impudent, but aggressive Crows, without offering more than a show of resistance, though not disdaining to lift up its voice in complaint of the bad treatment.

For so large a "bird-of-prey," a Buzzard is particularly innocent of ill-doing, even from a game-preserve's point of view. It is not quick enough upon the wing to capture

more than a very occasional bird ; and scarcely even that, unless the latter happens to be either feeble, or badly wounded, in which case it is better, for all concerned, that its suffering should be quickly ended. A Buzzard is just the bird for such work ; a scavenger designed by Nature for keeping a country clean, and healthy ; and where man has elected to fill that office himself, and dispense with assistants, the change has frequently been found to be the reverse of satisfactory. This is now recognised by the majority of gamekeepers ; and would the Buzzard but keep out of the way upon shooting days, most men would have little to say against it ; but the appearance of one upon the wing, at a critical moment, will often utterly spoil a grouse drive. Grouse can hardly be induced to face it, and will scatter, like chaff before a wind, rather than be driven in the direction a Buzzard has taken. For no other reason than this, the Buzzard is often cordially hated upon a grouse moor ; nor can one wonder at it, that a man, seeing the result of much labour, and organisation, ruined by the flight of a bird across the ground in front of him, should expend a cartridge upon it, next time they foregather upon the beat.

Some Sheldrakes, called here *Hwyad-yr-eithin*, or "burrow ducks," seen near Glan Dyfi, were no doubt breeding, as of yore, on the Borth links ; a last year's young one, that had been brought up with some tame ducks on a wayside pond, had fairly taken possession of two chicks, that had been hatched by a tame duck, a few days before I saw them ; and what was more curious still, was the way in which the little Sheldrakes seemed to recognise their relative, and to utterly refuse to have anything to say to their foster mother, or the common ducklings with which they had been hatched.

CHAPTER XXXII

Wire-Worms—Crane-flies and Skip-jack Beetles—Midge grass and rot in sheep—Natural enemies of grubs—Partridges—Snipe—Pheasants—Moles—Shrews—The Water Shrew—Development of races.

MUCH of the cultivated land here, particularly in the higher valleys, is much addicted to "Wire-Worms," against which the farmer is constantly waging war. His chief, indeed almost his only weapon, is lime ; and although this is expensive at the railway station, and its carting to the outlying farms arduous work, potatoes, and even corn crops, can hardly be grown without it, and its use is persisted in with praiseworthy perseverance. Peaty soil, bordering upon the hill, is often most infested with the "Worms," and the benefit derived from the caustic action of lime upon peat is well known ; but, in order to pay for the dressing, the peat must be of good quality, and hereabouts it is generally very poor and thin. The question of the relationship which cost bears to returns is, consequently, one which is ever recurring to the mind of an outsider ; but it is one that is so difficult of satisfactory solution, that it may be left to the interested party—the farmer—to decide for himself. Lime at any rate tends towards checking the ravages of insects, and it is with these only that we need concern ourselves.

The Wire-Worms recognised here are generally classed as of two kinds : the soft, but tough-skinned, dark-coloured, "Leather-jacket," and a harder, yellower, and altogether more wiry-looking creature ; but what relationship (if any) the one bears to the other, or whence they come, or where they go, are matters that receive but very scant attention. It may be useful, therefore, briefly to notice that the Leather-jacket is the larval, or caterpillar stage of a Crane-fly or "Daddy-long-legs" ; the other a "Click," or "Skip-

jack Beetle," in a similar state of immaturity. Of each family there are a large number of species, more or less common in the country, the larvæ of which live upon the roots of various plants, cultivated and otherwise, and whose power of doing mischief is chiefly limited only by their size, and abundance. Many of them abound in every field, and their presence here is encouraged by the grass growing all round, as well as upon the uncultivated spots, which, from the prevalence of stony mounds, and other causes, are so frequent in the fields. Where, as is so commonly the case round Llanuwchllyn, the potatoes, or other crops, are allowed to become overgrown with weeds, the well-being of the insects, and their grubs, is further assured, and their capacity for ill-doing augmented accordingly. Quite apart from the question of how far it pays to lime, it is a very short-sighted policy that permits the weeds to discount the chances of benefit accruing from the lime that is used; and, irrespective of either lime or wire-worms, it may safely be said that a little more attention paid to weeding on some of the farms could be productive of nothing but good.

Crane-flies are a sort of glorified gnats, forming the Genus *Tipula*, a branch of the Family *Tipulidæ*, which belongs to the Dipterous, or two-winged order of insects. More than thirty species have been recognised as natives of Britain, and round Llanuwchllyn several of the large forms are excessively numerous, and, from the farmers' point of view, nearly equally undesirable. All delight in damp pasture land, and they attack the roots of almost any plant they happen to encounter, those of oats being, perhaps, specially favoured by the most abundant of them all, *Tipula oleracea*. The females, easily recognised by their larger body, and its pointed extremity, may often be seen walking about over the land, stopping every here and there to insert the "tail" into the soil, and to leave an egg there. The number of eggs laid by each individual is large, according to Curtis,¹ at any rate exceeding 300. On one occasion I counted over 250, and estimated that there were about as many more, in the body of a female *T. paludosa*, which

¹ *Farm Insects*, p. 446.

closely resembles the common Daddy-long-legs in size and appearance, and is, at Llanuwchllyn, apparently more abundant.

Of the Skip-jack, or Click-Beetles, the number of species in this country is even greater than in the case of the Crane-flies, over seventy having been recognised as distinct. They form the Genus *Elater*, of the Family *Elateridæ*, and belong to the Order Coleoptera, which embraces those insects in which the first pair of wings have become converted into hard cases, or *elytra*, under which the second pair are folded up, crosswise, over the back, when not in use. This Order includes all our beetles, ladybirds, weevils, cockchafers, etc. The common name of the Skip-jacks has been bestowed upon them from the remarkable manner in which the beetles, when laid upon their backs, on a flat surface (their legs being too short to enable them to recover their normal position), right themselves by springing several inches (often more than a foot) into the air. This they do with quite an audible snap, or click, by forcibly depressing the extremities of the body, until a small spike on the thorax is suddenly released from a socket on the adjoining segment, causing the arched back to spring back to the horizontal position, striking the surface upon which the beetle lies, as it does so, with sufficient force to throw the insect into the air, when it generally alights upon its feet, and begins to run off. Should the first attempt fail, however, the process is repeated, at frequent intervals, until the desired result is attained. By the simple expedient of holding the beetle by the hinder extremity of the body, between the finger and thumb, the whole of this wonderful mechanism may be easily studied.¹

Fortunately for the agriculturist, comparatively few of the Skip-jack beetles are harmful to his crops, the larvæ of many of them living in decaying wood, and other substances. There is a pretty, metallic blue species, common on the moors, which subsists largely, I believe, on the

¹ For detailed observations on this point, see Darwin's *Journal of the Voyage of the "Beagle"* (9th ed., p. 22), etc.; and Curtis' *Farm Insects*, already quoted.

braken fern. The harmful members of the family are mostly small, dull brown, and black insects, frequently to be found on the heads of umbelliferous plants, and other flowers. The Wire-Worms, of which they are the progenitors, are only too familiar; but it is not so generally known that they spend several years¹ in that state, growing slowly, and feeding all the time upon the roots of many different kinds of plants. One of the most common of the beetles, round Llanuwchllyn, is *Elater lineatus*. Like others of its kindred, it reaches the beetle stage of its existence at various times during summer, and individuals of different broods probably pair, and lay their eggs, during different months. Some of them may even hibernate, for I have seen them pairing in spring, and again in July. In early June, I watched one female depositing her eggs on the base of a stem of the common "midge grass" (*Holcus lanatus*), one of the least useful grasses to the farmer, and often regarded by him as the cause of "rot" in sheep,—that dreaded disease to which Shakespeare was referring when he wrote—

"More dangerous
Than baits to fish, or honey-stalks to sheep;
When as the one is wounded with the bait,
The other rotted with delicious feed."²

Lime, as has been already stated, is believed to be one of the best deterrents to an attack of Wire-Worms. Like Leather-jackets, they dislike dryness in the soil, and draining is, therefore, also beneficial. Where they are troublesome in a garden, and where they can afterwards be collected, and destroyed, slices of potato, buried in the beds, will attract large numbers of them; but on a large scale, such methods are, of course, impracticable. In the fields, birds are amongst their chief natural enemies, particularly Rooks, Starlings, Seagulls, and Partridges; the benefit derived from the latter on cultivated land, both in the destruction of insects, and the seeds of many noxious weeds, being often

¹ *Five* in the case of the most common species.

² *Titus Andronicus*, Act IV. Scene iv.

apt to be overlooked. Plovers, Thrushes, Larks, and many other small birds, assist appreciably in the good work. Sir Humphrey Davy first called attention to the fact that the Jack Snipe is particularly fond of Leather-jackets, and his observation has since been repeatedly confirmed. Common Snipe are, probably, not less beneficial in their destruction of grubs of many kinds, their time for feeding, at dusk and in the early morning, coinciding with the periods of the greatest activity of Leather-jackets above ground. An examination of the contents of the crops of Pheasants has, also, frequently demonstrated their usefulness, no fewer than 1225 larvæ having been counted in the crop of one hen Pheasant killed in January.¹ The crop of a Land Rail, that had been killed against the telegraph wires at Llanuwchllyn, on 18th September, contained a mass of more or less recognisable matter, which was largely composed of Wire-Worms, but they could not be counted with any certainty. A Ring Ouzel, in June, contained upwards of fifty Leather-jackets; and a Creeper, picked up in the village street, in December, and brought to me by the school children, had its crop filled with small Wire-Worms, to the exclusion of everything else; but these, no doubt, belonged to one of the wood-eating species, and had probably been dug out of some decaying bough.

Moles are untiring in their search after all sorts of worms, and grubs, and so, also, is the common Shrew. The latter, with its insectivorous tastes, and its habit of hunting on, or very near, the surface of the ground, must, undoubtedly, render a considerable amount of service to the agriculturist, and the gardener, by the destruction of Wire-Worms, and Leather-jackets, as well as the mature insects, in the hedge banks, where otherwise they are almost out of reach: a service for which the best reward that it can claim is to be ignored. In Wales, it is still commonly regarded with dislike, owing to old superstitions, concerning damage to cattle, and so forth; and almost everywhere else it is killed, when seen, as "no'but a mouse!"

¹ See Curtis' *Farm Insects*, where much other interesting information on this and similar subjects will be found.



LESSER SHREW.



COMMON SHREW.

The Shrew is called *Cecrai*, or *Cecres*, and *Llyg*, about Llanuwchllyn, and is numerous, being often found at considerable elevations on the mountains. One person I met called it *Llygoden dear*, or "earth mouse," which is the exact equivalent of the Old English "Yardmouse," or "Erdshrew," from the Anglo-Saxon *Eorth*, earth, and *Schreava*, the name of the animal, the latter probably derived from *Schreadan*, to cut; *Schrif*, to censure bitterly; hence, "Shrewish," of a biting disposition.¹

The Water Shrew is, also, probably common in the district, since I found its bones, on several occasions, in the castings of Hawks, Owls, and Ravens, though I chanced only once to meet with the animal alive. This was in the rocky channel of the stream just above Llangowr,—a place about as unsuitable to the habits of such an animal as could well be imagined, one would have thought, yet it was quite at home, burrowing amongst the gravel at the bottom of a pool, and returning, every now and again, with some *bonne bouche* to discuss on the bank. What it was after was evidently the larvæ of water insects, as I picked up the torn cases of one or two Caddis Flies, where it had been busy. It was of the strongly contrasted black-and-white type, and nothing could have exceeded its beauty in the water. When swimming on the surface, the sides were so flattened out that a strip of white showed along each margin of the body; when underneath the water, the whole fur sparkled with imprisoned air-bubbles, that glistened like so many diamonds in their dark setting.

The fact that Shrews are so often killed by cats and birds-of-prey, but rejected by them as food, is well known, but the reason is somewhat obscure. Perhaps, indeed, no explanation is required beyond the rank smell of the Shrew, which may make it unpalatable, unless its captor happens to be especially hungry. On Aran, one afternoon, a Kestrel hovered near me, and presently dropped to the grass, about a hundred yards away. It then carried its prey to the top of a small bank some little distance further off, bit it, but left it there; and on my going to see what it was, I found a

¹ See Bell's *British Quadrupeds*.

poor Little Shrew.¹ On the other hand, I have frequently taken skulls of Shrews from the castings of Kestrels, Barn-and Brown-Owls, and once found a newly killed Water Shrew in the nest of a Long-eared Owl. From the castings of a White Owl, picked up one day near Llanuwchllyn, I unearthed five skulls of the common Shrew. I have seen a Weasel seize and carry off a Shrew, but whether or not it was eaten, there was no means of telling. The only occasion on which I tried a Ferret with one (it was a Water Shrew of the dull brown variety), it was devoured with apparent relish, although at the time the Ferret was not particularly hungry. A cat I have likewise seen eat a Shrew, though, more often, these dainty occupants of the hearth-rug will refuse them.

I once chanced to see a Water Shrew, of the Oared type, turned up in the middle of a stubble field by a ploughshare, in April ; and, though quite uninjured, it seemed to be so dazed by its sudden transference to daylight from darkness, that it ran blindly about, and was easily captured. It had, apparently, been asleep in a side chamber excavated off a main run, which looked like the work of a mole. None of the Shrews, however, seem to make any attempt at hibernation, for I have seen them about at all seasons, even during hard frosts when the ground was covered with snow, and have frequently found their runs excavated beneath the snow, when it had lain for some time. The brown type of the Water Shrew seems to be much more numerous, in many parts of the country, than the more handsome black-and-white form, and to be much more prone to turn up in outhouses, and such places. Some specimens are scarcely distinguishable, in colour, from the common Shrew, and from that mousy hue they vary through all shades of brown, up to black. The darker the back, the paler, as a rule, are the under parts, and the more decided the dividing line between the colours. I have seen brown individuals smoky white underneath, but never with the under parts so pure white,

¹ *Sorex minutus*, the only example of this, the smallest British mammal, seen at Llanuwchllyn ; but as no trapping was resorted to, it was not very likely to come in my way, and may not be rare.

as is almost invariably the case with black-backed specimens. The latter must be very much more conspicuous to their enemies, either upon land or in the water, than the more sombre coloured animal, and ought therefore, perhaps, to be regarded as the latest development of the race. So far as my rather limited opportunities for observing their actions in a wild state have gone, I have always thought that the black-and-white Shrews showed considerably more activity than the others, and were more on the alert. This is, of course, as it should be, if their superiority has rendered it safe for them to assume a more conspicuous garb than their ancestors; and it may be on account of their greater watchfulness that one sees them less frequently than their dull coloured relatives, and that they are so much less often brought into the house by the kitchen cat. I have sometimes thought, too, that the black-and-white variety was more exclusively aquatic in its habits than the others.

CHAPTER XXXIII

Curlews—These and other birds sometimes remaining on their nests—Curved *versus* straight bills—Survivals of ancient type—Food of Curlew—Farmers' friends—Eating eggs—Whimbrel—Dunlins—Variations in form and plumage—Garden pets.

THE Curlew is one of the characteristic birds of most moorland districts, and breeds, in some numbers, all over the mountains of Merionethshire. Its eggs very often fall a prey to the Crow; and though, in the first instance, four is the almost unvarying number of a clutch, subsequent nests frequently contain one or two fewer. It thus becomes not uncommon to find a Curlew sitting upon three, or even two eggs, and more than once I have found one incubating only one. In very wet places, the nest is often made upon a raised tuft of coarse grass, or rushes; in other cases, the eggs are laid in a shallow depression, or scrape, on the bare peat from which the heather has been burnt. In most instances, some sort of attempt is made at a rude lining of grass, but frequently this is entirely neglected. As a rule, the wary nature of the bird prompts it to leave the nest on the first appearance of danger, and this it usually effects by running, with lowered head, taking advantage of every inequality of the ground to keep out of sight. At other times, however, it flies directly from the nest, rendering the finding of it then a comparatively easy matter. Much more rarely it remains upon the eggs, and with head laid flat, and feathers closely compressed, will permit of a very near approach, in the hope that the intruder will pass it by undiscovered. I have, two or three times, stood within a few paces of such a squatting bird, long enough to enable me to take a snapshot of her, and to change the plates in the camera. Golden Plovers will sometimes pursue precisely similar tactics, and very likely most of the members of the family

may occasionally do the same. I have seen both the Oystercatcher and the Ring Dotterel attempt to escape observation by remaining crouched upon their eggs, on a bare, gravelly beach, and once stooped down and actually caught that shiest of birds, a Redshank, upon her nest. The Common Sandpiper generally flies, or runs, off before she is too nearly approached, but will often sit quite close; the Snipe generally remains till she is flushed at one's foot, but not always; and the same applies to the Woodcock, which sometimes attempts to steal away unobserved, as she can generally do, easily enough, in the thick covert she usually frequents. A Dunlin sometimes sits close, but as frequently runs away; a Greenshank often sits close, even on quite bare ground.

The Curlew is *Y gylfinhir*, or *Gylfinog*, here, sometimes *Glofeinin*, i.e. *gylfin-*, *gylf-*, or *Clyfin-hir* = "long beak." Passing the winter on the not far distant seashore, it is liable to appear round Bala Lake at almost any time, but comes back to the hills, in force, about the end of February, or the beginning of March. Throughout the summer, and autumn, little flocks may often be seen round the shores of the lake. The eggs are seldom laid before the end of April. On 7th May, one was picked up, on Bwlch-y-groes, without a shell. Newly hatched young may be found at any time, from the middle of May, till well on in July. The accompanying illustration is from one of several seen on 21st May. As the photograph illustrates, the bill is, at first, quite short and plover-like; when the bird is half grown, it does not generally exceed an inch-and-a-half in length, and for a week or two it shows little or no disposition to curve downwards. Why it should be curved at all is a problem not easily solved. In feeding upon soft ground, the bird will repeatedly bury its bill in the mud, right up to the feathers, in order to reach its food; and that a straight bill is a much more effective instrument for such dibbling work becomes painfully evident when two such birds as a Curlew and an Oystercatcher are kept together, tame, in a garden. When the ground is *very* soft, after rain, the former is able, to some extent, to probe the

lawn for worms, but it never does so with any apparent comfort, and, if left to its own resources, would speedily starve, where the other has no difficulty in finding a plentiful supply of fat worms. One which I kept for some time beside an Oystercatcher seemed to be so conscious of its inferiority as a worm-catcher, that, except on very wet days, it was generally content to follow its companion about, on the offchance of picking up some crumbs from its table, or of committing an occasional theft. At the latter game it became rather an adept, though the Oystercatcher was always able to hold its own, if it came to a trial either of strength or cuteness. Very often, however, the latter resigned its worm without protest, as though aware of the Curlew's disability, and its own superior skill to procure more. Whether on the bog, or by the seashore, it is difficult to see how the curved bill can have any advantage over a straight one; though that, in competent hands, it is sufficient for the work assigned to it, is testified by the excellent condition in which a Curlew is usually able to keep itself.

The length, and curvature of the bill, is subject to a good deal of individual variation, not only in Curlews, but in several other birds—*e.g.* Dunlins, Godwits, Water Rails, etc. This divergence from type is not apparently effected by age or sex, and no such inconsistency occurs—at least to nothing like the same extent—amongst birds which have straight bills. The apparent uselessness of a curved bill has already been remarked upon; and in view of the fact that extremes of curvature are decidedly the exception, it is questionable whether the long, and much curved bills, may not be survivals of a type that is being replaced by shorter, and straighter, but more serviceable organs.

The Curlew's bill of fare is very varied. On the seashore, it consists largely of small molluscs, crustaceans, lug-worms, *et hoc genus omne*; inland, it includes a considerable quantity of vegetable substances, such as moorland berries, some of the smaller gilled fungi, and grain. On a field of spring wheat, a considerable amount of pilfering is done by the wily flock of Curlews that are invariably so fond

of resorting thither, and which are always supposed to be "after grubs and worms." I have taken a handful of wheat from the stomach of one killed under such circumstances; and again, in autumn, when the birds were fighting to the seashore, after a day's foray inland, have found, on opening those shot, that some of them had been feeding upon barley. There was never very much of it in any individual bird, but often quite enough—from ten to fifty pickles—to show that it had not been picked up accidentally with other food. Of course, any grain gathered from the stubbles is, in any case, lost to the farmer before it comes in the Curlew's way; and it is not for a moment suggested that, on such grounds, the birds ought to be regarded as enemies of the agriculturist. All the *Limicolæ*, so far as they come upon his land at all, must, on the contrary, be included amongst his best feathered friends. A large portion of their normal food, at all times, consists of various kinds of worms, slugs, and caterpillars, very often just those species which are most apt to do serious damage to cultivated crops.

Curlews hunt diligently for all sorts of molluscs. I have taken more than twenty of the common Hedge Snail (*Helix nemoralis*) from the crop of one shot upon the links by the seaside. These snails are swallowed whole, and the shells are comminuted, along with those of small Mussels, Periwinkles, and the like. The Garden Snail (*H. aspersa*) is often too large to swallow whole, and is then sometimes broken by repeated dashing upon the ground, or against stones. The Curlew always seems to prefer to bolt its food entire, however, and large specimens of *H. aspersa* are frequently abandoned after one or two ineffectual attempts to break the shell. The Curlew is one of the few birds which really seriously tackle the common big Black Slug (*Arion ater*). On the moors, where these are so abundant, I suspect they frequently constitute no inconsiderable item in the bird's daily bill of fare. The grass-feeding caterpillars of several of the Noctuæ, the Antler Moth (*Charæas graminis*) for example, are, also, often excessively abundant in the Curlew's haunts, and it then does good service to the

sheep farmer, by helping to reduce their numbers. It is, likewise, one of the few feathered foes of the Fox Moth (*Bombyx rubi*), another common insect in most moorland districts. I do not think that it touches the hairy larvæ of this moth in autumn; but after hibernation, when the full fed caterpillars come out, to wander about for a short time before spinning up, just when the Curlews have returned to the moors, they seem to be more palatable, and then they have no more deadly foe. The pupæ are even more sought after than the larvæ, and are torn from their silken hammocks, and devoured with avidity. Rooks, also, are very partial to the chrysalides of *B. rubi*.

Another of the "unconsidered trifles" that, occasionally at least, go to build up the Curlew's tissues, is the eggs of other birds; a fact well known amongst some of the more observant Highland keepers, but not, I believe, generally recognised elsewhere. For many years I had suspected such occasional divergence from the straight path of *meum et tuum*, before I could actually bring myself to believe in the guilt of the Curlew. I had more than once seen it leave the neighbourhood of a rifled Pipit's nest, under suspicious circumstances, and had frequently known it caught in a trap baited with an egg for crows, but had always been willing, and indeed anxious, to give it the benefit of any doubt. When, however, I began to find that it was quite commonly poisoned at an egg, in which strychnine had been put, it could no longer be pleaded that it was curiosity only that led it into the egg-baited gins. Since then I have had no doubt that it is accountable for the destruction of at least a few small birds' nests upon the moors. In connection with the egg poisoning, I cannot resist telling a story against a Perthshire keeper of my acquaintance, especially as it is now so many years ago since it happened, that even should it chance to meet the eyes of any of the interested parties, it can hardly do any harm. At the time, the very suspicion, by poor "Laddie's" bereaved master, of foul-play, would at least "hae provokit bluidshed"!

The way I came to hear the story (which was true, I believe, in every detail) was that M'Cawmill and I had

been discussing Curlews, and I had expressed an opinion against their stealing eggs, when he said he could prove it "beyond possobeelity o' doot," and this he proceeded to do in something like the following words :—

"Ye'll mebbly mind the splore there was ower the disappearance of the young laird's 'Laddie' a while syne? A-weel, as sure as death, it was her nainsell had te sink the puir beastie i' the black tarn, all fornenst ane o' thae same batherin' whaups. I had pit doon an egg on the hill for a corby, an' a whaup must needs come an' pissen hersell. I threw her into a hole, an' twa days later 'Laddie' maun hae fished oot the body, for there he lay, deed aside it, wi' its heed eaten aff!"

It is very commonly stated in books (*cf.* *Yarrell*, *Saunders' Manual*, etc.) that young Curlews, before they go to the seaside, are good eating, but that afterwards their flesh becomes rank and fishy. Just the reverse has generally been my experience. I have shot them on the hills, in August, and again in turnips, etc., later in the season; but have seldom found them, then, at all to be compared, as table birds, with those shot during winter, at or near the seaside; and young birds I have usually considered less good to eat than old ones, when killed on the moor. There are, of course, exceptions both ways, and the difference of a meal or two may sometimes be sufficient to influence flavour; but, as a general rule, I feel confident that there must be many people whose experience will tally with my own, contrary though it may be to that expressed by so many writers, both before and since the days when popular opinion found expression in such couplets as—

"A curlew lean or a curlew fat
Carries twelpepence on her back."

On the coast of Merionethshire, the Whimbrel, or "Jack Curlew," is known as *Coeg-gylfinhir*, or *Coeg-gylfinog*, but inland it is rarely recognised. I only met with it twice in the neighbourhood of Llanuwchllyn; once in August, on the side of the lake, and again, on 20th September, when one flew over my head near the summit of Aran. Like its

congener, it also varies its diet by occasionally picking grains of wheat, or barley, from the fields in spring. I have found grubs of the Crane-Fly (*Tipula oleracea*) in the stomach of one killed, inland, in May; and once shot one, on the coast, which disgorged a small Butter-fish (*Centronotus gunnellus*). Like the Curlew, it also feeds largely on slugs and snails, when inland; and swallows, whole, numbers of *Helix nemoralis*.

On the flat top of the steep, conical hill, above Tynycfn, in threading my way through amongst a series of little pools in the peat, I was agreeably surprised, one morning, to flush a Dunlin,—a bird I had not previously met with on the moors here, although one or two had, from time to time, been noticed on the margins of the lake, as well in summer as during spring and autumn. Sitting down for half an hour, I soon found that there were at least three pairs breeding there; and as I watched their entertaining frolics, and listened to the tinkling purr of the males—a song, by the way, which always reminds me of a tiny alarum-clock suddenly set going—I could not help ruminating (as I had often done before, under similar circumstances, further north) upon the singular appropriateness of some of the common names applied to this bird. My old friend, the late Robert Gray, has remarked (*Birds of the West of Scotlana*): “The Gaelic name of *Pollaireun* . . . signifying ‘bird of the mud pits,’ expresses in a single word its habits better than any English or Scottish synonyme.” *Dunlin* (which from an early spelling as *Dunling*, Mr Harting¹ has suggested might be a diminutive, like gosling or duckling) is at once suggestive of the bird’s colour. Mr Swainson² says: “Some derive the name from Gael. *dun*, a hill, and *linne*, a pool; because it frequents the dunes and pools by the seaside”; but if that derivation be accepted, I had rather omit the reference to the seashore. Nothing could then be more descriptive of the bird’s fondness for frequenting and nesting beside the little mossy pools near so many of our mountain tops, just as this little colony are settled here.

¹ *Zoologist*, 1881, p. 444.

² *Folk-lore of British Birds*.

Purre, or Churr as it is sometimes written, is equally expressive of the Dunlin's spring "song," or of its most common call-note at all seasons. On the Welsh coast its most common name is *Pibydd rhuddgoch*, but it is not very common, and hardly noticed inland. I scarcely met with a single person on the hills who knew it, and only myself came across it nesting, elsewhere, in the neighbourhood of some little tarns near Llyn y Figen, to the west of Aran Mawddwy; on the boggy ground near Cwmtlylo; and on the wide stretch of moor between Blaen Lliw and Trawsfynydd; but at none of these stations was there more than a pair or two. Long ago it used to breed on the marshes at the mouth of the Dyfi, and probably still does so, as I saw some birds, in summer dress, on the shore there, at the end of June.

So long ago as 1879, I became convinced that the Dunlin carries its young on the wing, as Woodcock are well known to do, and as I have already recorded my belief that the Sandpiper does, and have several times, since, had strong circumstantial evidence that such is the case, without, however, being able to prove it by actually witnessing the feat. I have found very young birds where I felt sure they had not been hatched, nor had reached by their own unaided efforts; and have also seen old ones, very tame and anxious, about one particular spot, in the evening, while, early next morning, they had transferred their cares to quite another part of the moor. It is disappointing to be still unable to speak more definitely upon so interesting a subject, after the lapse of so many years; but with opportunities recurring ever less frequently, as hills grow steeper, and nesting stations become more and more difficult of access, I fear it may never now fall to my lot to settle the question beyond dispute, and I therefore commend it to the notice of younger men, as one well worthy of their close attention, and one that is, moreover, not at all unlikely to repay it.

So much has already been written by others, concerning the variation in size, and plumage, of the Dunlin, as well as upon its general habits, that further comment may seem

superfluous. Since, however, these chapters are intended rather for young people than for finished naturalists, I must crave the indulgence of the reader for the following remarks.

On the seashore, I have often watched Dunlins swimming across little rock-pools, or when overtaken by an incoming wave; and, upon the moors, they never hesitate to adopt that means of locomotion, in order to reach the other side of their miniature lakes, or when a tuft of weed in mid-water has to be examined. When incapacitated from flight, either a young, or old bird, both swims and dives well, to escape danger. Another pretty habit which may be studied alike upon the sandy beach, and on the moor, is the way in which a male will sometimes run about after his mate, with lowered head, and wings upstretched to their fullest extent above his back, trilling out his little musical "song" the while. A rival male is sometimes chased away with similar demonstration. When the wings are raised in this way, their silvery white under-surface becomes very conspicuous, and contrasts well with the black patch upon the breast. But the extent, or completeness, of this black patch is subject to as much variation as are the upper parts of the plumage; at least, this is so in the birds which breed in this country.

Whether the amount of black on the breast of a breeding Dunlin is any indication of the age of the individual, I do not know, but I rather doubt it. As a rule, in my experience amongst our home-breeding birds, I have generally found the black, however imperfect, considerably more pronounced in the male than in the female, it being often represented in the latter merely by a few black spots, but, inland, it is seldom so complete in either sex as in birds seen, and often shot, on the coast (where they were probably only passing migrants bound for, or lately returned from, higher latitudes) in April and May, and again in August and September. Much the same thing is noticeable in regard to our home-breeding Golden Plovers, and I am inclined to think that, in either species, specimens in what may be termed *typical summer plumage*, are decidedly rare on our moors, if, indeed, they occur at all. In the feathers on the



CURLEW'S NEST.



CURLEW JUST HATCHING.

upper part of the body, the variation amongst Dunlins is still greater, scarcely any two individuals exactly resembling one another, at any season, unless it be when the complete winter dress has been assumed. That state is, however, comparatively scarce amongst the flocks which frequent our shores. The majority of these consist, no doubt, of young birds; but still there are always plenty of adults, and in a large number of both young and old the moult seems to be protracted from autumn right through the winter, and, with only slight intermission, to be continued throughout the summer also, so that a considerable proportion of the birds are never in either *full* winter, or *full* summer plumage. As late as the 6th November, I have shot individuals in nearly complete summer dress, both as regards their black breast, and the rusty-and-black back feathers; and others, up to the middle of May, still retaining amongst the grey scapulars, etc., of winter, a few of the worn and faded feathers of their previous summer's plumage. Probably the exigencies of migration control the moult in autumn, and, later in the year, it may be retarded by inclement weather. Birds in good condition, arriving early at their winter quarters, may rapidly complete the change of their feathers—I have shot them in complete winter plumage before the middle of October,—while later arrivals cannot afford to lose so many feathers at once, and before the cold stops moulting altogether for the time, have only put on a part of their grey coats. Young birds, I am convinced, rarely, if ever, assume a real winter plumage during their first season.

Larger and smaller races no doubt exist amongst Dunlins, as amongst many other birds, but they seem to mix freely together at all times; for large and small examples may be shot out of the same flock, and examination will prove that neither age nor sex determines the size. The relative size, and downward curvature of the bill, is an equally unreliable guide, in Dunlins as in other birds, but this has already been particularly touched upon on page 264. It has been thought that the large race of Dunlins may have the broadest, and most turned-down bill, but I have had quite small specimens with straight bill, of not more than the average length, yet

quite as broad at its base as any of the others ; and long bills, of no more than normal width, are quite common.

In a greenhouse, or in a small garden, if the latter can be kept free from cats, any of the smaller Sandpipers make admirable pets, and the Dunlin is at the same time one of the easiest to obtain, and most quickly becomes tame. I have kept several, at different times, in a greenhouse, and have found them most entertaining, as well as very useful in keeping down all sorts of creeping things within their reach ; and some of them have become so familiar, after only a week or two's confinement, as to run purring up to me to be fed, or closely follow me about when pots or stones were being shifted. Worms, slugs, earwigs, and woodlice, are all instantly picked up, and carried off to the water dish, to be soaked, and dabbled, before being swallowed ; and when such natural food is not forthcoming, the bird is quite content with small bits of flesh, or fish, and will also eat boiled rice and bread crumbs. Young birds so kept have scarcely moulted a feather with me until spring, when the new plumage all came red.

CHAPTER XXXIV

Local migration—Pairing of birds for life—Courtship, and the cause of song
—Plumage—Stonechats—Lichens as food—Seasonal moults in Chats—
Welsh names.

So comparatively few birds spend the winter round Llanuwchllyn that it is a very favourable station for observing movements of local migration. Indeed, the fact that it lies outside any of the regular routes taken by merely passing species lends additional interest to the noting of the arrival and departure of those that come to breed. Whether some of these may have wintered in places not very remote, matters not; here they are as much mere sojourners, with a single purpose, as if they had come from the centre of Africa. Some of them may never have left the British Islands; though from the fact that they often arrive in considerable bands, the sexes often separately, I should be inclined to suspect that the majority of them had travelled further, and had not dawdled much by the way. In so restricted an area, scant alike in cover and in resident birds, anyone moving about a good deal, and having an eye for such things, can hardly fail to notice some of the little flocks probably within a few hours of their arrival in the valley. In some species, as the Pipits, it is not possible to distinguish between the sexes; but in others, like the Chats, the males are easily recognised, and are generally seen to arrive by themselves, and to precede their partners by a few days, or may be even weeks. This is very interesting, not only as showing a similar sequence to that usually observed upon the east coast, and as indicating that there has been no tarrying *en route*, but also because it raises the question of whether the sexes winter together, and whether pairing for life can be the rule amongst such birds.

In any case, it is obvious that no courtship can be indulged in by the way, amongst those species in which the sexes arrive in separate flocks ; and it seems improbable that the rule, which governs their movements, will be departed from by the Pipits, Warblers, and other small passerine birds, in which the sexes cannot so easily be distinguished. With the Swifts, and Swallows, and perhaps with the Sandpipers, the case may be different ; but whether it be so or not, the procedure here seems to be much the same, and is somewhat as follows :

A party, on arrival, settles itself in the valley for a day or two (often by the side of the lake, or about the village ; but, wherever the spot fixed upon may be, an abundance of food is probably its prime attraction), and its breaking up is often a very gradual process. Amongst the controlling influences may be put the state of the weather, and the arrival of the opposite sex ; but the first fine morning, after the latter event has taken place, will probably see some pairs pushing their way up the glens to favourite nesting sites. Others follow more slowly, having perhaps experienced greater difficulty in arranging their domestic affairs, or being in less of a hurry to begin housekeeping. In any competition that takes place, the older males, being the strongest, will, in most cases, presumably, have first call in wives, and will then lead the lady of their choice to the well-remembered home of former years. How interesting it would be, could we know whether it is always the old wife that is brought home ! Many circumstances, such as peculiarities in the type of egg laid, would seem to point to the fact that it is so ; but, in that case, we must surely conclude that pairing for life is the rule, not the exception, amongst birds, and that would give rise to several other interesting questions. In such species as the Stonechat, for example, it is obvious that at any rate the majority of those individuals, which winter in this country, remain paired ; it is equally apparent that, in the case of immigrants, the sexes arrive in different parties. Why is this ? Nature is not fond of wholesale deviations from rule, in matters of this kind ; and even to suppose that stay-at-home birds may

be subject to one rule, and migrants to another, does not dispose of the difficulty. There are many nesting sites of the Stonechat, in this country, occupied year after year by birds whose plumage seems to proclaim them to be immigrants, but in which one or other of the pair, if not both, must be old friends returned after a winter spent abroad, and why should we suppose that only one sex returns to the old site? Yet, if both of the pair are the same, and it be conceded that they had paired for life, why do the sexes travel apart, the males arriving days, or even weeks, before their consorts? Is it possible that they retain their affection for one another, and yet do not spend the winter months together? It would be interesting if someone, who has had opportunities of observing Stonechats in their winter haunts abroad, could tell us if they are then seen in pairs. If it be objected that there is not sufficient difference in plumage, between migrant and resident Stonechats, to enable the one to be distinguished from the other (as perhaps there may not always be), Wheatears may be substituted for them, without very materially affecting the argument. With the latter, it is true, the sexes are seldom separated by more than a few days; but it is not very obvious why there should be even this difference, if the birds live together throughout the winter.

A good deal of theorism is often indulged in on the attractive theme of courtship being the chief cause of bird melody, and the idea is such a pretty one that to risk upsetting it may savour of vandalism; but however much, or little, singing takes place before pairing, it is obvious that, in every case, most of it follows that ceremony. Very little song is heard before the dispersal of the immigrant bands; but from the hour a pair take up their residence where they intend to nest, the cock sings incessantly, till the female is sitting, or the young are hatched. His song is, therefore, the outpouring of a contented heart, or a wooing of the bride already brought home, rather than a means to win her. It is a mistake, also, to suppose that singing entirely ceases as soon as the duty of ministering to the wants of a family begins. That may contribute to

the minstrel's silence during the greater part of the day, but he seldom fails to find time for a stave or two at even ; while for an hour or so after dawn, the welkin rings with song, throughout the summer, every bird contributing its quota. The arrival of the moulting season, however, stops the music, and only a few species sing again before winter puts an end to it altogether. Nor, on the other hand, can it be said that the fair one is captivated by mere display of dress. There must be other deciding virtues than these in the avine world ; for, in a large number of cases, the full plumage is not donned till after partners have been chosen ; and, in fact, many males never complete their nuptial garb at all.

The Stonechats which spend the winter in this country, seem invariably to do so in pairs, though two or three pairs may sometimes consort together, in certain favoured spots. Their habits, at that season, better justify their common name than at any other ; for, in winter, it is comparatively rare to meet with them far from the neighbourhood of rocks, and stones then form some of their favourite perches. The name usually given to the bird, in Wales, is *Clochdary-cerryg*, or "Clucker of the rocks," recalling the Gaelic *Clacharan*, or *Cloichearan*, and its appropriateness was forcibly borne in upon me, one very cold day in early February, when during a fox-hunt, in deep snow, the only occupants of a bleak range of rocks, high up on Rhobell Fawr (2300 feet above the sea), were found to be a pair of these birds, which had taken up their winter quarters there, and greeted the unusual concourse of men, and dogs, with their familiar notes of *Hey! chuck, chuck*. It is, however, in just such inhospitable spots that the Stonechat most delights to winter, in a mountainous country. Round Llanuwchllyn, similarly isolated pairs were met with, each year, on the Ddwallt, and above Buarth-meini ; but none were ever seen, at that season, in the lower valleys. Indeed, the birds seem more inclined to "push out," than to "draw in by" as most other live creatures do, on the approach of bad weather ; and for three or four months of the year their only feathered companions are the Ravens, or Falcons,

which may resort thither to roost, or perhaps a Wren. If the snow lies for any length of time (as it often does in their haunts further north, though more seldom here), the hermits may be forced to retreat to the neighbourhood of the nearest shieling, there to eke out a living about the middens, or hay stacks ; but on the first abatement of the storm, they withdraw again, as though ashamed to be seen in their dingy winter dress. Such journeys, for birds like Chats, are, of course, no great undertaking ; but I have often wondered what becomes of the poor Wren, when supplies fail, and the only retreat is across several miles of snow-covered moor. Yet after a long spell of very low temperature, and much snow, one year (in the north), when all our birds were sadly thinned in the low country—five Wrens, all frozen to death, being found huddled together in one hole in the garden wall—I well remember finding a pair of Wrens, in April, nesting contentedly in a rocky, and quite treeless gorge, high up upon a mountain, where the probability was they had weathered the storm that decimated their lowland relatives.

It would be too near a crime to kill such hardy little birds that have dared to bide all the foul blasts that blow in such regions, for the mere gratification of one's curiosity as to what their food had consisted of ; but I once picked up a dead Stonechat in the snow, far out upon the moor, and took the opportunity of examining its crop. It was a female, in very good condition, with nothing to indicate the cause of its death. Its stomach contained, in addition to some grass seeds, several bits of stone lichen, apparently *Parmelia saxatilis*. Seeds doubtless constitute no inconsiderable part of the ordinary fare of such birds during winter, though insects, worms, and grubs may be preferred when obtainable ; and probably the reason of their resorting so frequently to hay stacks, on a hill, is for the grass seeds they contain, as much as for the creeping things they give shelter to. May it not be from the Stonechat's discovery of the esculent virtues of lichens, that its love of wintering amongst rocks, overgrown with these plants, has arisen ? There does not appear to be any reason why birds should not appreciate

such food as much as other animals do ; but, at present, I can do no more than throw out the suggestion.

Lichens are well known to contain a considerable quantity of starchy matter—lichenine—which makes them a valuable food for domestic stock, where better is not to be had. Cattle, reindeer, and pigs, are wintered on very little else than “Iceland moss” (*Cetraria islandica*), and “Reindeer moss” (*Cladonia rangiferina*), (both natives of our moors) in the Arctic regions, and these are also turned to account as human food. They still find a place in the British Pharmacy as an occasional diet for invalids, and in Russia an alcoholic spirit is distilled from them. Deer, and cattle, living upon nothing else, in Greenland, are said to thrive well upon such food, and to give excellent milk. On our moors, goats, and deer, are fond of eating lichens of several kinds, particularly those growing upon birch, and hazel, while sheep will sometimes greedily devour the grey patches growing amongst damp moss, though they discard the latter. When entombed under snow, a sheep will nibble every morsel of lichen from the rocks within reach ; and after a storm, I have sometimes noticed where the golden patches of *Parmelia parietina*—one of the familiar “stain craigs,” or “staneraw”—had been eaten by voles from a wall. What more likely, then, that birds, too, may find lichens useful on occasion ?

So much for some of the possible foods of the Stonechat, and its neighbours ; let us now turn to its changes of plumage, and some of its other habits. Those individuals that winter in this country—but a fraction of those which breed here—invariably do so in pairs ; and on the return of spring, they seldom move very far from their winter quarters, in order to nest. Very often, they only adjourn to some neighbouring grassy slope, or to a patch of heather, or gorse, about the roots of which they build ; and as soon as the young are fledged, they are brought back to the greater security of the rocks. Here they remain till able to take care of themselves, after which they may wander away, in a straggling party, across the moors. The old birds, meanwhile, remain behind, and frequently bring off a second

brood ; when these are ready to fly, their parents may accompany them to lower ground for a time ; but before the approach of winter, the old birds will be back, alone, at their old haunts. What becomes of the young ones is an open question ; they may migrate, but at all events they do not return to the hill. The adults, meantime, have moulted into a very dingy plumage, the males often hardly to be distinguished from the females at a little distance ; and this, I take it, is their only real moult in the course of the year. As the season advances, the colours of the males become gradually brighter, perhaps by the wearing away of the margins of some of the feathers ; but they are hardly ever in anything approaching what we are accustomed to look upon as "full summer plumage," when they begin to breed, and are, perhaps, at their best just before the autumnal moult, back to winter dress, takes place. The only full moult of resident Stonechats is, thus, from the faded plumage of the previous winter, back to a winter plumage. Whether a few body feathers may not be shed, in spring, I am not prepared to say ; but while I think it not unlikely, I am convinced that any moult that may occur at that season, is only an extremely limited one.

Our immigrant Stonechats, on the other hand, arrive in spring in a much brighter plumage than is ever assumed by the stay-at-home birds ; and it is worthy of consideration whether this may not be owing to their assuming their new coats in much warmer climates than ours ; where, in fact, their yearly moult takes the form of a change from a sort of "summer plumage" back to a very similar state, and that they, therefore, never go into the dull "winter plumage" of our resident birds at all. These immigrants seem to be in full plumage when they arrive here in March, or April ; and, I fancy, generally choose to nest on lower ground than that frequented by their resident relations. It is proper to add that these suggestions upon moult are entirely based upon observations made in this country ; and although they are the result of a good deal of careful study of the question, it must remain for others to determine how far they can be borne out by an examination of skins from

southern climes, where our migrant Stonechats may be supposed to pass the winter. I have merely attempted to sketch what appears to me the most probable reason for the marked differences which occur amongst our breeding Stonechats, and it is not unlikely that the rules which govern them may also apply to other species. That the bright plumage is not due to the age of the individual is obvious from the fact that the birds breeding, year after year, in any given place, are always in a similar state; and in the case of residents, the pair may be kept under continuous surveillance, not only from one winter to the succeeding summer, but over a series of years. It is significant, also, that in the nearly allied Whinchat, which only very rarely winters in Britain, no such marked differences in plumage occur.

In the next chapter, some more particular notes upon the arrival of each species at Llanuwchllyn will be found. Before closing this one, it may be added that the Whinchat goes here under the name of *Crec-yr-eithin*, or "chirper in the gorse."¹ The Redstart is, appropriately enough, *Rhongach*, or *Rhonell goch*; elsewhere it is sometimes called *Llostrhuddyn*, and *Tingoch*, each of which signifies "red tail." The Reed Bunting is *Penddu-y-gors*, "black head of the marsh"; *Bras-penddu*, "black-headed bunting"; and *Golfan-y-gors*, "marsh sparrow." *Gwylan* is Gull, and the Black-headed species is *Gwylan-benllwyd*, or *Gwylan-penddu*; Herring Gull, *Gwylan-y-denweig*; and Lesser Black-backed Gull, *Gwylan-gefnddu-leiaf*; the young of each is *Gwylan-lwyd*, grey gull. On the sea-coast an Oystercatcher becomes *Piogen-y-mor*. The Creeper is *Cropiedydd*, or *Crepianog-y-coed*.

¹ This name also appears as *Clochar-eithin*, or *Clep-yr-eithin*, gossip of the gorse.

CHAPTER XXXV

Migration notes—Tree struck by lightning—Bleak spring weather—Kingfishers—Unusual nesting site—Curious Grouse eggs—Waxwings and Hawks—Fate of rare or conspicuous birds—Cats—Natural check on increase of albinos.

IN the following pages some record of the arrival of birds at Llanuwchllyn, is given in chronological order, it being easier to avoid tiresome repetition by dealing with the subject in that way than in any other ; while, at the same time, the association of different species together is often of much greater interest than if each were treated separately. This arrangement also allows of occasional reference to the weather, which must always have an important bearing upon migration ; though it is noteworthy that in each year almost every species was observed within a day or two of its previous record. It will suffice, therefore, to take one year only, and, except when otherwise mentioned, 1905 may be understood. Although a few Wagtails, Meadow Pipits, and Reed Buntings, usually pass the winter in the neighbourhood, their numbers are as nothing compared with those that arrive in spring ; and in the following notes, only such birds as, from their behaviour, appeared to be obviously new arrivals, are taken account of.

March 8th.—Many Curlews passing overhead, and a few beginning to settle upon the moors. Two male Pied Wagtails together in the village.

13th.—Curlews, and Peewits, well established on the moors, and uttering their spring notes. (The first plovers' eggs appeared in Bala shops on the 17th.) Several more male Pied Wagtails have arrived, and little troops of Meadow Pipits. A pair of Reed Buntings, apparently new arrivals, on one of the fields. A flock of about fifty Larks on the hillside ; comparatively few of these breed here.

16th.—A few Tree Pipits, *many* more next day ; a party of five or six Reed Buntings, all males. Three Stonechats near the village, curiously enough two of them being females. In 1906, quite a number, some dozens altogether, of cock Stonechats arrived on 5th March, not a single female amongst them, but accompanied by the single male Whinchat noticed below. The Stonechats remained together, scattered over the fields in little parties of from half a dozen to twice that number, till near the beginning of April, after which, females having arrived, they began to disperse. They were all in brilliant plumage, with very red breasts, and their white epaulets so clean as to be suggestive of Pied Flycatchers as they flitted about from stone to stone, or from pillar to post. A single male Wheatear ; a number of Grey Wagtails, all in pairs. At the lake, a large flock of Black-headed Gulls ; and a single Redshank,¹ which remained there alone, until the 6th April, when two others arrived, and a day or two later one pair had taken up their position in the field in which they nested ; not till a week later did a fourth bird arrive, and a second pair establish themselves. These two pairs were the only Redshanks which nested here this season. Over fifty Wigeons still on the lake with other ducks. Weather wet and stormy, with westerly winds, which have prevailed for the last few days.

29th.—Still very stormy, a single loud clap of thunder two nights ago, and to-day I saw an old ash tree on the side of the lake at Llangowr, which the lightning had struck. A single strip of bark had been torn off, from near the top of the trunk to the ground, and lay shivered and scattered around, but the tree not apparently otherwise damaged. There was no visible mark on the exposed wood, and the tree came into leaf in due course. The bared strip showed at first a narrow and tortuous course ; but near the ground it became a full span in width, and quite straight.

A Robin's nest in the garden with one egg, well in the

¹ The Redshank in Welsh becomes *Goesgoch* ; the Greenshank, *Goeswerdd* ; the Golden Plover, *Cwtiad-yr-aur*, etc. ; *Cwtiad*, or *Cwtyn*, *Rhostog*, and *Bronddu'r twynau* are applied to plovers generally ; the Lapwing being distinguished as *Cornicyll*, *Cornchwiglen*, *Chwilgorn-y-gwynt*, and *Gwai-fi*, "woe is me," a name arising from its melancholy cry.

way of the cat which shortly afterwards destroyed it! A single Coal Tit likewise there: many more Wagtails, both Grey and Pied; large flocks of Wood Pigeons flying near the lake, fifty to a hundred birds in each, and with them several Stock Doves. A single Dunlin, in winter plumage, appeared on the side of the lake, and remained all alone till 5th April, after which it disappeared, no others having been seen meanwhile. Dunlins were first met with, upon the moors, on 10th April. A number of Goldfinches have returned during the last ten days, in pairs, and they are now settled, and in song, in several places. Flocks of Golden Plovers about, heard many times, at night, during last few days. A pair of Golden-crested Wrens have apparently decided to nest in some Douglas firs in a garden in the village; one has been occasionally seen there for a month past.

April 5th.—A bitterly cold morning, with heavy showers of snow and hail, wind due north. The first Willow Wren appeared, though it did not presume to sing in face of such wintry weather. Two more next day, and many on the 12th, after which they became general. Two Swallows, also, to-day, much buffeted about by the storms of hail; likewise a dozen Sand Martins.

6th.—Ground covered with snow; it melted in the valley after the sun got out, but all the hills remained very white. Several Swallows, but no Sand Martins visible, nor did any reappear for several days. Wood Pigeons cooing; three female Wheatears arrived. A Crow mobbing a Sparrow Hawk over the lake, and they circled upwards till lost to view in the blue sky. When last visible, as mere specks, the corby was still maintaining its most determined attack.

8th.—Fine but cold, a bright sun, what little wind there is still in the north. Stone flies (*Perla bicaudata*) coming out in force, and the trout killed were full of them, and their larvæ. A Kingfisher seen on the Lliw; they do not winter here, but two or three pairs come to breed, the Llafar being their favourite stream, owing to its more suitable banks. One pair brought off a second brood there,

the young being just fledged on 12th August, on which date I watched them, at very close quarters, for a long time, sitting about on the willow bushes, uttering their sibilant cry of *sitz, sitz*, and waiting impatiently for the coming of a parent with a fish. Although they could only just fly, and almost allowed me to touch them with my fishing-rod before taking alarm, they showed no fear of the water, but seemed instinctively to know that therein lay their proper prey, and the orthodox way of catching it. Their perches all overhung deep, still water, where it was very unlikely that any small fish, or other creatures, could attract their notice; but time after time one of the five would turn his bill downwards, gaze into the water a moment, and then go in with "a header" almost like an old bird. Nothing was ever brought up from these dives, and I do not think the capture of prey could have been their object, for I feel pretty sure that the birds could not have left the nest more than a few hours, and it is extremely unlikely that they could yet have caught anything for themselves. They evidently enjoyed the diving, however, and had all the appearance of being on the outlook for prey, and showed a marvellous aptitude for their trade. After each dive the bird gave itself a vigorous shake, upon gaining some of the lower boughs, whence, by easy stages, it quickly found its way back to the neighbourhood of its original perch.

It is a common mistake to suppose that the first plumage of Kingfishers is "almost as bright as that of their parents"; the fact being that, when they first leave the nest, they are really very dull coloured, by comparison quite dingy, and it is some time before "a gleam" appears even to the rump. It is still longer before the under parts lose the distinctiveness of immaturity.

One of the nests here, was in rather an unusual position. Suitable banks are rather scarce, and many of them very liable to be flooded; but a large larch tree, which had been blown down, by the side of the lake, had raised a wall of soil upon its roots, and into this the Kingfishers had bored their hole. Two holes had, in fact, been bored; but one of these

coming in contact with a root, when it had been driven some nine inches, was abandoned, and the other started. The latter extended nearly two feet into the clayey soil, and from it a brood was successfully reared, despite the fact that birds'-nesting boys must more than once have passed the place. A Wren's nest, on the fringe of the root, was actually harried by them; but the face of the little "cliff" of earth was protected by the water, which had gathered nearly knee-deep in the hole, which the fall of the tree had occasioned, and the Kingfishers' boring happily escaped suspicion.

The Welsh name of the Kingfisher is *Glas-y-dorlan*, or sometimes *Tinsigl-y-dwr*. One gentleman on the Lower Dee called it *Pioden-glas-y-dwr*.

12th.—Many Wheatears now dispersed in pairs over the hills, but eggs are later here than in most places. I found them fresh up to quite the end of May, and the earliest fledged young were seen on 17th June.

15th.—A single Sandpiper on the Lliw; no more seen till 27th, when a great many arrived together. For some days after this, little flocks were to be seen flitting about the sides of the lake, or pairs disturbed in the fields nowhere near where they intended to nest. On 28th, several pairs were already pushing their way up the Lliw to nesting stations.

19th.—Redstarts in several places between Bala and Corwen, some of the males in song; also Whitethroats, and a pair of Blackcap Warblers, but none of them noticed near Llanuwchllyn for a day or two yet. Genial sunshine now, Blackthorn coming into bloom, and the first of the Wood Anemones, Sorrel, Stitchwort, and a Cowslip: Primroses and Dog-violets appeared a few days ago. Many House Martins dipping and flying over the lake in the evening: next day they were beginning to visit their nesting windows in the village. A pair of Marsh Tits excavating a site for their nest in a decayed stump near Llangowr.

20th.—A Linnet, near Plas-in-Cwm-Cynllwyd, almost exactly imitating the Dipper's song. In the village, a Chaffinch kept mixing up some of the Tree Pipit's notes

with his own proper song, and continued doing so right through the summer. A Great Tit, nesting near my lodgings, constantly made use of the Coal Tit's common call, almost to the exclusion of any other.

30th.—The first Cuckoo heard last evening; to-day they are calling all over the hills: in 1906, first heard on May 4th.

May 3rd.—One pair of Swifts flying over Carn Dochan: a single pair in the village next day: they arrived in force on 11th, and at once set about visiting their nesting holes in the cottage roofs, from which, in more cases than one, they successfully ousted Sparrows, which revenged themselves by taking possession of Martins' nests as soon as these were near enough completion to be habitable!

4th.—Corncrakes calling everywhere at night, wherever there is cover enough to hide them; two or three were heard for the first time yesterday. Curlews and Golden Plovers both "scraping" on moors; Ring Ouzel building; Water Ouzel hard sitting; both Grey and Pied Wagtails only building, three nests of the former, one in a crevice low down in the wall of a cowhouse, adjoining a dwelling, and well in the way of cats! Another on top of a last year's Dipper's nest; Pied Wagtail's nest on the "wall-head" inside the above-mentioned cowhouse. White Owl with four fresh eggs in a hollow oak; they were stolen by some of the boys, later, and the bird laid again, and had four half-grown young ones, on 12th August, in the same tree, of which she was harried a day or two afterwards by a man who told me he got five shillings each for them, and "wished he could find some more"!

15th.—A large arrival of Yellow Wagtails, scattered about, in pairs, all round the head of the lake. I saw one below Bala on 8th, but there have been none here before: next day they had all dispersed to their particular nesting sites; one seen building on 17th. Several newly arrived Sedge Warblers also (first heard on 6th) and a pair of Garden Warblers starting a nest. Long-tailed Tits fledged. White butterflies (*P. rapæ* and *napi*) and Orange-tips (*A. cardamines*) now appearing. Green Hair-Streaks (*Thecla*

rubi) becoming abundant, latter first seen about the 9th. Whinchats came about the 9th, in a large body, and at once set about nesting. In 1906, they arrived in force on May 4th, along with Cuckoos, Corncrakes, and Spotted Flycatchers: but in that year a single male was seen, with a lot of Stonechats, on 8th March, the earliest record, by nearly a month, contained in my notebooks, for any part of the kingdom, though these have been carefully kept for upwards of thirty years. The weather, early in March 1906, was very cold and stormy, a westerly gale blowing from 5th to 8th, accompanied by heavy rains. The Whinchat was not seen again after the 8th, and no other appeared till 4th May. The first Red-backed Shrike was seen in 1906, on 7th May, a solitary female; pairs became established a day or two later. A Wood Wren also seen on the 7th; and several pairs, the males in song, on 11th May. These were not specially recorded in the previous years; but otherwise, as already stated, 1906 was practically a repetition of 1905. In each year Nightjars were first heard churning on the night of 20th May.

On 14th May a Little Grebe's nest found, with one egg, at a small lake out on the moors; several Grouse nests with fresh eggs seen on same day, and at the water's edge the shells of many sucked eggs, no doubt brought there by Crows, as is their habit. A keeper told me that one day, a few years ago, he actually counted over two hundred grouse eggs lying sucked round one water hole on the moors! In one of the nests seen to-day, the eggs, eight in number, closely resembled those of a Greyhen in colour and marking, only one of them showing any suspicion of the rich red, or brown tint, usually seen in the eggs of Red Grouse.

In a nest on the rafters of a shed at the station, a Robin, and a Pied Wagtail, are each laying an egg every day. The nest, evidently built by the Wagtail, disappeared, with its contents, a few days later.

Nests of the Bullfinch, Creeper, Merlin, Kestrel, Sparrow Hawk, and Yellow Hammer, all with eggs during the next few days: the last named is not very numerous here. Redpolls, which are abundant, were almost a week later in

laying, their nests being usually rather high up in oak trees, often on a rather thick, horizontal limb, sometimes, but not always, where some twigs grew to hold it in position.

In autumn, Bramblings or Mountain Finches were numerous, frequenting the beech trees near the village, from about 10th October, as long as the mast lasted, after which they moved further down the valley. They all betook themselves in the evening to Traws-coed, a wood far up on mountain, to roost in the fir trees. Bramblings always show a marked preference for conifers; but failing these, are content to sleep with other finches in low bushes; occasionally, I have found them roosting upon the ground, on rough hillsides, in company with Red-wings, and Fieldfares.¹ Both of the latter appear at Llanuwchllyn for a week or two, in October or November, but leave when the haws have been exhausted, and seldom return. Mountain Finches renew their flight feathers before coming to this country in autumn; but I have examined many specimens, at different times, killed as late as the middle of December, which were still heavily in the moult as regards their body feathers. Young males have not assumed their full plumage before they leave us in spring, the quills being renewed, in some cases, before they go. In confinement, Mountain Finches undergo a full moult during the summer.

On 29th October, three or four Tree Sparrows were noticed feeding with a flock of Greenfinches and Yellow Hammers, round a hay stack, near Llys Arthur; but, except on that occasion, none were seen in the Upper Dee valley. They breed, however, about Wrexham, and round Chester, and one day in summer I saw a single individual near the station at Llangollen. The Tree Sparrow may, perhaps, therefore, nest in localities not far removed from that under review, or it may be extending its range in Wales as elsewhere. Notwithstanding the difference in note, and plumage, between this and the common Sparrow, however, the two species are so similar, generally, that few

¹ The Redwing is known as *Adein-goch*, *Asgell-fraith*, or *Tresglen goch*; the Fieldfare as *Socan lwyd*, *Socan eira*, grey, or snow-wanderer; *Aderyn-yr-eira*, and *Bronfraith-yr-eira*, bird, or thrush of the snow.

persons distinguish between them. To anyone familiar with it, it is the note of the Tree Sparrow that is likely first to betray its presence; while its slimmer form, and more sprightly habits, are also better distinguishing features at a distance, than the double wing-bar, or the different arrangement of the colours on the head. That, unlike the common species, the sexes are alike in plumage, and the young very soon resemble them, are points which are more likely to follow recognition than to lead up to it.

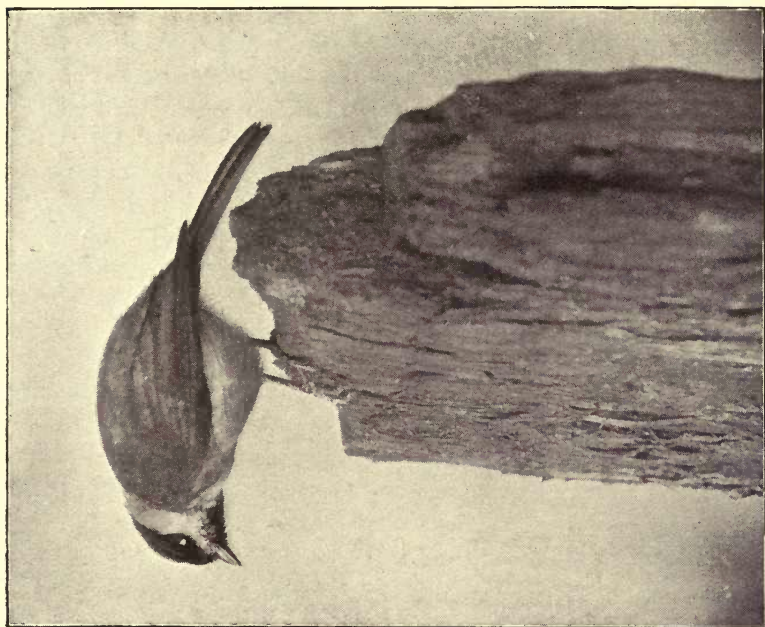
Amongst other casual visitors noticed were a pair of Siskins,¹ by the side of the lake, on 26th December 1905, so fearless and so busily engaged in feeding upon the alder seeds, that they almost allowed me to touch them with my walking-stick before taking wing, and then only moved to another branch a few feet away. They were quite alone, and were not seen again.

On 7th November 1906, a dull, misty day, with a good many Redwings and Fieldfares moving about, my attention was drawn to a female Sparrow-Hawk beating along a hedge side, not far from the station. She was moving with that slow owl-like flight so characteristic of this bird when on the lookout for prey, and presently she disturbed a Waxwing from the hedge and drove it directly towards me. Though hard pressed for some distance, the bird held boldly on, and darting through the branches of an oak, close to where I stood, threw out its pursuer. It then mounted, chattering loudly, into the air, and was quickly lost to view in the mist. So narrow was its escape, that at more than one twist I saw the long talons of the hawk shot out to grasp it. Curiously enough, the last Waxwings I had seen alive in this country were a pair, in November, a year or two previously, which also happened to be attacked by a hawk. In that instance, however, the aggressor was a Merlin, and the stoop was made at the birds as they sat eating haws, on the top of a hedge within a few yards of us. It would be more correct to say that the stoop was being made, for, just before reaching the quarry, the hawk saw us

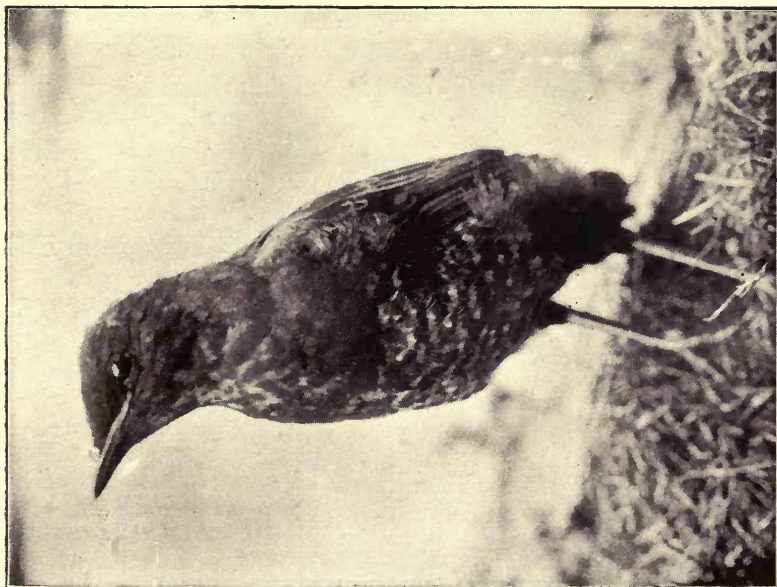
¹ *Draeniog*, meaning a small Hedgehog, is curiously enough the name applied to the Siskin here.

and sheered off. In that case, too, the Waxwings celebrated their escape by loud chattering, and, mounting straight into the air, disappeared.

I suspect that more rare birds meet with an untimely death at the hands of natural enemies than might be supposed, other animals being quite as quick as we are (probably much more so) to notice the presence of a stranger amongst them. I have more than once seen the remains of a Kingfisher in a Sparrow-Hawk's nest, where the former was quite an uncommon bird ; and where the Pied Flycatcher, in summer, was a still more unexpected resident, an ornithological friend once had his attention first called to the fact that a brood of these birds had been hatched near his residence, by finding the remains of their male parent in a nest of the same hawk. I once saw a cat stalking an escaped Canary, regardless of many sparrows that were twittering on the hedge much closer to her ; and another time drove off two cats that were in pursuit of a Budgerigar in a town garden. While sitting at breakfast one morning, recently, our attention was called to a Parakeet in a tree near the house, by "Tim," who had been quietly slumbering on the hearthrug, suddenly starting up, and jumping to the window, his feline ears having been quicker than ours to be aroused by the unusual note of the visitor. Many years ago I recollect seeing a Peregrine Falcon single out a Greenshank (much the rarest bird in the flock) from a mixed company of Plovers, Redshanks, and Dunlins, that were feeding on a muddy estuary. Similar experiences must recur to the minds of many people ; and few of us have not noticed, at one time or another, the disposition of other birds to mob a stranger that had appeared amongst them. The conspicuous plumage of the wanderer may sometimes be the visible cause of its undoing ; but, even so, there can scarcely be a doubt but that it is by such primitive methods that Nature intended the spread of a species to be controlled, and that it is to the "upsetting of her balance" by game-preserving man that we owe much of the additions to our fauna that have taken place within recent years. Protective Acts of Parliament have, doubtless,



MARSH TIT.



FLEDGLING RING OUZEL.

materially aided the increase, but I believe that it is the absence of birds and beasts of prey, more than anything else, that has led to the establishment of new species of small birds in so many new areas. Perhaps the same cause may have conduced not a little to the increase of albinos, and other odd varieties, so noticeable of recent years, their "kenspeckled" plumage being always attractive to a hawk, should one happen to be near.

This chapter may be conveniently brought to a close by brief references to one or two occasional stragglers to Llanuwchllyn. On 7th August 1905, two Green Sandpipers, in immature plumage, were seen near the top of the lake, in company with some Snipe; on the 27th of the same month, in the following year, a single Greenshank appeared, and remained about the place for a day or two; a few days previously a solitary Oystercatcher was seen flying over. On 25th July 1906, a small party of Ringed Plovers were running about on the shingle at the mouth of the Lliw. Common, Herring, and Lesser Black-backed Gulls, paid passing visits at various times; the Black-headed Gull frequently, though it does not nest at the lake. A Great Snipe, and a Water Rail, were reported to have been shot; and though I did not see them, neither would be a very unlikely visitor. In the possession of Mr Pugh, at Blaen Lliw, I saw a specimen of Leach's Petrel, which he had picked up dead, upon the moor there, on 22nd November 1904. On the coast, the Manx Shearwater is not uncommon, and is known to the English-speaking inhabitants as the *Mackerel Cock*, because it is supposed to follow the shoals of that fish; in Welsh, all the Shearwaters are *Cneifydd*, this bird being distinguished as *Cneifyaa manaw*, or *Pwffin manaw*, Manx Puffin. The Petrels are *Pedryn*, or in the plural *Pedrynod*, the Storm Petrel being sometimes called *Cas-gan-Longwr*, or "the sailors' curse."

CHAPTER XXXVI

Swifts—Powers of flight—Hibernation—Seeing in the dark—Oriental behaviour—Ideal flying-machines—Marvels of nature—Freemasonry amongst Swifts—Excessive destruction of insects—Devil's birds—Methody devils—Swallows and Martins—Jenny Spinners—Life of an insect—Nature's balance upset by man—The difficulty of readjusting it.

ALTHOUGH the truthfulness of the old proverb which tells us that "one swallow maketh not a summer, nor one woodcock a winter," cannot be gainsaid, the arrival of the first Swift as clearly marks the advent of summer as the departure of the band testifies its close ; for not only are Swifts amongst the last to come, and the first to go, of all our spring to autumn migrants, but they are by far the most regular in the observance of their appointed times and seasons. At infrequent intervals, one or two may be observed before the end of April, and occasionally some may tarry till the middle of September ; but these are only the exceptions which serve to prove the rule that they come with May, and depart when a reference to the Calendar tells us that "summer" has ended. Even when they are late in going, August usually sees the last of them, and those observed from time to time in October are more probably unlucky stragglers that have lost their way, than birds that have spent the summer, or been hatched, in the neighbourhood of where they happen to be seen. My journals show that only in four of the past thirty years have Swifts been seen in October (1882, 1886, 1892, and 1903), the latest date being the 14th, though there are records of single birds having been met with as late as 1st November, and even December 1st.

Consequent on their magnificent powers of flight, Swifts may be looked for to arrive almost on the same day in any part of the country ; for once fairly started upon their long journey, there is probably little inducement to delay, and an

extra hundred miles, or two, at the end of it, means no more than another hour or two's flying,—the birds' daily occupation from dawn till dusk, whether migrating or not. Food is almost certain to be picked up *en route*, and may be expected in one place almost as much as in another, once land has been reached ; while, I suppose, no one has ever seen a tired Swift, or one resting, except at its nest. It is hardly possible to imagine such creatures a-weary of flying ; but when they happen to arrive here in bad weather, I believe they sometimes make straight for their nesting holes, and remain there, probably asleep, till it becomes warmer. More than once I have known Swifts to be taken, in a benumbed and listless condition, from beneath the eaves of a house, by a boy engaged in looking for sparrows' eggs, on a cold day at the beginning of May. They have speedily revived, and flown off, after being placed in a basket near the fire for half an hour ; and it is not surprising that their discovery should have been regarded as proof positive that Swifts hibernated, especially when they happen to be the first to be seen in the particular season. On one occasion, I chanced to be walking with an old friend near his house, on a bleak afternoon, when he remarked that though Swifts had been due for a day or two he had not yet seen any. He dwelt upon the east coast, "ayont the silver Tweed," and the words had hardly been uttered when a solitary Swift appeared, winging its way in from the sea, and, without a moment's pause, it dashed down, and flew straight into a hole beneath the tiles, where a pair or two nested every year. How long it remained there, there was no means of ascertaining with certainty, but the weather continued cold for the next two days, and during that period it was not seen. The sun then came out, and so did the bird ; but cold weather again setting in, it disappeared once more, not to be seen again till with a return of sunshine more of its companions arrived. Swifts are so well able to see in the dark (as will be more particularly referred to presently) that should they chance to arrive in the land of their birth under cover of night, they would probably experience very little difficulty in finding their way "home" ;

and in the event either of their requiring rest, or of the weather being unfavourable, it is quite possible that they may sometimes be dozing quietly under our rafters, while we are anxiously looking out for their arrival outside.

A considerable number of Swifts nest at Llanuwchllyn under the eaves of the low two-storied houses ; and here, as in many other similar situations, they have a constant source of danger awaiting them in the shape of the village cats. On leaving their nesting holes they simply allow themselves to drop ; and before their great wings have been unfurled, and they are fairly under way, they are often within a foot or two of the ground, and skim its surface for some yards before rising. Many a poor Swift is then pounced upon, and the survivors are so slow in realising the situation, or so careless in taking the slightest trouble to avoid the enemy, who is probably sitting in full view in the middle of the road, that it is a wonder some of the little colonies are not exterminated. At one part of the village, I saw a Swift taken, by the same cat, on each of three evenings on which I chanced to be passing that way ; and though each of these victims was rescued, and was able to fly away on being liberated, it could hardly be supposed that the play only took place when there happened to be a gallery, or that it often ended so bloodlessly. The visits, it may be added, were not on consecutive days either. In the narrow streets of country towns, I have more than once seen similar captures made ; but, there, the traffic sometimes compels the birds to exert themselves a little in order to avoid it, and in doing so they keep out of the cat's reach also. That they are able to do this at pleasure only emphasises their extraordinary apathy, and lack of appreciation of the danger they run from feline foes.

The behaviour of the birds when captured, too, is quite as Oriental. Kismet would seem to be their only creed ; and without a murmur, and almost without a struggle, they suffer themselves to be carried off, their wings drooping as though broken. When rescued, the full dark eyes of the captive betray as little of fear as of gratitude. As though aware that even life would be too dearly bought at the cost

of damaged pinions, the bird lies unresisting in the hand. Carry him where the gladsome screams of passing comrades ought, one would think, to make the heart bound to be once more free, but the calm eye gives indication neither of false hope nor undue mistrust. Still no unseemly struggle moves the listless wings. Now lay him in the dusty roadway and stand off a pace ; the wings are raised perpendicularly above the back, you hear more of a shake than a flutter as they descend, and with three little whirlwinds of dust marking where they have brushed the surface, the beau-ideal of a flying-machine is once more launched into space. Gathering speed and elevation with each turn of the propeller, and each turn following quicker than the last on the heels of its predecessor, the aeronaut is soon beyond the reach of further harm for the present, and expresses his satisfaction by the vigorous shake with which he gets rid of the contaminations of earth ; but yet it is doubtful whether his experience to-day will suffice to keep him from carelessly running the same risks of recapture to-morrow !

When the belief first got abroad, that such birds were unable to rise from a flat surface, it is not easy to trace, though probably it was suggested by the shortness of the legs. That it has no real foundation in fact has often enough been proved, and is sufficiently demonstrated by illustrations like the above, or by a consideration of the places in which Swifts sometimes choose to build ; but anyone handling a young bird for the first time, or an old one that has become numbed with cold, may very easily be deceived. Time after time I have had Swifts brought to me in spring, that have been picked up, unable to fly from the latter cause, and have more than once found one myself ; but after a night in a warm room, or a short while before a fire, they have invariably recovered, and flown off when given the chance. With young birds it is different. Except to creep about a little, where space admits, they never leave the nest, voluntarily, until they are so well able to fly as to be practically indistinguishable from their parents upon the wing. They can have no "training" of any kind

in the way of flying, but must issue from their nursery after the manner of a moth leaving its chrysalis, with powers of flight fully developed. When taken prematurely from the nest, although apparently full grown, and with quills to all appearance as hard as in adults, they seem to have no knowledge of how to fly, but to be as helpless as an insect before its wings have dried properly. If dropped, or thrown into the air, they fall almost like stones, sometimes spreading their wings a little, at others making no attempt at all to break their fall. If, on the other hand, the bird experimented on in this way should chance to have arrived at a knowledgeable state (although not to be distinguished by our eyes from one which has not) it will go off at once like an adult, as if it had spent a lifetime on the wing, though in reality it has probably never before had its head outside its dark abode! It has always seemed to me one of the marvels of nature that this power, or knowledge of how to fly, should come to the young Swifts thus, "like a thief in the night," as it were, and it is, I think, a peculiarity shared by no other birds in this country. Whether anything of the same kind has ever been noticed in the tropical allies of the Swift—the Humming Birds—I do not know, but I should think it probable that their affinities may extend so far.

A crevice in the perpendicular face of rock or masonry, from which they can at once drop into space, forms, no doubt, the ideal nesting site for a Swift; but in such places as the loft over a church, a number may sometimes be found nesting together on the floor, and at various distances from the slit, or window, that gives them access. In one such place, I have, in company with the worthy minister, often watched a noisy crowd of Swifts wheeling round his old Abbey Church, a dozen, or a score of them, ever and anon pouring, pell-mell, over the jalousie boarding which protected a small ventilation window in its western gable. The boards sloped downwards, like a Venetian blind when closed, and the window was several feet above the level of the flooring; and as there was no other access for light into the loft, the birds slid from bright sunshine outside, into

practical darkness within, or into what might at best be described as but a very "dim religious light." Yet they seemed to experience no inconvenience from the sudden change, but at once found their way to their nests, which sufficiently demonstrates the marvellous adaptability, and power of their vision.¹ Some of the nests were on the "wall heads," others in crevices and at the base of rafters, but many were on the floor; and from the latter, of course, the birds had to rise in the circumscribed area of the loft, in order to gain the window. None of them showed any difficulty in accomplishing this during our visits; but should they fail, as my friend from previous observations had some reason to think might sometimes happen, their resources are not at an end. With feet and bill, a Swift can creep up the face of any reasonably rough wall, and as a last resort, the window can, without difficulty, be gained in that way. A noteworthy difference between the behaviour of the birds outside and in was that, while they frequently continued to scream as they hustled their way over the window-boards, from the moment they dropped inside, not a note was uttered. Two is the ordinary number of eggs laid, but some nests may always be found containing three.

In this country it is very rarely that the Swift takes to a tree for a nesting site; but in the forest of Rothiemurchus, in Strath Spey, I have seen them issuing, four or five together, from old Woodpecker holes in the bare and almost branchless trunks of some of the ancient pines that still stand here and there over the hillsides. The hoary head of one of these giants was crowned for many years by the remains of an Osprey's nest, while a pair of Swifts occupied a hole beneath it; but that was more than twenty years ago, and in the interval the Ospreys have disappeared. From its dimensions, both birds were to be excused if they mistook the trunk for some ruined tower, their more ordinary resort.

Young Swifts are at first blind and naked, and their development is slow in comparison with other small birds; before the feathers appear, they become covered with a

¹ See also the reference to cave-building swifts on page 314.

close down. They are always excessively fat, especially when nearing their time for leaving the nest ; and, like their parents, they exhibit next to no fear on being handled. They climb adroitly about one's coat, or over any rough surface, using the bill to help their progression, after the manner of a parrot. The school children one day brought me one, at Llanuwchllyn, which they had found "walking about in the garden" ; it was so big and robust that at first I thought it must have been injured so as to incapacitate it from a flight it had already enjoyed, but a careful examination showed it to be perfectly sound, only that "it had not learned the way to open its wings." There were several nests in the eaves, twenty feet or so above the garden, so, concluding that it must have fallen from one of these, we placed it on the rough stone wall, and watched it climb its way up to the spout. Here, however, it stopped ; and as there were a number of sparrows nesting there, also, and we did not wish to risk further harm coming to it, a ladder was procured, and it was safely transferred to a nest, whose *two* young ones seemed to match it in size. Two nests already contained three young each, but they were not so fully grown. Whether it was returned to its own parents or not, we had no further means of knowing ; but as it disappeared with the rest, it was probably safely reared, and I was the more sanguine on its account, as in the church loft, already alluded to, we used sometimes to think that a sort of freemasonry existed amongst the birds whose nests closely adjoined one another, and that with the young it was a case of first come first served when an old one appeared with a supply of flies.

Most of the Swifts breeding in the village, in order to get to their nests, have to pass above, or below, a dangerous set of telephone wires, which hang right in their path, and are considerably shaded by pendent beech branches. I have watched the birds, for hours together, racing, and chasing one another through and about these, but without ever so much as once coming near an accident. How they manage to steer clear of such dangers, at times when they are dashing along at their greatest speed, and with their

attention so much taken up with one another, is another of the marvels in the bird's economy which, perhaps, we shall never thoroughly understand.

Of course, it is well enough known, nowadays, that such birds as Swifts do not habitually fly about with mouth a-gape, but that they snap up individual insects as they go along. When fishing in the evenings, however, where swarms of "up-and-down flies" were dancing over the water, I have watched Swifts (and Swallows too), dart, open-mouthed, through a dense column, "browning the flock," as it were, and not singling out any particular insects. Swallows do this in a gentlemanly way, gliding through the throng, and no doubt filling their bills, but doing small damage with their wings; but the Swift—always most eagerly upon the feed at this hour—charges the crowd without mercy, his wings going like the sails of a windmill, and the destruction they cause amongst the insects must be many times in excess of what are actually devoured. The result may sometimes be traced in a wide line of maimed and dead flies, scattered on the water in the direction of the line of flight. The audible "snap" with which a large insect, like a May-fly, is engulfed in the capacious mouth of a Swift, is a familiar sound to many contemplative persons. I have, also, seen quite large moths taken, *Caradrina cubicularis*, so often disturbed from hay-fields, being an especial favourite.

Almost everywhere throughout the country the Swift is, or has been at some time, associated in the popular mind with the spirits of darkness. In some places it has been called simply "devil," or "devil's bird," in others it is known as a "screaming devil," a "devil," or "little devil," and so on. One probable origin of such association has been thus graphically described by the late Mr Henry Stevenson¹:—

"There is another period, too, when the Swift almost invariably appears abroad, though previously, perhaps, unseen for hours. The air is hot and stifling, and a sudden gloom creeps as it were over the earth and sky. An almost painful

¹ *Birds of Norfolk*, vol. i., p. 343.

stillness is broken only by the chirping of the sparrows under the tiles, already conscious of a coming storm. Dark angry clouds are drifting across the heavens ; and one broad mass, perceptibly increasing and assuming each moment a deeper shade, bespeaks the lowering tempest. Now, as we stand watching that strange yellow light, which spreads itself for a while over surrounding objects, as one by one the heavy drops foretell the drenching shower, strange forms are seen sweeping through the air in the very 'eye of the storm,' and the sooty plumage of the Swifts contrasts even with the blackest portions of the surrounding atmosphere. No wonder, then, that their appearance at such times, issuing from their fastnesses as the very "demons of the storm," coupled with their "uncanny" looks and shrill cries, should have won for them in a superstitious age the name of Devilins."

I had good cause to remember these words one day when sheltering amongst the rocks on the Ddwallt from one of the sharpest thunderstorms I ever recollect being out in, when, just before the storm broke, a party of Swifts hawked along the face of the cliff, perfectly regardless of the Peregrine Falcon which sat calling on a rock above them, or of her partner who circled overhead. Indeed, the Swift would seem to have small cause to fear any enemy in the air, for we have no bird which excels it on the wing. The Hobby, which makes a common prey of Swallows and Martins, is said to capture one occasionally, and I once saw a Merlin stoop at one ; but, time and again, I have seen scattered bands of Swifts feeding on the moors where Merlins had their nests, and even passing, and repassing, the hawks in the air, without the least apparent concern, and without any attempt made upon them. But almost any day in summer they may be seen hawking round the mountain tops, paying no regard whatever to any bird that may happen to be near them.

In Wales the Swift is often called *Gwennol ddu*, or "the black martin" ; but round Llanuwchllyn it was generally *Coblyn ddu*, which is practically identical with the Gaelic *Gobhlan dubh*, or "black goblin." By irreverent Saxons,

a little further to the east, it is sometimes known as a "Methody devil," owing to its so frequently nesting in the chapel roofs. The Swallow, and the Martin, both go by the name of *Gwennol*, the latter being sometimes distinguished as *Gwennol-y-maes*, or "house martin," and *Murwennol*; the former as *Gwenfol*. The Sand Martin is *Gwennol-ddŵr*, or *Gwennol-y-dŵfr*, "water swallow," occasionally *Gwennol-y-glennydd*.

Many Swallows tarried till near the end of October; a Martin, at Llangowr, till 12th November. Sand Martins leave early; in 1906, not one was seen after 25th July, on which date, happening to walk down to the mouth of the river in the evening, to watch some people perch-fishing, I found a flock of many hundreds skimming over the lake. These greatly outnumbered the locally breeding stock, and were, no doubt, the assembled Martins from a considerably extended area, making ready to leave the country. When they had settled to roost on the coarse herbage growing over "the lagoon," their twittering was audible at quite a distance, and was kept up till long after dark. Ere they retired to rest that night, they, and the Swifts, and Swallows, had made a sumptuous banquet off a delicate little "Iron Dun," which was hatching in myriads over the lake, from an hour or so before dusk, until it became too dark to see. The fly is either the *Cloeon diptera* of Ronald's *Fly-fisher's Entomology*, or a very closely allied species, it being nearly indistinguishable from his figure of "The Jenny Spinner," though in its metamorphosis it differs a little from his description.

It is an insect whose acquaintance I have made in various parts of the country at about this season of the year, particularly on lakes of rather peaty bottom. To-night it was rising everywhere, on the water, but most abundantly at a greater distance from the shore than the eye could detect it; and the swarms, thence derived, came floating landwards in a continuous mazy cloud, that drifted over, and quickly covered, everything with which it came in contact. Failing any other resting place, they fell on the grass, as far as a hundred yards inshore, like a gentle

shower of snow. Though as nothing in comparison with these in numbers, the hundreds that were rising on the water at our feet were ample for as close a study as might be desired. Liberating itself, in true ephemeral fashion, from its pupal case, which rises from the bottom of the water, the insect appears suddenly on the surface, and in a moment has expanded its first wings and tail. Rising with rather heavier flight, and more buzz than might be expected from such an ethereal-looking creature, it makes the land, to alight, as just stated, on the first object that presents itself. Our clothes, hats, faces, and everything, were quickly covered with it ; and when we got home the cast skins still adhering to our garments had to be brushed off in hundreds. It reaches its first resting place with wings and tail spread out, in what a fisherman knows as the spent-gnat attitude ; but almost at once the outer shell cracks, the new wings rise, cocked, above the back, the tail and limbs are wriggled free, and in two or three minutes the perfect insect sails off, this time without unseemly buzz, on its final career. Many, flying upwards, are soon lost to view, but many more join in more or less dense clusters that swing, rising and falling, nearer to earth. Swifts and Swallows fill their bills with them ; Bats, too, are eagerly snapping them up ; and a Nightjar, gliding by on silent wing, brings death to whole troops of them at once, in his wide gape. On grass and gravel, Sandpipers run nimbly hither and thither, picking up what they require ; while an ugly Toad, awkward in the use of every member save his tongue, is sucking in his fill also. It is too dark to see all the countless other enemies that are lying in wait for them, nor boots it to pile up the agony too tall ; suffice it that, when all risks have been passed, enough still remain to lay the millions of eggs that are required to reproduce next year's " rise."

But the persecution does not cease when the eggs are laid. The latter are, themselves, the sought-for food of many tiny creatures ; while, from the hour they are born, to that, may be twelve months hence, when the surviving nymphs shall again liberate the flies, many creeping things

at the bottom of the water, and fishes, and birds, that swim and dive in it, will be engaged in devouring them, at all stages, and at almost every turn. Nature, truly, looks after her children ; but the form her care takes, in regard to some of them, is that they are so uncountably prolific that no amount of killing is able to reduce their numbers ! She holds her balance even, but with, apparently, no thought for the individual, and of all her creatures has endowed but one with power to upset it ; *He*, with his "reason," is permitted, by pollution of the water, by draining it away, or otherwise, for his profit or his pleasure, to sweep away whole legions of life in one disastrous swoop, while Dame Nature stands idly by, smiling on the exhibition of the skill of her most perfect production. Perhaps, having accomplished his ends, he may wish to bring back the teeming multitudes of ephemeridæ, to provide food for his reintroduced fishes, and then comes the rub ! If he has destroyed, in a span, what has been developed through countless eons, need he wonder if his efforts prove unavailing to restore the balance in the space of a short lifetime ? Or if he has gone to war without counting the cost, should he grumble at the day of reckoning ? In her slow but certain methods, Nature provided an ample food supply for each predatory creature before the latter was introduced upon the scene ; but once let that supply be unduly encroached upon, and it is no easy task for poor mortal to restore it.

The little *Cloeon*, in its first winged state, is of a nearly uniform pearly grey colour, with a slightly milky or opaque appearance. After its final metamorphosis, it becomes paler, and almost transparent, save for a patch of bright brown on the thorax, a spot of similar colour near the tail, and darkish legs. The tail is bifurcated, and considerably longer in the perfect insect than in the pseudimago. It continues upon the wing for some days, the life of the pregnant female exceeding that of her consort ; and, like so many other small insects, the males in a dancing flock seem always vastly to outnumber the females. Perhaps this may, to some extent, be due to the fact of the female, as being the more valuable of the two for the continuance of the race,

leading a less exposed life ; but, however that may be, she must fly in order to deposit her eggs, which are dropped singly over the water ; and when engaged in that occupation, how many of her sex must fall a prey to the ever-watchful trout, just at the very moment when on the preservation of her life hangs the welfare of the future generation !

The Sand Martins were all left roosting by the margin of the lake ; as we walked home by the river side, little flocks of Swallows were disturbed from every bush of alder, or sallow, that overhung the water. This is always the favourite roosting quarters of these birds, as soon as the breeding season is over ; the closer the boughs hang to the water, the more they seem to be preferred, but I have often wondered what it can be that prompts the choice. Is there any enemy which instinct leads them thus to avoid, and, if so, what can it be ? Can it be those " policemen of the night," the prowling Owls, to whom the risk of a wetted plumage may be a deterrent, but to whom the Swallows, sitting upon the rather bare branches they usually affect, might otherwise prove a tempting and conspicuous prey ? Or is it simply the survival of a habit, begotten of long residence in tropical climes, where other enemies have to be guarded against, that is too deeply ingrained to be lightly cast aside, even although the causes of its acquisition do not exist in this country ?

CHAPTER XXXVII

Bats—Drinking dew—Superstitions—A Nature-lesson—Powers of vision—Noctule and Rooks—Bat chased by an Owl—Edible Swifts' nests—Bats, Swifts, and Birds of prey in Borneo—Cockchafer and Bat—A chain of destruction.

RETURNING from a night's sugaring in the woods, one early morning in mid June, some years ago—it did not happen to be in Wales, but that is of little consequence—I came upon a Bat walking about amongst the grass by the side of the path. What it had been about there was not obvious ; it was in no way incapacitated from flight, and could have had no difficulty in rising from the ground had it wished to do so ; but as it seemed to have no inclination that way, but to be bent on continuing its perambulations a-foot, I sat down, near by, to watch it. It gave me the impression that it was sipping the drops of dew that plentifully bespangled the grass ; but either it had satisfied its immediate wants, or else my presence disturbed it, for it shuffled through the longer herbage, and began to climb up the face of a wall that bounded that side of the way. Having gained an elevation of some three feet thereon, clear of the tops of the weeds, it did not, as might have been expected, take wing ; but cleverly reversing its position, and hanging head downwards, suspended by the feet to a rough bit of mortar, very deliberately began to make its toilet. Every part of the body within reach was licked clean from any dust or moisture that adhered to it, especial attention being paid to the flying membrane, the wings being partly unfolded and drawn beneath the body for the purpose. The process was quite a long one ; and ere it had been completed, truth compels me, regretfully, to state that the observer had dozed at his post. When he awoke again, the sun was shining full on the wall, but there still

hung the Bat, now contracted into a small round ball, and to all appearances asleep. Whether it would have passed the day there could only be guessed ; but wishing to make sure of the species, I rudely disturbed it, when, as I had expected, it proved to be *V. daubentoni*. On being released, it flew off at once. That Bats drink water in captivity is, of course, well known ; but I am not aware whether they have been observed to do so at large, nor, if so, how the liquid was obtained. They frequently pick an insect off the surface of a quiet pool, but could hardly, in that way, take much of a drink.

Bats, called *Ystlum* here, are not very plentiful at Llanuwchllyn, the Pipistrelle being the most common. In September I found one of these that had met with its death in a very curious way. It was hung up to a trailer of bramble, on the railway bank, and had evidently, in passing, had the misfortune to catch the tip of a wing on one of the strongly hooked spines. The membrane had been pierced only half through ; but, in its struggles, the Bat had taken a turn over the branch, and was thus securely held by the folded skin. It had been dead some time before I released it, and had probably died a lingering death from starvation.

The Long-eared Bat is also fairly numerous, and, with the last, was sometimes seen late on an afternoon, flying in the sunlight about the trees near the village. One of these day-flying Long-eared Bats was noticed constantly alighting, for short intervals, in a field, and I could only suppose that it was gathering food of some kind from the grass. In the twilight, this bat sometimes flies high above the trees, so high as to appear a mere speck against the sky, and to be only recognisable by the curious star-shaped figure which the large ears impart to it. At other times it has swept boldly past me, and seized moths from a sugared flower-head, undeterred by the light from my lantern. In this way, it is quite the most fearless of all our Bats, and owing to its ears, looms up very large as it crosses the ray of light. I have never seen it hawking low over water, as the last species, and Daubenton's Bat,

so regularly do. From the marked difference in size sometimes noticeable amongst individuals upon the wing, it is very easy to understand how the species came to be divided into two, the Greater and Lesser Long-eared Bats. This difference must, I think, be due to age, rather than sex, unless it constitutes a racial distinction, which does not seem to be admitted, for the large individuals are always bolder, and much swifter upon the wing, than small ones; they are, also, generally less numerous. I have sometimes seen parties consisting entirely of one or the other, and large specimens examined have generally been paler in colour than small ones; I have, however, seen young ones, before they had left the nest, in which the fur was of a mousy grey colour all over, without any shade of red.

A pair of Long-eared Bats had their abode in the chimney of a house in the village, and as no crevice was visible on the outside, I concluded that they must go down the chimney for some distance, as swallows sometimes do, notwithstanding the fact that smoke was constantly issuing from it. There was no pot upon the stonework, and the entrance was fairly wide. One of the old Bats had the misfortune to fall down the chimney into the house; and though it escaped the fire, it succumbed to the injuries it had received in the catching, as it flew about the room, before it was brought to me, carried with the kitchen tongs. It was so carried by the children, because they were afraid to touch it, their parents believing the bite of any Bat to be poisonous,—a lack of knowledge which is excusable in persons of their position, when there are still so many educated ladies, who abhor the sight of the harmless creature flitting past them as much as they dread the appearance of a mouse in their room. The idea is that the Bat “will get into their hair” (about the last place such a creature would wish to be in, one would suppose), and “they would never be able to get it out again”! What the origin of the superstition (for it is really nothing less) can have been, it is difficult to imagine; but as it exists over a large part of the country, and was, I found, in 1906, being taught, as a fact, as part

of a "nature lesson," in a large Liverpool school, it is worthy of mention if only for the sake of driving a nail into its coffin.

We never saw more than one pair of the Long-eared Bats together about the chimney above referred to, but there must either have been more, or else the widowed lady must quickly have procured another spouse, for two still remained flying in company, and not very long afterwards (it was in the middle of July) the children brought me a young specimen, which they had found creeping about on the road, near their house. This one was uninjured, and must, I think, have been accidentally dropped by its parent when flying with it. It was quite small, and unable to use its wings, except as legs, and was covered with short silky hair that clung close to the body. It climbed actively upon my coat, or on the rough surface of the gable wall of the house, and was liberated at dusk on the latter. It quickly crept up out of reach of our hands, and was soon invisible in the gathering gloom, and was never seen again; but as one anxious Bat was flying around, and was several times seen *almost* to settle on the wall beside it (or where we judged it to be), I have no doubt it was ultimately carried back to the nest. The old Bat repeatedly squeaked, and the children said they could hear the young one "replying to it"; it certainly opened its mouth frequently while held in my hand, as though to emit some sound; but if it did so, its voice was too thin for my ear to catch.

On the evening of 10th April, a single Long-eared Bat was noticed hawking over the birch woods above Craig-y-Tan, in company with some Pipistrelles; but, except on that occasion, I never saw one amongst the mountains, or very far away from the village.

Daubenton's Bat was frequent round the lake, skimming right over its surface, on fine summer nights, and picking up, with great nimbleness, the large Sedge-flies that fluttered there. Five or six Bats might sometimes be seen following one another; but more commonly, when on the feed, they went "each on their own hook." When one chanced to pass near me, it was generally easy enough to attract its

attention by throwing a light stone into the water, or better still, if it were near enough, a large artificial fly that would not sink, and dragging it over the surface in imitation of the rippling track made by a "Sedge." When this was tried, the Bat would generally stoop to, and sometimes touch the fly, but would never lift it. Their perception is remarkably quick ; for though this species, and the Pipistrelle, will often fly at a small artificial fly dangled in the air in front of them, I have never seen one hooked by the mouth. I believe it may occasionally happen, but it must be very rare, all those I have seen caught on a fly having been foul-hooked, usually in some part of the wing. A natural insect is picked off the hook with the greatest neatness, almost without jerking the line ; but, as just stated, I have never seen a Bat hooked in the mouth even in that way.

The exceedingly small eyes possessed by all our native Bats are in marked contrast to those of most other nocturnal creatures, in which the organs of sight are very large and full ; and on this account it has sometimes been thought necessary to suppose that, in Bats, the vision is aided by "the possession of a sixth sense unknown to us." Spallanzani long ago demonstrated that "Bats, when deprived of sight, and, as far as possible, of hearing and smell also, still flew about with equal certainty and safety, avoiding every obstacle, passing through passages only just large enough to admit them, and flying about places previously unknown, with the most unerring accuracy, and without ever coming into collision with the objects by which they passed." He also stretched threads in various directions across the apartment with the same result. In no case were the Bats observed to come in contact with the threads ; and from these experiments it was assumed that "it is by means of the pulsations of the wings on the air that the propinquity of solid bodies is perceived, by the manner in which the air reacts upon their surface."¹ Commenting upon the above, Professor St George Mivart² says : "Certainly, if the wing does possess such sensibility, the great extent of its surface must intensify it to a high degree. Now, the wing is richly supplied with

¹ Bell's *British Quadrupeds*.

² *Types of Animal Life*.

nerves, while the power of feeling by means of the nerves depends greatly on the amount of blood supplied to them. This we all know by the numbness we can bring easily on in any one of our fingers by tying a string tightly round its root, which causes it, as we say, to 'go to sleep,'—a condition occasioned by depriving its nerves of their due supply of blood. The circulation of that fluid in man and beast is brought about mainly by the rhythmical contractions of the heart, while this is aided by the elasticity of the arteries, which, though not themselves contractile, have a power, through their elasticity, of propelling the blood which is not possessed by the veins.

“Now, it is a very remarkable fact that the veins in the Bat's wing are positively contractile, thus serving in a most exceptional manner to propel the blood, and so, indirectly, augment such powers of sensation as the delicate membrane of the Bat's wing may be supplied with.”

No one who has watched a Bat for long upon the wing can have failed to be struck with its marvellous dexterity of movement, whether in avoiding obstacles, or in securing its insect prey. It never loses its head, and flutters round a lamp, as insects and birds will do; nor, when confined in a room, will it dash itself in futile panic against the window-pane. From the quotations just made, it is almost impossible to doubt that the specially sensitive wing plays an important part in enabling a Bat to avoid collision with glass, or other objects that may beset its path; but, nevertheless, its perception of tiny insects, and their adroit capture, while the Bat is passing at a rapid rate through the air, is sufficient to demonstrate a very keen sense of vision, despite the smallness of the eyes. My own observations would all lead me to believe that any sense of touch that may be possessed is far subservient to the powers of sight. It is quite surprising at what a distance a Bat will perceive a fly upon the water, and its quickness, in detecting an imitation, is scarcely less extraordinary. The art of the fly-dresser, that suffices to deceive the eye of the most suspicious trout, is useless against a Bat, even although, as Kingsley once expressed it, that art is raised to the extent of a “tenth power fraud.”

Admitting this wonderful power of vision, where the capture of prey is the object, its supreme importance in directing the safe flight of its possessor can hardly be doubted; but, as still further elucidating the subject, I have repeatedly seen a Bat foul my gut casting line, when hung in its path, and noticed that it was always a wing that fouled it, and never that part of the body directly guided by the eyes.

The Noctule was the only other species of Bat identified at Llanuwchllyn. It was not numerous; and the few pairs seen from time to time were, I think, visitors, perhaps from Bala or elsewhere, rather than residents; experience in other districts having led me to look upon this Bat more as a suburban than as a truly rural species. I have also generally seen it flying distinctly in pairs, even although several couples might be visible at the same time. Perhaps the larger size of the species makes the difference in that respect more conspicuous in individuals. In each pair, one is generally appreciably larger than the other; and in three cases, when the large one was shot, it proved to be a male. No specimen of the Noctule was killed at Llanuwchllyn, nor, indeed, was it necessary for purposes of identification, as the flight is as easily recognised as that of a Sandpiper, to which bird I have sometimes thought it bore a slight resemblance upon the wing. The Noctule was never seen here except on warm nights in summer; but elsewhere I have noticed it abroad, and active, as early as the end of April, and as late as the middle of October. They appear soon after sunset, sometimes while it is still quite light; and, coursing through the upper air amongst the Swifts and Swallows, well justify the name of *Alti volans*, bestowed upon the species by the author of the *Natural History of Selborne*. Whilst watching a large number of Rooks, and Jackdaws, gyrating above their roosting place, on 25th September, I was much interested to see a Noctule pass right through the flock several times, paying as little attention to the birds as they did to it. The rush of the several hundred pairs of wings, one would have thought, was enough to disconcert any Bat, and it seemed more curious still that the Rooks should make no attempt to mob it.

That the Noctule is, however, not altogether exempt from the attack of feathered enemies, I once proved by taking the skull of one, along with those of several Pipistrelles, from the castings of a Barn Owl, picked up beneath a roosting place of that bird, in a ruined cottage. It had often enough, already, been demonstrated in this way, that Owls frequently prey upon Bats ; but the nocturnal habits of both afford so little opportunity for the study of their ways in a state of nature that it was with peculiar pleasure that I once witnessed an Owl attempt to take a Bat upon the wing. It was in the early dusk of a September evening, and I was standing against a solitary tree growing in the bottom of a valley, one side of which, across the river, was thickly wooded. More than one Tawny Owl was hooting in the wood, and many Bats were flitting round my tree. I was watching these, when an Owl glided from the wood above, on apparently motionless pinions, just as I have often seen a Sparrow-Hawk advance upon its prey, and, descending in a direct line, made a stoop at a Bat within twenty yards of where I stood. Against the clear sky, I was distinctly able to see the legs thrust out to clutch the prey, but the stroke was unsuccessful. The Bat shifted, and turned, but was still being pursued by the Owl when they disappeared from view, and, in the short interval, I saw two more resolute attempts made to seize it. From this it is evident that Owls, sometimes at least, take their prey upon the wing, and even pursue it in the air for some distance, and it is no doubt in this way that many of the Bats, whose remains are found in their excuviae, are taken. Indeed, there seems small probability of Bats often falling into the clutches of an Owl in any other manner ; for, as a rule, they neither sleep, nor breed, in places where it would be possible for so large an enemy to get at them. I have often been puzzled to imagine how it was that they were so frequently captured, and so probably have other naturalists, but here would seem to be the explanation. The only other account of the witnessing of the taking of Bats upon the wing, which I recollect to have read, appeared from the pen of Mr Pryer, a corresponding member of the Zoological Society, and, although both the

captured and the captors were so very different from any of the animals here dealt with, his account is so interesting that little apology is, I hope, necessary for making the following rather lengthy extract from it. It appears in the *Proceedings* of the Society for 1885, p. 534, *et seq.*, and refers to observations made in Borneo, in the exploration of caves inhabited by the Swifts, which make the edible nests so much prized by Chinese epicures. He writes—

“At this point I found myself at the mouth of a cave named Simud Putih, *i.e.* the White Cave. The entrance is about forty feet high by sixty feet wide, and descends very steeply, widening out to a great size, and having a perpendicular unexplored abyss at its furthest point. This cave is used by the nest gatherers as their dwelling-place, and at the entrance are their platforms of sticks, one of which was placed at my disposal by the head man; it is also the cave by which the great body of the Swifts enter. Immediately outside it is a great circular opening leading sheer down into Simud Itam; this is one of the two openings mentioned as giving light to that cave, and is the entrance most in use by the Bats. As soon as I had unpacked and settled down on my platform, I sallied out to find the material from which the birds make their nests, as my previous experience is that birds do not, as a rule, travel far for the bulk of the material they use. I was speedily successful in my search. It is a fungoid growth which incrusts the rock in damp places, and, when fresh, resembles half-melted gum tragacanth; outside it is brown, but inside white, and little if any change in its consistency is effected by the bird¹; the inside of the nest is, however, formed by threads of the same substance, which are drawn out of the mouth in a similar way to that of a caterpillar weaving its cocoon.

¹ This was an error, it being now admitted that the nests are formed entirely of mucus secreted by the salivary glands of the birds which when dry looks like isinglass. Our own Swifts glue together the scanty materials of which their nests are formed, with a similar saliva. The birds, which form the edible nests above referred to, belong to the Genus *Collocalia*, which differs in several respects from that to which our Swifts belong, and in which the development of the salivary glands is especially remarkable.

“The Malays told me to be sure and return to Simud Putih at five o’clock, as I should then see the most wonderful sight in all Borneo,—the departure of the Bats and the return to roost of the Swifts. I accordingly took a seat on a block of limestone at the mouth of the cave ; the surface of the coral of which it is composed is quite fresh-looking, notwithstanding that it must have been many ages in its present position, several hundred feet above sea-level. Soon I heard a rushing sound, and, peering over the edge of the circular opening leading into Simud Itam, I saw columns of Bats wheeling round the sides in regular order. Shortly after five o’clock, although the sun had not yet set, the columns began to rise above the edge, still in a circular flight ; they then rose, wheeling round a high tree growing on the opposite side, and every few minutes a large flight would break off, and, after rising high in the air, disappear in the distance ; each flight contained many thousands. I counted nineteen flocks go off in this way, and they continued to go off in a continual stream until it was too dark for me to see them any longer. Among them were three albinos, called by the Malays, the Rajah, his son and wife.

“At a quarter to six, the Swifts began to come into Simud Putih. A few had been flying in and out all day long ; but now they began to pour in, at first in tens and then in hundreds, until the sound of their wings was like a strong gale of wind whistling through the rigging of a ship. They continued flying in until after midnight, as I could still see them flashing by over my head when I went to sleep. As long as it remained light, I found it impossible to catch any with my butterfly net ; but after dark it was only necessary to wave the net in the air, to secure as many as I wanted. Nevertheless, they must undoubtedly possess wonderful power of sight to fly about in the dark in the deepest recesses of their caves, and to return to their nests, often built in places where no light ever penetrates.

“Shortly before sundown a pair of Kites made their appearance, and, taking their station over the Bat chasm, would every now and then swoop down into the thick of the Bats, generally securing a victim every time. I shot both these

marauders, which proved to be *Haliastur indus*, a very beautiful but common bird. There were also several specimens of a Hawk, working away on the Bats in a very business-like manner, and woe betide the unfortunate Bat singled out from its flock and put in chase! The way those Hawks took the Bats one after the other was astonishing, and strongly reminded me of a man eating oysters. I shot several of these Hawks, but only secured one, the others being lost over the side of the cliff. It proved to be the rare *Machirhamphus alcinus*, remarkable for the size of its gape and its small beak, both of which very much resemble those of the Swift. Its habits in taking its prey are also similar, the Swift catching and swallowing its prey while on the wing, in the same way as this Hawk does.

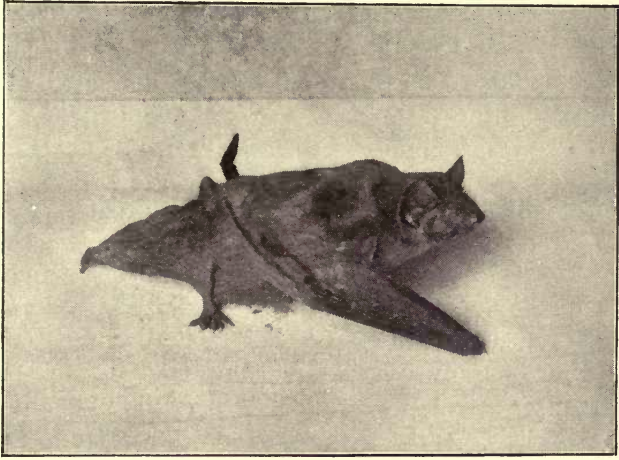
“Arising before daylight, I witnessed a reversal of the proceedings of the previous night, the Swifts now going out of Simud Putih, and the Bats going into Simud Itam. The latter literally “rained” into their chasm for two hours after daylight. On looking up, the air seemed filled with small specks, which flashed down perpendicularly with great rapidity, and disappeared in the darkness below.”

The perpendicular descent of Mr Pryer's Bats recalls an interesting experience I had with a Noctule at Llanuwchllyn. As already mentioned, when these Bats visited us there, it was always very high up in the air that they were seen, coursing swiftly about like Swallows. One evening, about the end of June, I was seated, at dusk, on a stile overlooking a still reach on the Lliw, awaiting the rise of a good trout. It was absolutely calm, and one or two Long-eared Bats, and Noctules, were hawking about, the latter as usual high overhead. Suddenly there was a loud rush of wings, rather recalling the sound made by a drumming snipe, and looking up, I saw a Noctule descending like a falling stone, only that its wings were in rapid motion. It flew headlong to within a few feet of the water before sheering off, and, as it did so, something fell with a splash into the water. As it floated, I had no difficulty in getting the latter ashore, when it proved to be a Cockchafer. The Bat must therefore have met the beetle high in the air, have knocked it over,

but failed to hold it, and been endeavouring to recover its falling prize. To complete the chain of destruction, I threw the chafer back into the pool ; it was taken by a trout, which five minutes later rose to my Greenwell's glory, and accompanied me home to supper, a nice three-quarter pounder !

In other districts, Noctules have occasionally passed pretty close to me, in hot pursuit of one another, and in their downward dash their wings then make quite a considerable "swish." When walking on the ground, the tips of the wings are curled up above the back in the curious manner shown in the accompanying photograph : the body is tilted forward in a series of awkward jerks on the long forearms,—a very clumsy mode of progression when the animal is in a hurry. Like other Bats, this species has no difficulty in rising from a perfectly level surface, the start being effected by a slight jump, the wings being instantly extended, and lifting the body clear of the ground at the first beat. The jaws, and teeth, in the Noctule are very strong, suggestive of a carnivorous animal, and it bites savagely when handled, easily drawing blood from the fingers ; it also utters a hoarse "*garr, garr,*" which without much exaggeration might be termed a bark. One, whose wing had been broken, "barked," and uttered shrill squeaks, while held in my hand, and these were answered by its mate flying around. She (it was the male that had been shot) "barked" repeatedly at us, and made constant stoops to within a few feet of our heads, like a Lapwing when its young are endangered, whenever her partner cried out, and it was then that the "barking" sounded most aggressive. The smell of this Bat is peculiar, and unpleasant.

It is curious that a captive Bat will often prefer flesh to insect food, when a choice is offered it. I have more than once found this to be so with Daubenton's Bat, as well as with the Pipistrelle. Neither of these species, when unhurt, has had any difficulty in rising from the water, when knocked into it by a rap from my fishing-rod. I have frequently found a small pale-coloured flea on these Bats, and on one Noctule there was a large tick, greatly distended



NOCTULE WALKING.



DAUBENTON'S BAT.

with blood. Fragments of the elytra of beetles, found beneath the nesting places of Bats, would seem to suggest that such prey is frequently carried thither to be discussed at leisure. In reference to so large a mouthful as a Cockchafer being occasionally taken, a friend once told me that he had seen a Long-eared Bat carry off a male Ghost Moth that was hovering near him, and that the wings, nipped off close to the body, were dropped within a few yards.

On 12th July 1906, a very large Bat flew close to me near the head of Bala Lake, skimming low over the water with a remarkably slow heavy flight. It appeared much larger than any Noctule I ever saw, and was certainly not of that species; and as no other British Bat is known to greatly exceed the Noctule in size, I am entirely at a loss to know to what species this individual should be referred. I once saw a similar Bat in the park at Welbeck Abbey—my notebook shows that it was on 27th May 1899,—which I have no doubt was of the same species as this Llanuwchllyn specimen. In that case, also, the slow owl-like flight was particularly noticed, my comment made at the time being that “the body was as large as a Missel Thrush, and the wings very long and decurved; and as it approached us in an open ride, and passed over our heads within six feet or so, it looked like a ‘young owl’! It quite took me by surprise, as I had never before seen such a beast upon the wing, and was not in the least prepared for it. The old man (a keeper who was with me) said he had once or twice in his time seen ‘a large bat,’ but considered them rare. It was certainly much larger than a Noctule.”

CHAPTER XXXVIII

Badgers—Superstitions concerning—Otters—Rats—Assurance of—A Water Hen's nest—Tracks in the snow—A bottomless pit—Devils—Keeping the Ducks off the spawning redds.

THE Badger, known by the various names of *Bryfwch*, short sow, *Daiarfochyn*, earth pig, *Mochyn bychyn*, little pig, *Ydelwadydd*, *Pryf llwyd*, grey beast, etc., but hereabouts more commonly by the simple Anglo-Saxon *Broc* than any other, seems to be almost exterminated in this part of Wales. I did not personally meet with any trace of it alive, and only saw one stuffed specimen which had been trapped near Llangowr a few years ago. Yet rare though the animal itself has become, the absurd old belief that, "owing to the legs on one side of the body being shorter than those on the other, the animal is best adapted for travelling along steep hillsides," still survives almost everywhere. One person assured me that the reason that the Badger had become so scarce was that it so often committed suicide by travelling along a ledge of dangerous rock, and falling over the precipice owing to its awkwardness in turning! Another curious complication arising out of its supposed misshapen structure is, or was, that it was believed always to hunt round the hill in the direction of the setting sun, thus obtaining the advantage of any twilight that might remain. Hunting slowly all night, it arrived on the opposite side of the hill in the morning, in time to be guided to its lair by the rising sun. It rarely, if ever, left its own particular mountain; and, as it could only travel comfortably in one direction, all that was necessary to secure a good hunt was to surprise the animal as soon as possible after it had set out upon its nightly ramble, when a run all round the hill, and back to near the starting point, might be

relied upon! It is only necessary, for the benefit of very youthful readers, to say that none of these beliefs have the slightest foundation in fact, the limbs of a Badger being no more misshapen than those of any other wild animal.

The district is hunted by the Borth Otter Hounds, or, as the pack is now called, "The Border Counties," Otters being quite as numerous here as in most places. There was a brood at the head of the lake each year I was at Llanuwchllyn, and in one season two; while others were probably reared on the mountains, one nest being discovered by the keeper, amongst a bed of rushes, on the bog on Ffridd Helyg-y-Moch. This nest was a large domed chamber, on the surface of the ground, but excavated into the dry roots of a big bunch of rushes: quite a mass of grass, and other herbage, having been gathered together for its construction, till the whole resembled a small hay-cock. It is not usual for Otters to make use of such open nurseries, underground couches being generally preferred for the young; but I have known parallel cases, in similar situations, and they are, probably, of not infrequent occurrence here. At the head of the stream which flows westward from the Ddwallt, near Rallt-llwyd, there was a litter in 1904, in a very shallow excavation in the peat, from which both old and young were easily dislodged by a man breaking in the roof of the chamber with his foot. The whole family, I was informed, made good their escape in the narrow ditches intersecting the bog, which, though mostly containing only shallow water, have very soft, peaty bottoms, and are much overgrown with weeds. At the falls on the Lliw there is a stronghold which is seldom untenanted; and as I have seen hounds draw up to within a mile of the place without indication of a trail, though there was good reason for knowing that there was an Otter so close above them (they do not draw higher up the river), it would appear that the animals must, at times, prudently confine their excursions to the upper part of the stream, and so escape undesirable attention, or else that they may sometimes leave no trail behind them, as suggested below. Up here they can experience no dearth of summer fare, for, in addition to trout and eels, many of the water holes abound

with frogs, and there are other "pickings" on land, which an Otter does not disdain to notice.

There are one or two places, on the side of the lake, where Otters frequently lie up, as evidenced by their footprints on the snow; and there they are beyond the reach of hounds, for it would be impossible to hunt it without the help of boats, and this is not attempted. Occasionally, also, one makes its lair on the upper reaches of the Llafar, and there, also, it escapes molestation. I was told of one, which had been seen to land on the promontory at Llangowr, after having been disturbed by hounds, at the mouth of the Llafar, on the opposite side of the lake, about a mile away.

By some of the inhabitants, Otters are accused of robbing Water Hens' nests; but this, I fancy, is much more likely to be the work of the common brown Rat, not to be confounded with the Vole, which is so commonly called a "Water Rat." Having found a Water Hen's nest, one day, on the branch of a thorn, overhanging a pool, I took a photograph, and went back a few days later, expecting to find the bird sitting, and in the hope of obtaining a view of her upon the nest. A *Llygodyn fawr*, or "big mouse," as *Mus decumanus* is called here, had forestalled me, however. Before I reached the pool, the cries of an angry and agitated Water Hen were heard, and, looking cautiously over the bank, I was in time to see a Rat leaving the nest, every egg in which it had broken and sucked.

Although the Rat is not very numerous in this part of the country, it certainly lacks none of the assurance for which it is so notorious elsewhere. During the winter, they actually ate a hole through the floor of a hutch in which some half dozen Ferrets were kept, in order to steal the Ferrets' food; and the keeper told me that he had seen a Rat looking out of the hole, while the rightful owners of the hutch were busy at their bread and milk, evidently impatient for an opportunity of stealing a share of the meal! For a long time the hole remained too small for a Ferret to pass it; but, by and by, as a result of the Ferrets scratching above, and the Rats gnawing beneath, it became so enlarged that two or three of the Ferrets managed to squeeze through it,

and, let us hope, took vengeance on the impertinent thieves. The keeper, it may be added, was a notorious and most successful "vermin" killer; and his apathy in neglecting to keep down the Rats, at his very door, while no trouble was considered too great that promised to lead to the destruction of a Weasel, or a Sparrow Hawk's nest, may be taken as a very fair example of a too common failing.

In one place, where a dead sheep had been laid into the fork of a tree (a very common practice in these parts), and left there, it was completely skeletonised by Rats, which had worn a regular path to and from it from the water side. Seeing a Rat descend the tree one day, when I was fishing, led me to examine the place; when, on the sheep being touched, two more Rats bolted from it, and made helter-skelter for the river. The skin of the sheep was almost entire, and was by this time pretty hard and dry; but through an entrance effected in one thigh (that part of the animal which was first reached by a Rat ascending the tree), almost the whole contents of the body had been extracted, leaving practically nothing but "a bag of bones," and forming a very snug, if somewhat unsavoury retreat.

On the snow there were generally some traces of Otters to be found, and from these an insight into some of the doings of the animal can sometimes be learnt that are difficult of attainment without them. Thus, during one hard frost, when the lake and most of the rivers were frozen over, a track on the Twrch showed that an Otter must have lain up the previous day, somewhere about an old saw-mill in the village, where, I am quite sure that any of the inhabitants would have been very much surprised to find him. The tracks in the early months of the year (January to March) invariably showed that two animals, easily recognised as male and female from the difference in the size of the prints, had been hunting in company, and retired to the same holt, though in autumn that was not so often noticeable. With a keeper, one day, I followed the tracks of two up the Little Dee, until we lost them, owing to rain and fresh snow falling, right out on the moor, where they were probably making for some well-

known cairn, beyond the source of the stream. Of course, the dimensions of the stream, in such cases, make it of practically no importance, as a means of escape in case of surprise, so that everything has to be staked upon the strength of the fortress; and when they choose to lie up away from the chance of escape by water, Otters generally choose a very secureholt. As a rule, it will be amongst rocks, and in this case, I believe, the collection of *débris* at the foot of the Ddwallt precipice had been fixed upon; where, creeping about beneath the huge masses of tumbled rock, the animals might safely have defied a whole army of terriers for more than one day. These rocks are a well-known stronghold of Foxes; but the local hunters are all averse to allowing their terriers to enter them, several dogs having been lost there. In one place, where unusually large slabs are piled one upon another, a terrier, which never returned, is said to have been heard baying so far below the surface, that it is thought the overlying rocks conceal a buried precipice, and the place has received the name of *Afagddu-diphwys*, or the bottomless pit. Naturally, such a spot is not without its devil, and strange stories are told of apparitions that have been seen there. A "Holy Man" is said to have his residence, in a cleft, in another part of the mountain, and to be constantly employed in keeping the demon from works of evil. Not far away is the *Lech Offrwm*, or stone upon which sacrifices are said to have been offered; and *Y Beddawhir*, or the Ancient place of Burial, is within easy distance. A corlan, or sheepfold, under the shelter of the precipice, has also some curious tales attached to it: a lamb born within it is said to be always more or less black. On a river, the lying up place of an Otter is almost invariably within touch of some stretch of deep water, capable of affording a safe get away from any enemy, except a crowd of people, or a man with a gun; and most of us are aware how often the animal may make play, even with these—backed up though they be by a pack of hounds—and yet escape with a whole skin.

The track left by an Otter upon snow is, as might be expected, rather a sprawly affair, plainly indicating the rather

clumsy progress of a heavy animal, who is not in his element on *terra firma*. In galloping, the feet are planted in a series of rough fours, each print very distinct from the rest, the hind ones a little in advance of the fore, with their toes well turned out. One day, when most of the river was covered with ice, I followed a double track from the lake, for three or four miles up the Lliw, and in the whole of that distance the animals had not once touched land. No fishing had been done *en route*; but one Otter had systematically followed the other all the way, swimming where open water allowed, sometimes diving beneath bridges of ice, and only crossing it when the frozen state of the pools left no alternative course. The centre of the stream had been kept, as nearly as possible, in this way, throughout the journey; and from the extreme care taken in avoiding the land, I could not but think that the object of the travellers had been to leave behind them no clue to the road they had taken. They probably could not understand that the snow would tell a tale; and had the same care been exercised in its absence, it was easy to see how hounds might have drawn up the stream, an hour or so later, without hitting upon a single touch of scent. Not improbably it may be by precautions such as these that Otters sometimes travel home, when making for a holt up some small river; and the same reason may explain a find sometimes taking place quite unexpectedly, when hounds have drawn several miles perhaps, without signs of a drag; or, where the main river has been left for some tributary brook, for the sudden and inexplicable ending of a drag which often so greatly puzzles huntsmen and their fields.

In Cymric, the Otter is generally called *Dyfrgi*, or *Dwrgi*; amongst the mountains round Llanuwchllyn I have heard it spoken of as *Dim-y-dwr*, or simply "water dog." It is frequently accused of taking the tame ducks, which often remain on the water all night, and I had at least one ocular demonstration that the charge was well founded. On more than one occasion, Water Hens were found to have been eaten by them, and at the remains of one of these a young Otter was trapped. The latter was a very small one, weigh-

ing only about 4 lbs. on the 18th January. Some of the farmers blame Otters for the loss of an occasional lamb, and have at any rate better evidence to support their accusation than in the case of the Buzzard, against whom a similar charge of sheep-stealing is often laid. If it would only keep the tame ducks off the spawning redds of the trout in spring, "the water dog" would, I am sure, earn the gratitude of all the followers of the great, though as yet uncanonised, St. Isaac!

CHAPTER XXXIX

Squirrels—And Stoats—A tree-climbing Stoat—Foresters' friends—Sure-footed animals—Weasel superstitions—Fairies—A mouse-hunt—Stoat and Vole—Stoat's larder—Eels in winter—An amphibious cat.

THE Squirrel (*Y Gwiwer* in Cymric) is numerous, and will probably become more so as the new plantations grow up round Llanuwchllyn, for, of all trees, conifers are most preferred by it whether for food or shelter. It may not be generally known that the Stoat is one of the best natural checks we have upon the undue increase of the Squirrel; and it is not unlikely that the disappearance of the one animal, before the traps of the game-preserve, may have some bearing upon the marked increase which has taken place in the numbers of the other in so many parts of the country. There was a young plantation of pines, and firs, here, of perhaps ten or fifteen years' growth, in which every Squirrel's drey was raided, and the Squirrels practically driven from it, altogether, I believe, through the exertions of a single Stoat that had taken to a semi-arboreal habit. Naturally, the nests of small birds also suffered from its climbing propensities; but that was a matter which a forester, at any rate, would have willingly overlooked in return for the destruction of one of the worst enemies of his coniferous timber. Similar experience is not wanting elsewhere; and where timber, rather than game, is the main end in view, a Stoat is deserving of more consideration than it usually receives. In olden days, a Marten might, no doubt, have been a yet more effective agent for the keeping down of the rodents; but now a Marten is not only almost out of the question, owing to its rarity, but is practically unobtainable. Of course, as the trees grow larger, the Squirrels will find greater security from an enemy, whose natural sphere is

upon, if not *below*, the ground ; but that they are not beyond the reach of a Stoat, even in the highest trees, is well exemplified below.

I was one day fungus hunting, amongst the open trees bordering the Llangowr road, when my attention was drawn to a Stoat, jumping about amongst the grass, in an adjoining field. The trees were large oaks, and chestnuts, standing at a good distance apart, and, taking up a position against the trunk of one of them, I remained unnoticed. The Stoat continued gambolling aimlessly about, apparently only bent upon exercise, or enjoying himself in the sun, for he paid no more attention to a couple of rabbits that were feeding near than they did to him. Evidently, too, the rabbits recognised that they had nothing to fear from their arch-enemy in his present mood ; for, although the Stoat once or twice galloped a few yards after one or other of them, in a desultory sort of fashion, they did not run away, but quietly resumed their feeding as soon as he desisted. After rolling about on the grass, mounting upon the tops of various large stones, upon which he sat upright on his haunches for some moments, in order to take a good look round, and going through some other acrobatic feats, the Stoat turned in the direction of where I stood, and had approached me pretty closely, when, of a sudden, his manner completely changed. It was evident that he had struck a trail that interested him, and his excitement visibly increased as he worked out the line. Soon I became aware of a Squirrel, hopping about, on a fungus foray like myself, about a hundred yards up the slope, and away from the wood, and it was quickly apparent that to it belonged the scent which the Stoat was puzzling out. He had approached within a few yards of the Squirrel before either became aware of the presence of the other, and a race for the wood immediately ensued. For pace, the animals were very equally matched, both advancing by long bounds, the Stoat appearing to gain a little ; but when his quarry doubled, he was thrown out several yards, apparently owing to defective vision, and as a result the Squirrel reached a large chestnut, some ten or fifteen yards to the good. The trunk of the



BANK VOLE.



A WINTER STOAT.

tree was fairly rough, but quite straight, and without branches for about fifteen feet ; about ten feet from the ground there was a hole, where a branch had decayed long ago.

The Squirrel scampered up the tree without delay, turning spirally round the trunk as it did so, and, passing the hole, was soon lost to view amongst the branches. When the Stoat came to the tree, he first smelt all round it, and apparently taking the Squirrel's foil upon the bark, climbed the tree with almost as much ease as it had done, and following the same spiral course. At the hole he halted a moment, as though to make sure that the game had not sought refuge there, and then went on up amongst the branches. Quite evidently he followed by scent, and presently I saw that he had again come within sight of the Squirrel, amongst the topmost boughs. Here, however, he was no match for his quarry, which leapt to a branch several feet lower, and the Stoat did not dare to follow. The tree was too much isolated to allow of the Squirrel's jumping to another, so it descended with all speed by the trunk, and my oak being the next to it, made directly towards me, and ran up that, within a foot or two of where I stood. I was quite exposed, but remained perfectly still, and the Squirrel gave no indication that it had noticed me. The pursuer, meanwhile, had regained the main limbs of the chestnut, and was carefully trying each branch with his nose. Presently he hit off the trail, and descended upon it as closely as he had followed it before. When he came to the ground, he lost no time in carrying the line up to within a few yards of me ; but, just when I was hoping that he, too, was going to pass me unnoticed, he wheeled suddenly round, and made off down the wood as fast as his legs could carry him. Evidently his keener olfactory powers had warned him of my presence, and I was destined to see no more of him ; but, nevertheless, I was not ill-satisfied, for I had witnessed an altogether most interesting hunt, and one which throws a side-light upon a habit of the Stoat, very easily overlooked. The game-preserved will, of course, remain implacable ; but the timber-planting landowner, and

his subordinates, might do worse than take the matter to avizandum.

It is very well known that Stoats can, and do, climb well upon occasion. I have frequently surprised one in a high tree, especially in firs, and have more than once watched one climb up and descend a considerable tree, for no other apparent reason than play, or exercise; but I was, nevertheless, a good deal surprised at the ease with which the animal just referred to descended, head first, the perpendicular trunk of the chestnut tree. All such creatures are exceedingly "sure-footed." One of the keepers at Llanuwchllyn one day saw a Stoat, followed by her half-grown family, cross the Twrch on the wire supporting-rope of a water-gate—an old pit-rope it is—not more than half an inch in diameter. Once, when fishing, I watched a Weasel make its way to a sort of island, in a boggy hole in one of the fields, along a single strand of wire not so thick as my pen-holder, forming a connecting link between two ends of a fence. Whether the special object of the journey was the pursuit of a Water Hen I do not know, but at any rate one of these birds had a somewhat narrow escape amongst the rushes, and, when it had flown, the Weasel very quickly returned over his suspension bridge again. Upon my mentioning this incident to a farmer, he at once predicted rain, saying that whenever a Weasel is seen climbing, or playing about the top of a fence, rain will surely fall within twenty-four hours. He recalled how once, in his youth, he had been starting with his father to drive to market, when, a mile or two from home, a Weasel was seen frisking along a rail by the roadside, and his father at once turned the horse's head, and, hastening home, made all endeavour to get his hay in. They finished the stack before dark, and next morning it was wet, the rain continuing till much of the neighbours' hay, lying ready for leading, had been spoiled!

Superstitions regarding the Weasel are, however, common, and are not confined to Wales only. Here, it is considered to be a sign of coming change in the weather to see a Weasel run round a stone in the direction contrary to the

sun. A Scotch rhyme predicts a worse fate from the same phenomenon :

“ A man mun ride when he canna wressel,
 But if at starting he sees a wessel
 Gan weddershins around a stane,
 His horse'll sune be back its lane.”

According to another, it is unlucky for a swain to meet the animal when setting out to see the lady of his affections :

“ Gin yer gan te meet yer lassie,
 An' a wesel chance te pass ye,
 Ye'd better bide at hame that day,
 She'll be as soor as lapper'd whey.”

While an Irish variant makes the meeting with a Weasel no less desirable to the fisherman than the lover :

“ If ye go fishin' or sweet-heartin',
 And meet a weasel when ye're startin',
 It's divil a throu't that day ye'll be killin',
 And ye'll find the lady verry unwillin'.”

One little girl told me that she regarded Weasels as good fairies, and that it was a belief widely shared in Merionethshire. “ If,” she added by way of backing up her opinion, “ they are not the ‘ Little people,’ where have the ‘ *Y Tylwyth Teg*,¹ gone ?” And when I suggested the rustling leaves, scattering before the autumn wind, as an alternative, she quickly replied : “ No, dead leaves can work neither good nor mischief, and the fairies could ; so can the *Wenci bach*,² I think, for I saw one on my way to school the day before the examinations, and I passed.” To such an argument there could be no reply.

When taking refuge one day from a heavy April shower, at the Flag Station, I saw a Weasel carry out a most interesting mouse-hunt, lasting for some twenty minutes, and resulting in the extermination of probably a whole colony of Field Voles. The Weasel was a very small one,

¹ *Y Tylwyth Teg*, literally “ The fair family,” a common name for fairies in Wales.

² *Wenci*, or *Gwenci bach*, “ little weasel.”

and when first observed was hastening in my direction, carrying a Vole in her mouth. With this she disappeared into a hole, amongst some old sleepers, on the opposite side of the railway. In less than a minute she darted out again, and began hunting the bank, high and low, in a very frenzy of excitement. Holes, and runs of Voles, were numerous, and in and out of these she worked at high pressure. Presently another Vole was started, and very quickly overtaken, and killed, and carried off to the retreat below the sleepers. Returning again and again, she went through the same performance, until four Voles had been accounted for ; a fifth afforded a little longer hunt, leaving the bank, while the Weasel was not in sight, and running some distance down the railway. Once, however, she hit off the trail, she followed it furiously, and soon overtook the runaway, and carried him, also, to her dwelling under the sleepers. All the Voles were full grown ; but large though they were, in proportion to the Weasel, they were all killed instantly, by a bite at the back of the head, once or twice followed by a slight shake, and were carried, at a canter, without difficulty. From her size the Weasel was evidently a female, and she may have had young below the sleepers to provide for, or she may simply have been enjoying the hunt for hunting's sake. That the latter is often the only motive for slaughter there is no doubt ; and taking that into consideration, it is not easy to gauge the amount of good a single Weasel is capable of doing, in a mouse-infested district, in a very short time. Whether this particular Weasel had young or not, she did not remain to discuss the food with them ; for, the supply of Voles being exhausted there, she continued her quest down the side of the fence, and when last seen she was springing at a Thrush, in the hedge, which narrowly escaped with its life at the expense of a mouthful of feathers !

On another occasion I saw a Vole captured by a Stoat, under rather peculiar circumstances. I was sitting amongst the rocks overlooking Ceunant Llechweddyfwyalchen, the narrow gorge by which one branch of the Little Dee debouches from Aran, when a Stoat was observed hunting

the bank below. It reached the foot of the cliff, and, apparently becoming aware of the presence of the Vole amongst the grass above, made a *détour*, and came in upon it within a few yards of where I sat. The Vole was quickly despatched, and carried off to the shelter of a whin bush, a little way off; and upon my driving the Stoat out of that, it fled at full gallop to the dingle, carrying its prey with it, with the ease of a dog retrieving a partridge, and quite undeterred by my pursuit, or the stick that was sent flying after it. The curious thing was that the Stoat seemed to wind its prey so far above it, and without hesitation to take the roundabout (and only) way of reaching it.

As an instance of the varied diet of such animals, as well as of the manner in which they are able to travel with heavy loads, the following may be worth recording. One day in early spring, a keeper came upon a track in the snow, which excited his curiosity. It was near the lake, and, after being followed for several hundred yards, was run to ground, on the side of the railway. Here, with the aid of some plate-layers, a Stoat was unearthed, and despatched, and in its larder were found a perch, and two eels, along with a freshly killed partridge, the latter of which it was supposed had been the cause of the unusual trail. The bird was intact, except for a little mauling of the neck. The Perch, about half a pound in weight, and the Eels, must almost certainly have been brought a distance of at least a quarter of a mile, and how such prey is captured can only be conjectured. During summer weather, when Eels frequently travel over land, they are, no doubt, liable to fall in the way of land animals—including the domestic cat, which sometimes brings them home, and about whose methods of capturing them speculation is often rife,—but, with snow on the ground, they would hardly be likely to leave the water voluntarily. It is, moreover, not usual to meet with them so early in the year, they being supposed to spend the winter buried in the mud at the bottom of the water. Of course, it was *possible* that all the fish might have been picked up dead by the shores of the lake, though their very fresh state did not seem to point in that direction.

Although Cats are not, as a rule, fond of wetting their feet, instances of their entering water, for the purpose of capturing fish, are not unknown. When examining the banks of the Llafar one day in the snow, for tracks of Otters, we came upon the unmistakable footprints of a Cat, which had hunted up the sides of the stream for nearly a mile, crossing, and recrossing the water, in several places. Where first noticed, the track showed that the animal had landed from a deep pool, four or five yards in width ; in other places it had crossed where swimming would scarcely be necessary for more than a few feet, but where it might have been supposed the strength of the current would have deterred any but an amphibious creature from venturing. In one or two other places, an extended swim was inevitable. The Cat had been travelling at its leisure, and, except for the sake of reaching some attractive hunting ground on the opposite side of the water, or for the deliberate purpose of fishing, there was nothing to suggest why it should have taken so unusual a course. No signs of the capture of prey of any kind could be detected ; and as in any case it is not easy to see how a swimming cat could expect to catch fish, it must be concluded that the animal merely showed its contempt of the water, as an obstacle to its progress, by crossing whenever it wished to reach the other side, and the state of the weather would seem to point to the fact that the contempt could only have arisen from long familiarity.

CHAPTER XL

Martens—Comparative harmlessness of—Pursuit of elusive dollar—A young Marten—Variations in Marten—Marten and Polecat—Tracking in snow—Food, and footprints of Marten—Home-coming of—Reconnoitring of the beyond—Shooting foxes—Mange in foxes—A hunting Marten—Craig-Llyn-Dyfi—Legend of—Marten and Buzzard.

THE Marten is now so rare in Britain that it deserves a chapter to itself, and in this must be condensed some of the experiences I had of this most interesting animal in North Wales, with occasional drafts on my old journals for knowledge of its habits obtained in other districts in former years. That so large a creature, long ago pushed to the verge of extinction, should survive here, and in some of the Highland forests, speaks volumes for its sagacity, and cunning, in avoiding traps, and keeping itself out of sight ; but at the same time points an instructive finger to its modes of procuring a living, and its comparative harmlessness to game. In the Highlands, its continuance is, no doubt, also due, in some measure, to the benevolent toleration extended to it by some of the old Lairds, and their servants, and the sanctuary of the quiet deer forests ; but in Wales, unfortunately, it enjoys none of these things. Here, every man's hand seems to be turned against it : with or without reason, the keeper traps it, if he can, and certainly without it, the farmer aids and abets him, to the best of his ability. That that ability is not greater than it is, all naturalists must be thankful ; and ere the time comes when, perhaps, it may have developed, let us pray that more enlightenment, or forbearance, may pervade the glens. The statement just made of the want of reason on the part of the farmer for killing the Marten needs qualification in respect that his object is often the pursuit of the elusive dollar. The skins of the animals killed, if in good condition, are in request by local *grandes dames*, as boas ;

while if a wealthy Saxon happens to be at "The Goat," a correspondingly enhanced value may be looked for. During my stay at Llanuwchllyn five Martens were disposed of, alive and dead, at from half-a-crown to twenty shillings each. One poor beast, that had been in confinement for two days, probably without food, devoured a blackbird, feathers and all, that was introduced into its barrel a short time before it was killed; while another, that was kept alive for some time, subsisted on rabbits, rats, and small birds, always showing a preference for the two latter over the first named, if they were procurable. A female, caught on 2nd March, gave birth to a single young one on 24th April; but, being very wild, she refused to suckle it, and it died a day or two later, when the mother made her escape.

In and round Merionethshire the headquarters of the Marten in Wales may be said to lie, and a number of animals killed, or captured, in that district have, within the last few years, been recorded in the newspapers. In 1905, a young one was sent thence to the Zoological Gardens in London. In March of that year, I saw one killed at Llanuwchllyn, and another that had come from near Dolgelly: in 1906, I saw three killed in the neighbourhood, and heard of two others; while in 1907, two more captures were made. Of those I examined, all except one were males, which is perhaps fortunate, as all came from a very limited area; and it is obvious that the small colony which still inhabits these mountains, cannot long stand a drain of this sort upon it, unless its females escape; and, if for no other reason than that it is killing the goose that lays the golden eggs, the hunters of that district would be well advised to spare the gentler sex. Those killed at the beginning of March were in excellent fur; but one on 2nd May had more than half cast its winter coat, and was ragged in appearance in consequence, and its fur of little value. Were the above-named hunters also to observe a close time, starting from, say, not later than 1st March, they might likewise find it good policy. All the Martens I saw here had a large amount of white

on the throat, more than is usual in Scotch examples, and it was always impure in colour, generally broken up by a few unsymmetrical spots of the surrounding brown, and with usually more or less of a pale red, or pale brown tint, pervading the white. In none of them was there any approach to the canary yellow sometimes found in the gular patch in Scotch specimens. In this respect, as well as in the paler shade of the upper parts of the body, Welsh Martens resemble those I have seen from the English Lake district more than Scotch examples, the latter being usually much darker—looking almost black at a little distance—from the fact that the black glossy hair is relatively so much longer that it protrudes further through, and, when the coat is laid smooth, more effectually covers the soft dull brown fur beneath. In fact the Scotch animals, living largely amongst trees, generally conform to the description of what was formerly called the “Pine Marten”; while the Welsh and English specimens, almost invariably inhabiting mountain tops, often far away from trees, represent the “Beech,” or more properly, perhaps, the “Stone Marten.” In very few examples, from either country, is the white of the neck at all pure; but when it is tinged with *yellow*, as distinct from pale brown, I have generally found its boundary more sharply defined, and the pale colour not so liable to be invaded by dark spots. As a rule, too, the yellow-tinged gular patches seem to be less in extent than the others. The neck of the Marten is thick and muscular, especially in the males, and the head appears large in proportion to the body: the face seems very flat, when the animal is looking straight at you, the prominent ears, and the nose, forming the corners of a regular triangle.

In Wales, the Marten is generally called *Pala-coed*, or *Bela-coed*, i.e. “Wood Marten,” but in some districts *Bela-graig*, or “Rock Marten,” is the more usual name; sometimes it is *Carlwm*. Round Llanuwchllyn, as in fact in most places, it is almost unknown except by name; but the memory of its former habitations still lingers in a few place-names, and in such proverbs as *Cyfrwys fel y bele*,

“As cunning as a marten.” *Bele* being the common Merionethshire rendering of the name, without any qualifying adjective. Many people one meets amongst the mountains will tell you of “the last marten that was killed in this district,” maybe five, ten, or fifteen years ago; and by all, except a few of the most knowing “fox-hunters,” it is regarded as already extinct: how long it will be before it actually becomes so is largely a question of the hunters’ forbearance.

No two nearly related animals could well differ more in disposition than do the Marten and the Polecat. Held in a trap, or brought to bay, the latter is bold, fierce, and aggressive, to an extent not equalled by any other animal in this country, except, perhaps, the wild cat. The Marten, in similar circumstances, is wild, and timid, seeking only to hide itself from view, and in spite of its powerful canine teeth, not much more disposed to bite the hand, or stick, which restrains it, than is a Squirrel. One which I came upon in a trap, one day, was sitting with its tail raised above its back, strongly suggestive of the attitude of a Squirrel. It did not see me at once, but for some time continued its occupation of biting to pieces the twisted brass wire (rabbit-snare wire) with which the trap had been fastened. A large portion of this (there was a long “string” of it) had been nibbled into pieces half an inch, or less, in length, and the trap was free; but the weight of the latter was, in itself, sufficient to prevent the poor Marten escaping from the depression of the rocks in which it had been set.

So retiring, and unobtrusive in its habits, is a Marten, that one or two may easily inhabit a wood, or range of rocks, for some time without their presence being discovered even by a keeper. They might, indeed, escape detection altogether, did snow never fall, for it is rarely that one is taken in a baited trap casually set for Stoats, or other “vermin”; but snow carries tell-tale tracks, that often lead to the undoing of the craftiest animal. For the accuracy of the following story I cannot personally vouch, but give it as it was told to me by an Inverness-shire man. About thirty years ago, when he was with the head keeper at Braemar, they

missed several rabbits from their traps, and one day in the snow came on the track of the animal that had evidently carried one of them off. This they followed for several miles, till at length it abruptly terminated fifteen feet away from the trunk of a solitary old pine tree, standing on the hillside. After a careful examination of the ground, they were forced to the conclusion that the animal had either covered that distance in its final bound, and, alighting on the trunk, had clung to it, and so left no mark on the snow, or else that it had jumped into a branch, that was higher from the ground than they could reach, and so gained the tree in that way. There was an old crow's nest in the tree, and, on one of the men kicking the trunk, the Marten showed its head from that, and was shot. It was one of the last to be killed in that neighbourhood, and was preserved by the then Commissioner to our late most gracious Queen, at Balmoral.

The snow also discloses the extent of a Marten's wanderings in the course of a night, and sheds light on other habits which, but for its agency, might pass unsuspected. In Merionethshire, I frequently followed tracks for long distances, in one instance close past the house of a keeper of my acquaintance, who would have given a good deal to have had the honour of catching a Marten, but who did not dream that such an animal ever visited his beat. There were a few hares, and rabbits, upon the ground, and the tracks made by these are so similar to a Marten's, that one day when I was out with him, and drew his attention to a line of footmarks, he unhesitatingly pronounced them to have been made by a rabbit, and not wishing to endanger the animal's life, I did not enlighten him, though I knew it to be the track of a Marten.

More than once I followed a track close past farm houses, where poultry were roosting out of doors, and the hen-house itself could have been raided without difficulty, but never once saw any inclination displayed to interfere with fowls ; on the other hand, middens, and other places likely to shelter rats, were seldom passed unnoticed. Such observations would seem to point in one of two directions.

Either the persecution it has so long undergone has effected a marvellous change in the habits of the Marten, forcing it to be more circumspect in its ways, or else the old accounts of its destructiveness to game, and poultry, have been exaggerated. Personally, I think the latter more likely to be the case, and that, in the days when less close attention was paid to the habits of wild animals, the Marten may sometimes have been blamed for depredations committed by its cousin, the Polecat, or other vermin. Bell, for example, says the Marten is "very destructive to game of every kind, and to all sorts of domestic poultry, from the pigeon to the turkey,"—which is certainly not an accurate description of those at present to be found in Wales, where I could never hear of any loss which could reasonably be set down to Martens, and where, to my knowledge, the animals frequently passed farm-steads, when poultry were sitting about within easy reach, without the owners even suspecting their presence in the country. One morning after a fresh fall of snow, I picked up a Marten's track, actually in the middle of the village of Llanuwchllyn, and followed it over the top of Aran, noticing as usual the places of call, which included a close inspection of the hovels at the back of the old mill, where a rat had been killed, and almost entirely devoured on the spot.

On other occasions, it has been noted how mole-hills have been visited, spring heads, heaps of stones, places where there was a roughness of herbage, or any other likely spot for birds to be roosting in, or where voles might be found. All such spots are carefully approached; and occasionally a spring, or a scramble on the snow, or a scratching through it in order to reach some hole beneath, indicate the efforts of the hunter, while a little blood may point to a success; but, save for that, no remains of small quadrupeds are commonly left to tell of their capture, and a few feathers are all that indicate the fate of a pipit or a thrush. In this way a few hours spent in tracking is often an interesting study of the habits of the animal, that may shed more light on its doings than whole pages of the most carefully written book. Thus, too, we learn the possible



A DEAD MARTEN.



POLECAT.

history of feathers of small birds, found when there is no snow on the ground, and where there is nothing to show that a hawk has been at work ; or of rifled nests of mouse, or vole, where the thief has evidently been some larger animal than a weasel, and where their situation might presumably have ensured their safety. The snow also discovers, as hardly anything else could do, the manner of the animal's progression. Thus the gait of a Marten, under ordinary circumstances, is seen to be by a succession of leaps, suggestive at once of the cantering of a hare, though in the triangular position of the footprints the track more closely resembles that of a large rabbit. Indeed, the likeness is often so great that no casual examination suffices to distinguish them. The trail may be followed for a considerable distance, and the tracker be still undecided, but perseverance will be rewarded sooner or later. If the track holds on in a comparatively direct course, it will soon become apparent that the animal can hardly have been a rabbit, while perhaps the bounds may become lengthened beyond the capacity of that animal ; that it is not a hare's trail will probably very soon be settled in the tracker's mind. But most certain indication of all, the trail will, sooner or later, certainly lead to rocks, or trees, and then any remaining doubt is quickly dispelled. Neither hares nor rabbits climb trees ; and amongst the rocks the trail will very soon lead where neither hare, nor rabbit, could go, and where the discretion of the biped will probably discourage him to follow, even if he were able to do so. A careful cast round the precipice will show whether the Marten has left it ; and though this may mean a long tramp, it will probably be less wearisome than attempting to scale the cliff, and should certainly prove decidedly less dangerous snow work. If no track is found leading away from the rocks, it may reasonably be assumed that the home of the animal has been located, and with that the naturalist should be satisfied for the present. If the snow continues, or a fresh fall occurs, a subsequent visit will probably confirm the previous observation, for the Marten is a most methodical beast, hunting in the same direction, and approaching its

lair, night after night, along almost the identical road. It appears chiefly to live in solitary state; and if we have been lucky enough to track a female home—she is always less in size than a male, and consequently leaves smaller tracks—and have time, and patience enough, to revisit the place very early some spring or summer morning, and get into ambush on the line of approach, we may have the satisfaction of seeing the young at play, or of witnessing the wanderer's return in full daylight,—a sight that, from the rarity of the animal, cannot now be often enjoyed in this country, but one that should amply reward any true lover of Nature for a good deal of trouble and inconvenience.

From a well-chosen position, and aided by a pair of good binoculars, a large extent of the bare hillsides, and mountain tops, which Welsh Martens now frequent, may sometimes be commanded, and with the knowledge gained by our observations in the snow it should not be a very difficult matter to keep the animal continually under view, for half an hour, or longer. If the morning be warm and fine, and there is nothing to alarm it, it will dally here and there, and put off a lot of time, as it nears its retreat. It may even sit, or lie down, on some sunny ledge, and remain there, enjoying the warmth, for quite a long time, or till the bark of a dog in the valley far below warns it that it is time to get to more secure quarters. It usually travels at an easy canter, in a fairly direct line on the whole, but with many minor deviations, for the examination of such places as have already been referred to. Some particular places, perhaps solitary rocks, or heaps of stones, will be visited every morning, and for the same purpose. Here it will stop to wash its face, or there to attend to some other personal business; but the curious thing is that, morning after morning, the same ideas seem to come into the creature's head, at exactly the same spot. Perhaps associations suggest them; but, be that as it may, our Marten may be counted upon to canter up the brae here, or down the brae yonder, almost with the regularity of an automaton. Should a line of wall, or turf dyke, intersect the course, it will certainly be followed for some distance, probably until some well-known, and

regularly used, hole permits that reconnoitring of the beyond, without which no beast of the weasel kind ever breaks new ground. No matter how low the wall may be, and in spite of the Marten's leaping powers, it will not be jumped before that formal inspection has been made; but after that ceremony has been gone through, the top of the wall may perhaps be used as the regular high road, as long as it happens to run in the right direction. Timidity, and excessive caution, are, in fact, the rules governing a Marten's every action, without which it could hardly have survived the relentless persecution that has for so long been its lot; but it is to be regretted that that cunning has not yet warned it, and the other members of its tribe, that, in these days of trapping, to go through the hole, is just about the most dangerous course that could be pursued. There is one piece of advice, which I would tender to anyone wishing to study wild Martens as above described, and it is this: take care in approaching the haunt, to do so from another direction than that from which the animal is likely to come, and avoid giving it your wind. If you doubt its olfactory powers, just walk across the line which it will take, before going into your ambush, and note the instant change that will come over its movements when its nose warns it of the recent presence of its worst enemy.

And now to revert for a minute to the tracks in the snow. I found, from actual measurements, that the average "stride" of a Marten, when going at an ordinary canter, is about three feet; when the pace is increased, or especially when bounding *up* a steep brae, five or six feet are comfortably covered; while occasional jumps of up to ten feet are not unusual. No stride longer than that was measured; but with no snow to impede its progress, I am quite prepared to believe that the animal may sometimes exceed it. One, which a very stormy December morning, with heavy snow, had no doubt tempted to make an injudicious bivouac on the broken bank of a stream down in the valley, and which was hunted thence by a couple of collies, and a terrier, easily outdistanced its pursuers up the steep hillside (it was *very* steep, and uneven going), and averaged about seven feet at

each stride. When it reached the rocks above (where two barrels were fired at it, I believe, and hope, without effect), individual jumps of greater extent were made, up what was evidently a well-known road, but at the time covered with snow ; but as they were inaccessible to human foot, they could not be measured. That Marten apparently went to ground in a cleft in the rock, far up above us, and well out of reach of even the intrepid Jones, who would fain have followed it. Soon afterwards, the said Jones appeased himself by shooting a very mangy Fox, and strode off, later in the day, with it slung from his gun, over his shoulder, on a long tramp to Dinas Mawddwy, where, by custom, every Fox killed in the parish has to be hung up for so many days, to entitle its slayer to the seven-and-sixpenny reward paid for its destruction. Mangy Foxes were rather numerous at the time of which I write, and by the local hunters they were believed to be "imported animals, which had come to the mountains, from distant hunting counties, to cure themselves of the malady," there being a local belief that mange never long survives the Merionethshire hill air. However that may be, the individual referred to above had recently had a very bad attack, but had completely recovered. Half his body, and the whole of his brush, had been entirely bared of hair ; but the skin was now quite healthy, and covered with a thick growth of nice young fur, looking like velvet pile, and he was, I think, the fattest Fox I remember to have seen killed. Whether the mange survives long or not, the Fox that carries it here will certainly not do so, unless he has all his wits about him. With the first fall of snow, hunters who rather prefer a cold scent will be on his track, and the result of "breaking boldly," when unkennelled, will certainly be that he will be bowled over like a rabbit, and "treed," *sans cérémonie*, at Dinas, for the following Sunday.

The shyness of the Marten, and the persecution it has endured, prompts it now to do most of its foraging under cover of darkness ; but it is not, by nature, more exclusively nocturnal than some of its congeners, and, especially during the season of short summer nights, and when there are

young to provide for, it may sometimes be met with, abroad, during daylight. Its first impulse, on becoming aware of human presence, is to get out of sight; and it was that, probably, as much as anything, that had induced one to take refuge in the hay-loft, over one of the cow-houses, that stand away out on the hillside on so many of the farms. The entrance had been effected through a slit in the wall, level with the ground at the back, owing to the house having been built into the hill, and when found, the Marten was thought to have been asleep amongst the hay. Attacked by a dog, encouraged by the farmer's lad, it showed so much activity, however, in jumping from hay to rafters, and from one of these to another, anon disappearing beneath the hay, that it quite baffled the dog and eventually evaded the man who guarded the entrance, and escaped into the neighbouring dingle, and thence to the hill.

One afternoon, when I had been botanising, near the top of Aran Mawddwy, and had sat down amongst the rocks, above Craig-Llyn-Dyfi, I noticed a disturbance amongst some rooks that were caterpillar-hunting on a grassy slope far away down below, and presently saw what, at first sight, I supposed to be a dark-coloured collie hunting about near them. To my delight, however, the binoculars showed it to be a Marten, and for the next half hour, or longer, I had it almost continually under view. At first it was hunting up a rushy syke, evidently on the lookout for voles, which were numerous thereabouts. It crossed the ground where the rooks were feeding, slowly, but apparently paid little attention to them, nor did they attempt to mob it, as I should have expected them to do. One or two made a half-hearted feint to do so, but for the most part they simply flew out of its way and went on with their grub-hunting. Occasionally one mounted a rock, and scolded the intruder from that vantage point. Some sheep scattered in affright as the Marten passed them, but it took no more notice of them than of the rooks. It dodged out and in amongst the peat hags, and broken ground, near the lake, for some time, resting on the top of a bank, some two or three hundred yards from me, for several minutes, and then

slowly continued its way along the rough ground at the foot of the rocks, still, evidently, on the lookout for voles.

I had hoped that it was coming up into the cliff somewhere near me, but it passed on. Tradition, indeed, avers that neither beast nor bird frequent these rocks, and that there are no fish in the Llyn ; and though neither statement is quite accurate, there is undoubtedly a strange want of life round this bleak hilltop. I have seen a Teal or two on the lake, in autumn (they do not breed there), and what were apparently some small trout rising in it, but I could never rise a fish myself, nor induce one to take any other bait. Buzzards, and Ravens, may be seen passing, but I saw no nest near the lake, not even a Ring Ouzel's.

The tradition says that the waters of the Llyn are "poisoned with sulphur," so that no life can exist in it, and that the fumes issuing from it keep the cliff inviolate above. According to the most romantic version of the tale, a giant had his abode "a long time ago" in a cave in the precipice overlooking the lake, the entrance to which can still be seen like a black doorway on the face of the rock. Here he dwelt, the terror of the neighbourhood, enjoying perennial youth, and invulnerability from mortal weapons, so long as he bathed each Midsummer morning in the waters of the lake, and brought no captive alive to the cave. Of course it was the old, old story ; the giant became enamoured of a beautiful princess, who lived in a castle at Llan-y-Mawddwy, and carried her off to his cave, defying the spirit of Craig-Llyn-Dyfi, from whom he had his power. As a consequence, he was hurled into the lake and drowned, along with the brother of the princess, who had climbed to the cave by a magic ladder, to attempt her rescue, and ever since the waters have been charged with sulphur. Connected with the death of the giant there was a great flood, the waters of the stream running white for many hours ; and where it issues through a rocky gorge, above Llan-y-Mawddwy, it is still known by the name of Llaeth-y-nant, or "the brook of milk." White marks on the rock, too, are pointed out as indicating the height to which the water (or milk) rose, and it is said that anyone bold enough to

The Giant of Craig-Llyn-Dyfi 345

spend Midsummer Eve amongst such solitudes may still hear the *Tylwyth Teg*, or "Little People," playing a dirge, at dawn, amongst the rocks surrounding the lake. The Raven, that nests on the cliff above Llan-y-Mawddwy, is the *Brudiwr*, or evil spirit, that guards the entrance to the vale, and a natural recess in the rock below is pointed to as "the Giant's chair."

There are, of course, unsympathetic people about, who affect to disbelieve the tale, and who hold that the Llyn is not fishless. They are prone to ascribe all such phenomena to natural causes; and they maintain that the milk stains on the rocks are but bands of quartz, and the elfin music but the breath of morning whispering round the jutting corners of the cliff; but with none such would we now seek to claim acquaintance. The world is already humdrum enough; and if any sentiment is to remain in our lives, where should it come more fittingly out than in the solitude of the mountain?

One fine summer morning, when I was sitting concealed in a partly wooded ravine, waiting for a Buzzard to return to her nest, another Marten gave me a beautiful view of it, for ten minutes or so. There was a high cliff opposite, with plenty of wide heathery ledges, from some of which sprang gnarled and stunted oaks, and mountain ashes; in fact, just such a place as a Buzzard loves. Both birds had been sailing around for some time, when the female pitched on a point of rock, two or three hundred yards away. I was in the act of focussing the glasses upon her, when a Marten raised itself from the heather, on an adjoining ledge, and sat looking at the bird, for some minutes, at a distance of not more than five or six yards. Maybe it had young ones there; but, at any rate, it seemed to resent the intrusion, for presently it leaped to a higher ledge, and approached the bird from above, creeping to within a few feet of it. Here it stood for quite a time, silhouetted against the sky, beast and bird regarding one another with proper caution, till at length the Buzzard, not seeming to like such close scrutiny, launched herself into the air, and soared aloft again, while the Marten leisurely returned to its ledge.

Another Marten once gave me an exhibition of his powers of locomotion by cantering, with easy, swinging strides, not unlike a hare, for half a mile, or more, in a straight line, up the ridge of a high hill. Probably he had been disturbed somewhere further down, and was making for a place of greater security; for during the whole distance he never once paused to look behind him.

CHAPTER XLI

Nests of birds of prey—Sparrow-Hawk's nest—Nest-building instincts—Hawks not deserting nests—Moving a nest—As bright as a Hawk's eye—Method in its madness—Repairing damaged feathers—Mesmeric power of animals—Powers of Vision—Birds recognising different kinds of Hawks.

BIRDS of prey are not, as a rule, given much credit for their efforts in nidification, and, generally, they do not deserve it; but there is one notable exception that must be made to such a rule, and that is in regard to one of the most common of them all, in this country, viz. the Sparrow-Hawk. Few people who are at all familiar with our birds, or have done much birdsnesting, have not, at some time, seen a nest of this species—probably they may, more than once, have assisted to rob one,—but how few have really paid any attention to it is evident from the discussions, which from time to time take place, on the subject of whether the Sparrow-Hawk builds a nest of its own, or takes possession of that of some other bird. When, owing to the destruction of a first nest, or from some similar accidental cause, time is pressing, a Sparrow-Hawk may, occasionally, appropriate another nest to her use, and with, or without, addition to it, lay her eggs thereon; but such cases must, at any rate, be of rare occurrence. Personally, the writer has never seen anything of the kind, every nest he has examined (and these must have run up to certainly not less than a hundred) having been unmistakably of the hawk's own making, and only once or twice has he seen a previous year's nest resorted to. That the nests are not the flimsy and slovenly collections of sticks which they appear, is evident from the manner in which they persist in trees, sometimes for several years after they have been constructed, as well as by the way in which, when kicked from a tree, they will fall, *en masse*, to the ground. A still

better idea of their solidity may be gained by watching one in course of construction.

In walking up Aran, by way of Plas-in-Cwm-Cynllwyd, on 27th May, I noticed a female Sparrow-Hawk carrying a stick in her bill, and followed her to her nest. This she was building in the hedge at the bottom of a wooded gully, and advancing cautiously inside the wood, under cover of a thick undergrowth of hazel, I was able to approach her very closely, unobserved, and to watch her at work. The nest was as yet scarcely more than begun, and was in a birch forming part of the hedge; the skeleton, so to speak, of a large nest, nearly as big as a small clothes-basket, more than a foot in depth, and most carefully put together. Sitting within the nest, the bird was almost hidden from view, save where the sides of the basketwork were not yet too closely woven and could be seen through. I watched her for some time intertwisting the twigs, and, after she had left it, greatly admired the neatness of her work. This, of course, was only the foundation for the large collection of sticks upon which the eggs were ultimately destined to be laid; but how admirably it served its purpose of holding the whole together, in a way that would have been impossible of attainment without something of the kind, was a subject worthy of particular study. Every branch used in the construction of this outside basketwork was of birch, and chiefly such as was either alive, or had not been long enough parted from its parent tree to lose its pliability. When I visited the place again, a few days later, the inside cavity had been all filled up with branches, many of them of much larger dimensions than those at first made use of, and the structure had lost its neatness; in the slight depression that remained on the nearly flat platform of small twigs lay two eggs.

The lining of small twigs is never neglected; usually these are of birch, or larch, but may be varied according to circumstances. In any case, they are the most slender branches that are to be obtained in the vicinity of the nest, and only a cursory examination is needed to show that they are not carelessly dropped upon its surface. Most of them

are interlaced with one another, and with the larger branches, till a compactness has been imparted to the whole that will withstand the wear and tear of the season, or that will, as just stated, suffer comparatively little harm from the rough tumbling of the structure from its tree. Yet this is the nest that is apt to be regarded, on a superficial examination, as only a pile of sticks, in almost chaotic disposal, and which it is sometimes possible to find people who profess to doubt its being the unaided work of its owner! With quite as much reason might we expect the Thrush, or the tree-building Wasp, to forego the manufacture of their papier-mache-like habitations, or the Martin, or the Nuthatch, to disregard the use of clay, as to find the Sparrow-Hawk departing from her equally long inherited instincts of nest-building.

Wild bird though she is, a Sparrow-Hawk is not readily driven to forsake her nest, once the eggs have been laid. Like most other birds of prey, she seldom lays again if one clutch is taken, and seems to recognise that her whole season's work depends upon the one venture. I have frequently seen the same bird fired at, and missed, as she left her eggs, on different days, and yet return and run the same risks over again: the keeper's perseverance being sure, ultimately, to make up for his poor marksmanship. One nest, in the Graig, was harried by some boys after the eggs had been sat on for about a week, and before the keeper had had an opportunity of shooting the owner. Seven days later he shot the hen from another nest, in a different part of the estate, and, from curiosity, took the eggs from it and placed them in the empty Graig nest, on his way home. A day or two later the hawk, who had lost her own eggs, had taken possession of those placed in her nest, and was brooding them closely, and was in due time shot from them. I saw the whole thing done myself, so can vouch for the accuracy of every detail.

Frequently the poor victims, when sitting, refuse to be driven from their nests without a good deal of hand-clapping, or kicking at the bottom of the tree, and more than once I have seen one allow a man to climb the tree almost within touching distance of her before doing so. The photo-

graph reproduced below shows a nest in Craig-y-tan birch-wood, with the position to which the climber had attained before this bird left her eggs, and was shot by a man below. By a strange anomaly of sentiment, many keepers regard it as cruel to shoot the bird *on* her nest, and will hardly be persuaded to do so, though they have no compunction in killing her as she flies from it.

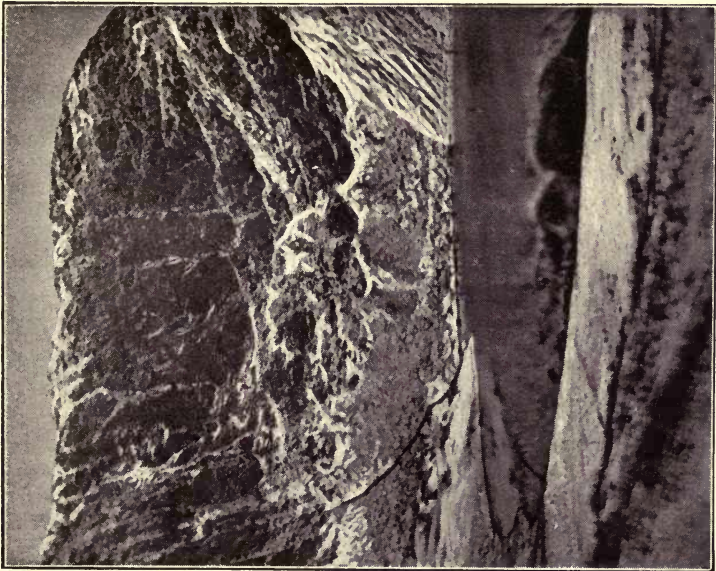
There was a nest on another man's beat which I saved from destruction by a very simple device, and from which the young eventually flew. This nest was in a low birch tree, close to a path, and so conspicuous that it could hardly have escaped otherwise. There was a large fragment of rock, however, only a few yards away, whose top stood nearly as high as the nest, and which was covered with a thick growth of heather. After the hen had begun to sit, I lifted the nest bodily out of the tree, and transferred it to the rock, and, concealed from view amongst the heather, its presence there was never suspected. So far from being alarmed at the liberty thus taken with her home, the hen fell in with the arrangement nicely; and several times, when I passed, by climbing a tree a short way above, I was able to see her sitting on the nest. Some of the young were subsequently photographed as "branchers."

Of all the Sparrow-Hawks' nests which I have seen, however, I never knew one to be built otherwise than in a tree, and am inclined to think that, where the contrary has been asserted, a mistake in the identification of the bird must have been made. Only once do I recollect seeing a nest that was not in a wood—meaning thereby any collection of trees, for, upon occasion, quite a small spinny will suffice,—and that was in a birch forming one of a straggling fringe to a mountain stream, in a Merionethshire valley, and not very far away from other trees that were thinly scattered over the slope.

All hawks are known here as *Hebog*, *Gwalch*, or *Cudyll*; the latter, sometimes written *Curyll*, is the usual name applied to the Sparrow-Hawk, though not infrequently it is distinguished as *Corwalch*. "As bright as a hawk's eye," is a local proverb, which the eye of a Sparrow-Hawk amply



SPARROW HAWK'S NEST.



LAVA AND SLATE ROCKS (IN SNOW).

justifies, whether or not it first suggested the comparison, and recalls the lowland Scotch saying, which, speaking of a wideawake man, declares that, "like a gleg-eed hawk, he'll niver gang a-gley."

In a general way, a wild Sparrow-Hawk seems to prefer taking her prey by semi-stealth, gliding up to it with the swiftness of an arrow, and sweeping it from its perch almost before her presence has been suspected. In captivity, however, it is readily trained to take small birds upon the wing, and every now and again a similar flight, in a state of nature, may be witnessed. Near Borth, I saw one follow a Swallow high into the air, turning and twisting with it, like a greyhound in close pursuit of a hare; and though victory ultimately rested with the Swallow, it was to dexterity in shifting, not to speed, that it owed its life. The chase lasted several minutes. On other occasions I have seen a Swallow captured. One day, near Llanuwchllyn, a pair of Partridges, put up on a hillside, were instantly followed by a female Sparrow-Hawk, that suddenly shot past a keeper and myself. All three were very quickly hidden from view by an inequality of the ground; but walking along the side of a wall, in the direction in which the chase had led, we soon came up with the hawk seated upon, and engaged in plucking her prey. Luckily for her, the keepers do not usually carry guns there, and the hawk escaped, but we robbed her of her prey, though not until she had made a resolute attempt to carry it off, despite its weight.

Frequently a Sparrow-Hawk will follow its victim into the thickest cover, dashing even into a hedge, with an impetuosity that would seem to threaten serious damage to plumage, if not actually to limb, or life; yet there would generally appear to be some method in its madness, for it is rarely that so much as a feather suffers. Should a flight feather be broken, however, it is usually cast soon afterwards, irrespective of season; for, although it is difficult to suppose that a bird is able to exercise any direct control over the mysteries of its moult, the result of serious damage to an important feather is generally to excite into activity those latent forces which induce the growth of a new one to take

its place. The injured feather "withers" and falls, being, perhaps, pushed from its socket by the new one rising to replace it; but the energy of renewal, thus roused, goes no further than to make good the loss, and, that accomplished, becomes dormant again until the proper season of moult comes round.¹ The fact is beyond dispute, but I am not aware of any probable explanation having been suggested to account for it; though it may be that the bird hastens the fall of the feather by continually tugging at it (she could hardly, if she would, pull out a healthy quill) and that Nature steps in to fill up the vacuum. When a tame hawk's feathers, having been damaged, are artificially repaired, the same course would not seem to be followed. The falconer makes good the loss of flying power by imping them, and it is said that they are not then cast before their ordinary time; yet it can scarcely be seriously supposed that the bird is deceived by the splicing, or that Nature should take cognisance of any such artificial means of supplanting her aid. It were easy enough to put the matter into syllogistic form; but though the conclusion arrived at might be the same, the premises stated by any two persons would almost assuredly be widely different, and readers must, therefore, be left to formulate their own argument, and supply the best solution to it that they can.

There is another mystery which the actions of a Sparrow-Hawk often bring prominently to our notice, and that is the mesmeric power which the would-be captor seems sometimes to be capable of exercising over its intended victim. Time and again I have seen a party of Sparrows, or other small birds, flee to the nearest shelter, with the cries that signify "'ware hawk," and are so well understood by all birds, irrespective of the species that gives them utterance. More

¹ In connection with this occasional renewal of feathers, it may be useful to recall the fact that the Japanese—more subtle than Europeans in their attention to minutiae in regard to both plants and animals—by some method at present unknown to us, are able, by checking the moult in their domestic poultry, to induce a sort of continuous growth in the feathers of the tail, and adjacent parts of the body, resulting in the abnormally long-tailed cocks sometimes seen at exhibitions in this country, or in museums,—the tail feathers in which may be eight or ten feet in length, and the "hackles" on the rump proportionately elongated.

often than not, this warning has been my first intimation of the approach of their enemy ; and it is attended to, instantly, by all the company, save, perhaps, one wretched bird, that seems glued to its perch by fear, and remains behind to fall an easy prey. That it is well aware of the meaning of the warning, and of the rapidly approaching shadow, is quite evident from its attitude, yet it seems unable to exert a muscle to follow its companions into safety. There may be one weak flutter before it is actually clutched, and a feeble note of despair is often uttered, but no serious attempt at escape is made, and the end is a foregone conclusion, so far as the victim is concerned, unless some external influence breaks the spell under which it is held. Frighten it, however, or turn the hawk but momentarily from its course, and it will make as good a shift as the rest for its life, its only difficulty appearing to lie in the inability to start into action. Why is this ? It can hardly be that the victim is foredoomed to destruction, since, once on the wing, it evinces no more fear than its neighbours, and will lead the hawk as long a chase ; and it is difficult to believe that, at the distance from which the attack often begins, the hawk's eye has singled it out from the flock, and is able to communicate the information through the intervening space. That the vision of many of the lower animals differs greatly from our own, in the power to concentrate, and even to distinguish certain objects invisible to us, cannot for a moment be doubted ; but yet we experience a difficulty in imagining that eye can meet eye, maybe fifty or a hundred yards away, and be fascinated by the gaze to the exclusion of all other considerations. Something of the same power is exercised by the cat over a mouse which she is watching, or by the snake over its intended prey, and it is akin to the fear which paralyses the hare, or rabbit, when pursued by a stoat, but it is exceedingly difficult of comprehension. I have seen a Hare followed by a Stoat, and unable to exert itself beyond a mere half-hearted canter, suddenly throw off its lethargy, and flee from a dog that intervened, as if it had been freshly started from its seat. So well did it then bring its powers to run, and

double and turn, into play that it ultimately threw out its far more speedy pursuer, and escaped with a life that ten minutes before had been forfeited, and which it would certainly have yielded up with less than half the effort. The snake might often enough be compelled to go without a meal, if its sole ability to catch one depended upon its stealth, or activity of movement, and it is possible to understand the reasons for which it might have been endowed with facilities for the capture of food, not enjoyed by other animals ; but assuredly neither the hawk, nor the cat, nor the stoat, is in need of any such extraneous advantages. But it is not with the reasons of their bestowal, but with the nature of the gifts, and the manner of their operation, that we are now concerned, and of these we are as yet almost completely in the dark.

Of the manner in which birds will differentiate between different kinds of hawks, and suit their actions to the means best calculated to avoid them, almost everyone who has lived much in the country, must at some time or other have had ample ocular evidence. A very pretty demonstration of it came under my notice one October afternoon at Llanuwchllyn. I was sitting beneath a tree at the corner of Traws-coed, a plantation away out on the Arenig moors, watching two Buzzards soaring above it, when a lot of Red-wings, and Fieldfares, began pitching into the trees from a great height overhead. I have little doubt that they were just arriving from migration ; but, be that as it may, the tree-tops all around me were soon crowded with a twittering assembly, that paid very little heed to my presence, and took no notice whatever of the Buzzards circling above them. Probably they were accustomed to regard man as a harmless animal, in the land from which they had come—or they might never even have seen a specimen of him before, and have looked upon this one as some strange and uninteresting creature—but quite evidently they understood, perfectly, the ways of the harmless Buzzard. As evidently, too, they knew the difference between it and a Sparrow-Hawk ; for a mere glimpse of one of the latter birds, flashing through the trees, was sufficient to alarm the

whole flock, and send them back into the air, with much chattering, and clamour, to seek somewhere else a safer bivouac for the night.

A flock of Plovers, feeding on a field, will, also, sometimes allow a Kestrel to pass over them unheeded; but let a Sparrow-Hawk glide down one of the fences, just showing herself for a moment, and the whole flock is instantly upon the wing. The hawk is as well aware as we are of the alarm her presence will cause, and is at considerable pains to steal upon the birds from the least exposed part of the field. If she succeeds in gaining the fence unobserved, she will frequently alight to reconnoitre, before attempting a final dash, and will sometimes remain there, awaiting her opportunity, for quite a long time. When the psychological moment arrives, the attack is delivered almost with the swiftness of an arrow, and how often with success is testified by the numerous remains of Peewits left where the victims have been carried to some convenient shelter to be eaten. Where much harassed by a Hawk, Plovers become extremely restless, and the rising of one party is sufficient to send every flock, within half a mile's radius, wheeling into the air.

CHAPTER XLII

Hawks catching beetles—Nightjars—Other soft-winged children of the night—Stage whispers—Superstitions—Notes of the Nightjar—Its flight—Distribution of pollen—Study of a feather—A wonder of Nature.

DURING the afternoon of the same day on which the Sparrow-Hawk was seen building the nest referred to in the last chapter, I had an opportunity of examining some castings of a Kestrel, beneath a roosting place in an old slate-working near the top of Aran Benllyn, and was able to identify in these some of the elytra of the Bloody-nosed Beetle (*Timarcha lævigata*), a common insect here, but one which is sometimes thought to be distasteful, if not actually noxious, to birds. On my way back in the evening, I watched a female Kestrel for some time, at the back of Garth-bach, hawking insects upon the wing, above the trees. What these were could not be ascertained with certainty, in the dim light; but both moths, and cockchafers, were on the wing at the time, and I strongly suspected that it was chiefly, if not altogether, the latter that she was catching. Several times the bird passed close enough over me to enable the talons to be distinctly seen, as they were thrust out to grasp the prey, and from these it was transferred to the mouth, and eaten upon the wing. This Kestrel continued actively upon the feed until far into the gloaming, and considerably after Bats, and Nightjars, had begun to fly; and more than once I had both birds in view at the same time, each engaged in the like pursuit.

A pair of Nightjars nested amongst the ferns well up towards the top of Garth-bach hill, and away from trees; and many a night have I sat there listening to their soft churring, and admiring their graceful evolutions in the air. Other Nightjars were frequently disturbed by day, upon

the moors in other places ; but nowhere are they more abundant than on the hazel-covered hillsides, down towards Drws-y-nant, and Dolgelly. There, towards the close of a summer evening, when the shadows, lengthening across your path, begin to blur the outlines of near things, and only the contour of the mountain, behind which the sun went down an hour ago, stands sharply out, you may always count upon seeing Goatsuckers flitting noiselessly past, or wheeling, swallow-like, round the trees overhead, in pursuit of those other soft-winged children of the night, the silvery moths. The gloaming has quickened each into activity, and scarcely are the goings and comings of the one more uncertain, and ghost-like, than the other. The eerie purring, too, which is the male bird's serenade of his mistress, is a sound peculiarly in keeping with the scene, and with the hour. Though never loud, it has the penetrating power of a stage whisper, and vibrates through the trees till distance becomes an altogether uncertain quantity. One moment it is pulsating in the ear, in a manner strangely suggestive of a disturbance of sound waves ; the next, as the bird turns his head, it becomes softened to a mere echo of its former volume. Perhaps, while you pause undecided as to whether you are listening to one or more performers, the song comes suddenly to an end, and the mystery of the numbers of the orchestra is still further heightened by a succession of whip-thong-like notes emitted as the bird, or birds, flit by unseen, and on such silent wing, that it is from their vocal efforts only that their presence can be recognised. Need we wonder that in an age, and amongst a people prone to superstitions, such a creature should have come to be regarded as uncanny ?

“ Neither substance quite nor shadow,
Haunting lonely moor and meadow.”¹

Here, the Nightjar is called *Deryn corff*, or “corpse bird,” and hardly a death occurs in the village but someone will tell you that he “heard a strange bird last night, and knew some spirit was passing into the unknown world.” It is,

¹ Scott's *Monastery*.

also, one of the birds known as *Troellwr*, or *Nyddwr*, the former being a man who spins, the latter a woman ; but these names are often shared by other birds, such as the Snipe and the Grasshopper Warbler ; and as the Deryn corff appears in summer and winter alike, and is sometimes heard to "shriek at night," the application of that name is, also, somewhat vague, and uncertain.

The manner in which the whip-thong notes of the Nightjar, above referred to, are produced, has frequently been the cause of dissension amongst naturalists, by some of whom it has been likened to a squeak, by others to the noise produced when a whip is swung rapidly round the head. It has generally been thought that it is made use of only when the bird is upon the wing, and to be confined exclusively to the male. To the writer, the sound appears to be a shrill whistling note, comparable to the ordinary call of the quail ; and that it is not produced by the wing, he has convinced himself by having, more than once, had the bird in view, perched before him, when the note was uttered. From close observation, he is also almost certain that the note is common to either sex. He has certainly heard it made use of by two birds at the same time, where a pair were wheeling round their nesting quarters ; and when, though in the twilight it was not possible to be absolutely certain of the fact, he felt convinced that no second male was present. He has, moreover, heard the note, which is commonly dissyllabic, prolonged so as to give a very fair representation of "whip-poor-will,"—a poetical name, which, from its call, one of the American Nightjars (*Antrostomus vociferus*), has had bestowed upon it.

Another familiar sound made by the Nightjar is a loud clap, produced by the wings being brought sharply together above the back, in pigeon fashion. It is generally heard when a pair of the birds are toying together in the evening, and seems to be most commonly made by the male. After producing it, the bird will frequently glide for a yard or two, on uplifted, and, apparently, motionless pinions, and probably repeat the clap, as it alters its course, and veers sharply round. The whip-thong note, also, is frequently

heard during this proceeding. Tawny and Long-eared Owls clap their wings in a very similar manner, of which the writer has often had both ocular and aural demonstration, and the habit is not confined to these birds only.

The flight of a Nightjar is, at all times, a study of airy buoyancy, the reason of which is at once apparent on handling the bird, the bulk and weight of the body being insignificant in comparison with the stretch and power of the wings and tail. This, together with the large head, causes the centre of gravity to be thrown what appears to be disproportionately forward, when the bird is at rest. It is probably the weak grasping power of the feet, in conjunction with the great development of tail and wings, that causes the bird to prefer sitting lengthwise, on a branch, not across it, as most birds do. This longitudinal position is, however, sometimes departed from. I have seen two birds alight, together, upon the top of a rail, one of which remained sitting across it; and one may frequently be seen to settle crosswise upon its perch, and more or less leisurely assume the longitudinal posture. At night it has often been my good fortune to be within a few paces of a Nightjar, sitting athwart the small branches of a dead thorn which rose a few feet above the level of the rest of the fence, and was always a favourite perch for these birds. The slimness of the twigs, here, made it incumbent that they should be grasped in the ordinary manner, and the birds were never noticed to experience any difficulty in doing so. The attitude assumed, in such circumstances, is rather upright than horizontal, with the tail depressed, more resembling that of a kestrel than a cuckoo. Sitting here, a Nightjar has often purred very close to me, and has also uttered those whip-thong notes already referred to.

When hawking close over a moor, a Nightjar may sometimes be noticed to pick a moth off the heather, or take it as it hovers round a flower; but its more favourite practice is to strike the herbage with its wings, pausing momentarily in its flight to do so, and to capture the insect, when disturbed, it is making off. The taking of the swift-flying *Noctuæ*, in this manner, cannot be a simple matter, but time

and again I have watched Geometers so taken. Frequently the bird will alight for a second on the ground, as though it might sometimes capture prey there. As a result of this constant heather flicking, the primary wing feathers are often quite abraded, or roughened, on their inner webs, towards the tips; and a bird shot, when so engaged, was found to have a quantity of pollen adhering to the downy part of the feathers. To dilate from this upon the subject of the distribution of pollen grains, were easy, and might, perhaps, not lead in a less profitable direction than some other theories, which have started from observations apparently quite as fantastical, to be accepted later as solid facts; but it is only to the plumage of the Nightjar that it is now desired to direct attention, and anyone who has the opportunity of examining that will find himself more deeply interested the further he pursues his investigations. It is not in their colouring only that the feathers arrest the attention—though the delicate pencilling of many of them it would be difficult to exaggerate,—but looked at more closely, they will disclose an arrangement of the downy parts, that is at least as wonderful as anything to be seen in a summer day's journey. The down upon some of the more "fluffy" moths—such, for instance, as some of the "Prominents"—is sufficiently complex to excite our admiration, but it is certainly not more marvellously intricate in its arrangement than are the delicate cilia on the feathers of a Nightjar. To enter into any detailed account of these would be too technical for a work like the present; but taking one of the primary quills, it will at once be noticed that, while on all that portion of the upper part of the feather which is liable to exposure when the wing is fully expanded, the surface of the *rami*, or barbs, is comparatively smooth, on the remaining portion of the inner web it is as "downy" as a piece of the finest velvet-pile. Perhaps a better likeness would be to the silky hairs on the back of a very young animal, such as a mouse, or even to an insect; for the long filaments of "down" are seen to overlie the heads of the *rami*, all pointing in one direction—obliquely towards the base of the feather,—and completely covering



NIGHTJAR.



WILLOW WREN BUILDING NEST.

the junction of the rami and their attendant barbules ; so beautiful in their arrangement, that, once ruffled, it would seem a hopeless task ever to readjust them. How the bird manages to maintain such delicate feathers in their perfection is, indeed, one of the wonders of Nature. Constant use does, of course, wear them away, and necessitate their periodic renewal ; but one rough touch of the finger is, apparently, sufficient to do more harm than a whole season's wear and tear, with the feathers continually rubbing against one another ! The line of demarcation, between the downy and the smooth portions, is abrupt, extending almost straight down the feather, and is so distinct as to look like a difference in colour, and almost to be perceptible to the touch. Most of the larger contour feathers are similarly marked, each bearing, as it were, the impress of its fellow upon that portion of its web which is usually covered by it, but with the difference that in some of these the down points in the opposite direction, viz. towards the tip of the feather. Enough has, however, I hope, been said to point out to the young naturalist that a feather ought for him to be something more than a mere thing of beauty. Some of those of an owl are exquisite in their downiness ; but in the features just alluded to, none of them can surpass a quill feather from the Goatsucker.

CHAPTER XLIII

Green Woodpeckers—Ants—Parasitic Worms—Hewholes—Retroggression—Wild Cherries—Turn of the leaf—Plumage of Woodpeckers—Tongue of—Stock Doves—Falcon and Pigeon—A stern chase—Problems of Nature—Ignorance of suffering—Homer Pigeons—The risks of a race—Stock Dove's nests—And names—Value of Fir trees—Planting for game or timber—Lessons in nidification—Buarthmeini—St Tudor—Lizards and Snakes.

August 14th.—In walking over the hills to-day, to Trawsfynydd, I met with Green Woodpeckers in several places, in the clumps of birch, alder, and stunted oaks, which so beautifully fringe the slopes of many of the upland glens, weeping over the stream at their foot, or draping, with softer verdure their rugged gorges. This is *the* woodpecker of the district, the *Coblyn-y-coed*, or “goblin of the wood,” of residents,¹ so named from its laughing call in spring. It is somewhat local in distribution, but on the whole rather common here. Its habit of often wandering away from trees, to feed upon ants, and other ground insects, in open places, or on hedge-banks, is well known. At this season of the year, when it is specially addicted to roaming afield, if indeed the young do not partially migrate, I used frequently to meet with it, singly, in pairs, or in family parties, on the hills at the very confines of tree growth. Sometimes one would rise unexpectedly from the heather almost at my feet, and with harsh cry, as it flew undulating back to the wood, give warning to a companion who might be feeding fifty yards further on; or, again, they might be disturbed from amongst the moss-grown rocks, on some bare hillside, right away from the trees. In either case, an examination of the ground would generally disclose a raided ant-hill as the object of attraction; and the stomach of one shot in such a situation was found

¹ Other names are *Cnocell-y-coed*, *Tyllwr-y-coed*, and *Tarad-y-coed*, all referring to its wood-boring propensities, and *Caseg-y-ddrycin*, equivalent to “Rain-bird.”

to be filled with the large brown *Formica rufa*, which abounds here in some places, and which, for some obscure reason, is often called "the horse ant." The fæces, also, showed a quantity of the hard shells of the ants, which had passed the gizzard uncomminuted. The inner coating of the stomach, and gizzard, of this specimen, were of a fine pale green, resembling in colour the lighter parts of the plumage. It was an adult male. At the lower joint of the tibia, in each leg, between the tendons but quite unconnected with them, there was a small bladder, filled with an oily transparent fluid, and each containing about a dozen small worms. These were rolled together into a close ball, and of a pale, yellowish-green colour, about three-quarters of an inch long, cylindrical, and tapering to a point at either extremity. When dissecting the bird, the day after its death, I thought at first that the little sacs might be oil-glands for the lubrication of the joints; but when they were cut open, the worms were quite lively and writhed about the paper on which they were turned loose; they did not, however, survive very long.

The stomach of another Woodpecker, examined some time later, contained only the remains of a large Goat Moth caterpillar; but a *bonne bouche* of this kind can rarely reward the labours of a "Hewhole,"¹ at least in these parts, for the only place in which I noticed their borings here was in some old oaks, near Dolhendre on the Lliw.

It is sometimes doubted whether a Woodpecker is able to bore a nesting hole into hard, sound wood; but in Merioneth I saw growing, and undecayed oak trees, bored in several places. In one case, where the nest had been sawn out by somebody, prior to my visit, the section showed the tunnel to have been driven through sound and solid timber all the way, but it did not penetrate quite so far as the heart of the tree,—an oak of perhaps a hundred years' old. The downward shaft did not measure more than about six inches from the elbow to the bottom of the hole, but the nesting chamber was excavated out to quite the usual size. Without seeing such a piece of work, it is

¹ A common synonym for woodpeckers in many parts.

difficult to believe it to be possible of accomplishment by a bird, whose only tool is its bill, and I have often marvelled at the perseverance which such labour indicates. More usually the holes are bored in softer wood, or through the skin of a tree whose interior is already more or less decayed.

Near the ruins of Tan-y-Castell, under Castell Carn Dochan, the old home of a celebrated bard, Robert Thomas Ap-Vychan, there was a Green Woodpecker's nest in the bole of a wild cherry tree, quite twenty feet from the ground, which was tenanted for two years in succession, to my knowledge, and it did not look like a particularly new hole when I first saw it. I repeatedly noticed the old bird approach this hole from a few feet above; the manner of descent being by a series of downward hops, tail first, in a slightly spiral direction. I particularly refer to this, as Selby's assertion, that the bird progressed in this way was rather doubted by the late Professor Newton.¹ In view of the support which such birds receive from the stiff tail feathers, it is probable that they could not, if they would, descend a tree in any other fashion. I have more than once seen a Great Spotted Woodpecker make a few similar downward hops, and it is quite a common method of progression with the Tree Creeper. The Nuthatch, on the other hand, receiving no support from its short square tail, hops, head foremost, down a tree with as much ease as it ascends, and, indeed, seems almost to prefer that position to an upright one. In the wood above Craig-y-tan, I one day saw a Green Woodpecker descend a rock backwards, some three feet or more, to recover something which had been detached from above and had fallen to the ground. It afterwards reascended the rock before flying off.

The Wild Cherry is quite a feature in many parts of the Dee valley, the trees, when smothered under their sheets of white blossom, in early May, lighting up the margins of the woods in a way that makes one wonder that they are not more extensively used in planting for effect. Repeatedly, I have heard passengers in the train exclaiming at the beauty

¹ See *Yarrell*, 4th ed., vol. ii. p. 458.

of the white trees, declaring that they had never seen the like before, and hazarding opinions as to what they might be. Nor does their summer glory greatly outshine the gorgeous tints of purple, and red—hardly equalled by any other tree—which the wild cherries' foliage assumes with the turn of the leaf. No finer contrast to the yellows, and browns, of birch, and elm, could well be desired at that season of enchanting woodland colours; and when, in addition to its other virtues, the fruit of the cherry is taken into account—a much appreciated banquet for feathered guests, if ignored by higher beings—the tree surely needs no further commendation.

A Scotchman named Grant, at that time living at Glan Rafon, in the Lliw valley, told me that, in 1904, he had shot a Green Woodpecker near his house, which had the feathers on the rump nearly as red as those on the crown, and he was a very observant man, and not likely to exaggerate, or to be mistaken. I did not see the bird, as, not knowing its rarity, he had not taken any means to preserve it; but his entire ignorance of the occasional occurrence of such varieties elsewhere, gives me greater confidence in accepting his statement. His nationality is specially mentioned, as in any details of this kind the memory of a native is always very hazy, and unreliable.

The plumage of the Green Woodpecker is a perfect study in the blending of greens and yellows, scarcely a shade of either colour being unrepresented in one part or other of the body. The red splash on the crown, with its accompanying black, facial bands, together with the barring of the flight feathers, and the clear white of the lustrous eye, supplying just those pleasing touches of contrast that are so fascinating, when a specimen is examined in our hand, without interfering with the effect of a harmonious whole, or rendering the bird unduly conspicuous amidst its natural surroundings. In the young, in their first plumage, the greens are mostly represented by greyish-olive, and the yellows by dull greenish-white, both thickly freckled with more or less arrow-shaped markings, so as to resemble the generally spotted immature dress of most of the passerine

birds. The feathers on the top of the head are streaked with crimson, and the dark bands either wanting or greatly dulled with grey and olive-brown; yet in this apparently subdued plumage the young bird, though also less in size than its parents, is certainly not less conspicuous on the wing as it dashes off through the trees. It is also less wary, or less prone to seek refuge in flight, and will sometimes allow of a near approach, whilst it dodges the intruder behind the trunk of a tree,—a proceeding which I have never observed in the adult bird.

The long, horny tongue, with its much-barbed tip, and its extraordinary capacity for protrusion, is also an object which will well repay the attention of any young naturalist handling a Woodpecker for the first time. The function of the barbs is not, apparently, that which a first sight might suggest. "An examination of the crop shows that the prey is not transfixed, as many people have supposed, by the horny tip of the tongue, but simply captured by the application of its slimy and adhesive surface, though probably the barbs assist in detaching the insects from their hold. . . . On each side of the head, behind and below the ear, is a large elongated parotid gland, whence a duct passes forward to the symphysis of the mandible, and just where the tip of the tongue habitually rests. Through this duct the glutinous secretion of the glands flows copiously, keeping the tip constantly moist, and thus fitted for securing the smaller insects on which the bird so much feeds, while it is freely supplied with mucus each time that it is retracted into the mouth."¹

Far out on the moor, near Blan Lliw, a single Stock Dove flew over me. Moderately frequent in the lower valleys, this bird does not often seem to trust itself amongst the mountains proper, though there was a nest on Arenig, above Cwmttylo, in 1906. Probably it is its fear of the Peregrine that acts as a deterrent to its spreading, for a pigeon on the moors is almost irresistible to a falcon. Round every eyrie of the Peregrine, which I visited in Wales, the remains of pigeons outnumbered those of all other prey,

¹ *Yarrell's British Birds*, 4th ed., vol. ii. p. 466.

usually in the proportion of four or five to one, and I witnessed the beginnings of more than one stern chase, and sometimes, also, its closing chapters. On one occasion, on the Ddwallt, when lying watching a Peregrine circling idly overhead, I saw her suddenly galvanised into action, and rushing like a thing bewitched in the direction of a distant form, which a moment later was seen to be a white-winged pigeon. The luckless quarry, probably some homer winging its weary way over the mountains, happened to be shaping a course nearly straight in my direction, and did not apparently perceive its enemy till she had attained a dangerous proximity, and was in fact all but preparing to stoop. With nothing but the shelterless moor beneath, and the shadow of death so close above him, the odds looked then a thousand to one against poor "White-Wings" ever seeing his dovecot more, but yet he put up a gallant fight for life. The only possibility of escape lay in sheer endurance, and strength of wing, and he was instantly fleeing at a pace sufficient to have outstripped most pursuers. No effort, however, could avail to stave off that tremendous stoop; and a few white feathers floating in the falcon's wake, as she shot headlong past, told how narrow had been the margin between life and death. Two more stoops were either less skilfully delivered, or more skilfully avoided, and in less time than it takes to write these words, pursuer and pursued had vanished round the shoulder of the hill, and the spectator was left musing on one of the unsolvable problems of nature that are ever before us. In the very prime of life and strength, and in the faithful discharge of the message entrusted to him, why must P. be suddenly annihilated in order to provide F. with a dinner? And that, too, with a wife and family, perhaps, depending upon him at home! It looks so unfair upon the face of it; but then, on the other hand, how otherwise is F. to earn his livelihood, or to provide for *his* family's wants? The sacrifice of life and matter continually going on around us may often strike us as almost wanton waste, but it is a decree of the Creator from which there is no escape. The very elements are perpetually at war with one another; and

in animated nature, from the lowliest atom up to even man himself, the weak must for ever be the lawful prey of the strong. Nature is ignorant of suffering, and "cruelty" and "pity" are terms which have been added to our vocabulary without her cognisance.

To change a train of unprofitable thought, I fell to wondering what chance there was of poor "White-Wings" receiving the credit he undoubtedly deserved, supposing he escaped the falcon and got safely home. How much more likely that he would be blamed for waste of time, and be, perhaps, weeded from the loft as a laggard unfit for racing purposes, and worthy only of figuring in the larder! Seriously, I wonder how many owners appreciate the risks their birds sometimes have to run in a race, besides accomplishing the mere length of the journey, and how often there may be a satisfactory explanation to a "bad time" made, if only they could read it? That a race, whose course happens to be intersected by a falcon's haunts, is no trifling matter, is vouched by the number of pigeons' legs, bearing rings, often to be found in or about an eyrie. There chance to be before me as I write two such rings, marked respectively "R.O., 1901, 421," and "N.U.O.3.R., 370," two out of many picked up at different times, round several eyries in this part of Wales. At one nest, down near Vyrnwy, there were the remains of half a dozen pigeons, one of them being a Stock Dove, one a Wood Pigeon, and the remaining four tame birds, each with a ring round a leg. The only other trace of victims at that nest was a recently killed Meadow Pipit,—a bird whose insignificant size, one might have supposed, should have placed it beneath the dignity of a Peregrine's notice. The reason why so large a proportion of the pigeons, which fall victims to falcons, are Homers, is that these are so frequently sent upon a journey that involves their crossing peregrine ground, while other tame varieties seldom wander in that direction. A contributory cause may be that, whereas Homers are often to be met with and captured near the nest, other pigeons, killed further afield, mean a longer journey with a heavy load, which, except under necessity, is dispensed

with, and the prey is devoured near the scene of capture. That a Peregrine Falcon is quite able to carry a much heavier weight than a pigeon, should occasion arise, is of course well known. Gray, in his *Birds of the West of Scotland*, refers to a Blackcock carried to the Bass Rock, from a probable distance of about three miles; and I have myself seen a *male* arrive at an eyrie bearing an adult and unplucked Grouse in his talons.

It has been supposed that the chief reason why a mountain range offers an obstacle so seldom surmounted by voyageur pigeons is that the birds are unable to find their way, by sight, over so elevated a tract. To some extent this may be true, but the danger of capture by predatory birds should at least be taken into account. In this country the number of birds of prey is comparatively small, yet we see how heavy is the toll they take. Elsewhere, the risk must be proportionately greater; and falcons, though undoubtedly the most dangerous, are by no means the only foes to be reckoned with. Large and heavy birds, like Eagles, move through the air at a much greater pace than their apparently slow wing-motion might suggest; and an Eagle in the sky would probably experience not much more difficulty in capturing a pigeon passing beneath him, than he does in taking the almost equally fast-flying grouse. I have seen a Wood-Pigeon in an Eagle's nest; nor are all other birds to be disregarded. A Rook has been seen to pursue and capture a Wood-Pigeon upon the wing, when the latter had become somewhat enfeebled through stress of hard weather, and when the former's appetite had, from the same cause, been more than usually whetted. It has never been my good fortune to see a Raven in pursuit of winged prey; but it is very well known that they do, at least occasionally, resort to that method of supplying their wants. And from what I have seen of their wing power, when driving a falcon, or a rival, from the neighbourhood of their nest, I have no hesitation in believing that a hungry Raven, intent upon a meal, and starting with all the advantages of position, would, to say the least of it, be a foe to be seriously reckoned with even by such an aerial expert as a homing

pigeon. If it be conceded that the attack were delivered upon a bird already somewhat wearied by a long journey, the odds would, of course, be still further increased in the Raven's favour.

But the always fascinating subject of falcons has led me quite astray from the Stock Dove. As already stated, it is not rare about Llanuwchllyn ; but like the majority of birds, it is never so common there in winter as during the summer months. I think the Stock Doves chiefly arrive early in March, and depart in October. Those which remain come greedily to the pheasant feeds, and they are much more frequently taken than Wood-Pigeons in the wire runs made for catching hen pheasants in the coverts. Although quite as shy of approach as their larger relatives, they always seem to be less suspicious of traps,—a peculiarity which I have noticed in other districts than that under consideration. Like its congeners, the Stock Dove is very fond of both beech mast and acorns, and in spring devours a considerable number of the expanding buds of chestnuts and other trees. As the quantity of buds plucked, and allowed to fall to the ground, seems always to be much in excess of those actually swallowed, the damage to the trees is proportionately large. A Stock Dove killed by the keeper near Glan Llyn, on 20th December, when there were a number coming in to roost, had its crop filled with haws, mingled with a few clover leaves. Most of the Wood-Pigeons killed about the same time had their crops likewise chiefly filled with haws, some of them, however, having more clover, and one or two a little grain.

In the south of England, the majority of Stock Doves seem to nest in hollow trees ; in the north, and in Scotland generally, the more favoured site is on a cliff ; on the face of a quarry (not always a disused one) ; or in a rabbit-hole on a more or less steep bank. Ivy-covered castle walls, or the ruins of old buildings, are also often resorted to ; while I have frequently seen nests upon the "wall-head," in such buildings as cattle-sheds, particularly where these were situated in little-frequented places, or on the borders of a wood. In these sort of situations there may sometimes be

a pair or two of strayed tame pigeons frequenting the same building as the Stock Doves, and in one case I found a nest belonging to either species, upon the same wall-head, and within a few feet of each other. From the social disposition thus displayed, it is easy to understand how the Stock Dove came to receive its common name, and to be regarded (erroneously of course) as the parent of our domestic pigeons¹; though some authors consider that the derivation is from the bird's fondness for building in the *stock* of a tree. In Wales, where rock nesting sites so greatly predominate over suitable trees, it might reasonably have been expected that the Stock Dove would most commonly resort to cliffs for breeding purposes; but in the neighbourhood of Llanuwchllyn at any rate, just the opposite is the case. A few nests may, of course, always be found in rocks, but in the majority of cases a hollow tree is chosen. Upon one occasion, I saw a nest in the ventilating slit in the wall of the hay-loft over a cow-house, which stood by itself in the middle of a field, and the young ones were annexed by a farm lad, who looked upon them as the produce of birds strayed from his father's loft. Two and often three broods are reared in the course of a year, the second clutch of eggs being frequently laid almost immediately the first young ones have left the nest. Sometimes they are deposited in the old nest, in other cases a new site is selected, often very near the first.

The Wood-Pigeon² is fairly, but not excessively numerous round Llanuwchllyn, and, unlike the last species, follows the growth of trees everywhere into the mountain glens. Its great partiality for the flat branches of Spruce, or Silver Firs, is also shown by its increase wherever these trees have been planted. No other tree has greater attractions than these for winged game of any kind, whether Pheasants, Woodcocks, or Pigeons; and the manner in which those have flourished, which have been planted in

¹ In Merioneth it is generally called simply *Colomen*, or pigeon, sometimes *Colomen ddof*, tame pigeon.

² *Colomen-y-coed*, wood pigeon, is the common name; but *Cuddan*, or *Ysguthan*, signifying a cooing bird, are also in use.

the district from fifty to a hundred years ago, affords an excellent illustration of the suitability of the soil of these parts to their requirements. Yet regardless of such evidence, here as elsewhere, Larches and Pines are being much more extensively used in the formation of young woods. Where the primary object of planting is the ultimate value of the timber, there may be no very valid objection to such a course (though it might well enough be argued that, even with that end in view, Oaks as the main crop would be more profitable, and Firs better nurses); but where game enters into the calculation, and where it can be shown that Spruce or Silver Firs do at least equally as well as other conifers, to pass them over can only be regarded as a poor policy arising from lack of observation. The Scotch Pine thrives so well under such a variety of conditions, that for planting, *qua* planting, nothing can be said against it; and on a rocky hill-side, affording security against stagnant moisture, Larch may be expected to do well enough, though in either case Spruce or Silver will often succeed as well; but where the situation of the desired plantation is on a flat, cold-bottomed, and often damp and peaty soil, there can be no doubt at all as to which trees would give the best results. Healthy Larch can scarcely be expected on such sites; and though Pines may, and probably will grow, they are not, when mature, of much greater commercial value than good Spruce or Silver, and a good Spruce is always preferable to a poor Larch, which ere its fifteenth birthday will probably be badly diseased, and, should it survive till twice that number of years has run, will be nothing but a misshapen cripple.

There are many plantations in North Wales which bear out and have suggested these remarks; but I am reminded of the very excellent advice that no author should run the risk of being accused of riding a hobby to death; and lest it be supposed that I hold a special brief against the planting of Larch, let me hasten to add that such is not the case. Good wine requires no bush, and the many good qualities of the Larch are so well appreciated as to render it equally independent of praise from my poor pen. Very few trees possess greater claims to the attention of the forester, and

probably none will so quickly grow into money, when a good selection of site is made, and where good seed, or young plants, can be obtained. But, then, the ideal forester is not a game-preserved, and all I have attempted to say here is that wherever the question of shelter for game enters into a planting scheme, he is the wisest man who keeps constantly before him the superior attractiveness of spruce and silver firs.

Late though the season was, Wood-Pigeons were still cooing in the birch woods above Craig-y-tan, and a pair of scarcely fledged young were noticed in one nest. The Welsh rendering of the Ring Dove's song is *Caerch du du nghwddi*, which from the lips of a native gives quite as good a representation of the liquid sounds as the better known "Take two cows, Taffy." Euphonistically, it may be read something like "Caer dee dee nydi," and literally it means "Oats, black, black, for my stomach," or "Oats, black oats for me." There is also a legend current here, with reference to the carelessly built nest of the Wood-Pigeon, which may be worth repeating. It closely resembles some of those prevalent in other parts of the country, some of which are quoted by Mr Halliwell in his *Popular Rhymes*, but differs a little in detail. According to the common version, the Magpie was entrusted, at the creation of the world, with the task of teaching all the other birds how to build their nests; and how successfully his mission was carried out is seen in the beautiful architecture of the Wren, and the Bottle-Tit. The Dove, however, was an indifferent pupil, and so lazy that she could not endure the labour of continually flying to her nest (as instructed by the Magpie) with one stick only, but kept on crying out, "Take *two* twigs now, Mag," till the professor, in indignation, lost patience and resigned his job. The Welsh variant is that it was the clay, which the Magpie insisted upon using to bind the twigs together for the foundation of the nest, that offended the Dove's idea of cleanliness, and soiled her pink feet; so that she protested, "Mud'll no' do, Maggie," and was therefore left to do the best she could without it.

In Merionethshire, the Wood-Pigeon sometimes com-

promises the matter by laying her eggs on a ledge of linge-covered rock amongst the woods, or even on the ground at the base of a tree, making little more attempt at a nest than a slight scrape in the ground. Or the few twigs brought together at the beginning of the building operations are discarded as incubation proceeds; so that, by the time the young are hatched, there is nothing to keep them from the soil, unless it be the stones, or roots of growing heather.

The Wood-Pigeon accommodates itself to a great variety of food, few vegetable substances, whether bulbous roots, young shoots, or mature seeds, coming amiss to it. In Wales I found it eating the flowering shoots of heather (*Calluna vulgaris*), as well as half-ripe blackberries; elsewhere I have noted it swallowing that worst bugbear of the gardener, the common grey slug (*Limax agrestis*). It eats the berries of many trees, including those of the yew and the mountain ash, generally pulling them from the branches and disregarding those which drop to the ground. Ivy berries are also a favourite food, as are, likewise, acorns and beech-nuts. When the latter are ripe, and have fallen, the three-cornered seeds are picked up amongst the dead leaves on the ground; but before they ripen, the "nut" is often plucked from the tree, and swallowed whole, the inclosing involucre being ground up by the powerful gizzard along with its contained fruit. In spring, Ring Doves are very fond of the bulbous and rather acrid roots of the Lesser Celandine (*Ranunculus ficaria*),—a similar taste being apparent when they devour a clump of the common Stone-crop (*Sedum acre*). On one occasion I was rather surprised to see one caught in a trap set for crows, by the side of a stream, and baited with an egg; but, in that case, curiosity only had, no doubt, been the cause of its misfortune.

Buarthmeini is the farm passed on the left bank of the Lliw, just before the higher falls are reached. The name, signifying "Stone inclosure," is amply justified by the many remains of old walls with which the face of the hill is studded. Arenig lava is thickly scattered over the surface, in pieces large and small, and has been made use of in the erection of these in every possible direction. The old

Buarthmeini is situated amongst the birches, and much-gnarled oaks, on the opposite side of the valley. There are some ancient ash trees here, too, of grotesque and twisted form, which are well worthy of passing notice. Near by is Clogwyn-yr-Eglwys, or "the Church Precipice," and a little lower down, Bwlch-eglwys-Tudur, or the "Pass of the Church of Tudor." A farm called Dolfudr is properly Dol-Tudur ; and a road, or street, known as Stryt-dwr, or Stryt-Tudur, still further preserves the connection of the Saint with the locality.

In the fields, and amongst the trees, huge fragments of rock lie piled and tumbled everywhere, monuments eloquent of times of convulsion in our earth's history. In some of the many beautiful open glades which occur in the woods, many Lizards (*Lacerta vipipera*) find a congenial home amidst this wilderness of stones. Much of the surrounding ground is too wet to be to their liking ; but the crevices, and sunny ledges, of the rocks afford them just the kind of shelter, and basking places, they most enjoy. On the hills they occur frequently amongst the heather, or on grassy knolls ; but there a warning rustle, and a disappearing tail, is all that one commonly sees of them. There, too, they are seldom seen except singly. There was one isolated rock amongst the birches, above Craig-y-tan, which I used always to approach with caution, whenever I chanced to be in that neighbourhood. It was nearly as big as a small cottage, and its broad flat top was covered with two or three feet of peat, and overgrown with heather, and whortle-berry, which there flourished out of reach of the browsing sheep, and cattle, that crop them close wherever they can get at them. The growth of the peat in such a situation is a matter worthy of attention. On the sunny side of the rock was a chink inhabited by quite a large colony of Lizards. I have seen half a dozen or more of them sunning themselves together, with bodies flattened against the lichen-covered stone ; and on one occasion, as the result of a sudden grab, had three of them beneath my hand at one time. Two more were caught about an hour later, when as many more had taken the place of their captured relatives, and all

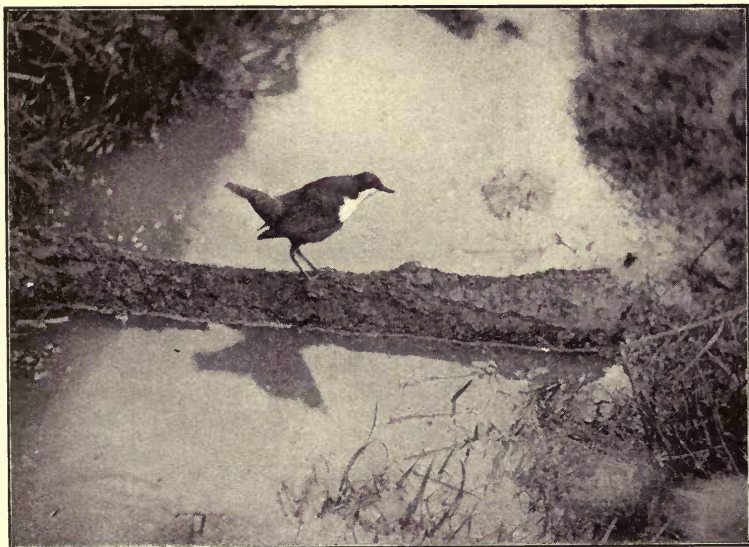
of those caught were full-grown adults, three of them with bodies distended with eggs. This was the only species of Lizard (excluding the Slow-worm) which I identified in these parts, and it is, indeed, the only one likely to occur here ; but it is worth while mentioning that some of those seen on the hills, near the Llanweddyn road, were of very large size. A Welshman, who was with me one day, declared that he had seen one that was eighteen inches in length, but it could not be captured for verification. I do not, however, think it an exaggeration to say that one or two of those I saw myself were not less than half that size. The Lizard is the *Madfall* of the Welshman, and is generally regarded as venomous.

The Slow-worm is called *Pwl dall*, pool blind, or *Neidr ddafad*, sheep-adder, and is not uncommon, but by no means numerous, being always destroyed at sight as a snake. A female I picked up near Glan Rafon, on 19th August, was heavy with young. The otter hounds were drawing the Lliw at the time, and my handling "the snake" caused no small stir amongst the field, while I had to carry it off in my pocket to prevent it being killed. It is difficult to imagine why a creature, possessed of such bright and pretty eyes, should have had the name of "Blind-worm" almost universally bestowed upon it ; though possibly the misnomer may have arisen from the fact of its having eyelids, and closing its eyes in death, which, of course, a snake, being devoid of these appendages, cannot do. If people could only be persuaded to overcome their prejudice against its snake-like appearance, the Slow-worm might be made a useful garden pet, as slugs and worms constitute almost its only food.

I did not see a single Viper (*Gwiber*, or *Neidr-ddu*) in this part of Wales, nor did anybody from whom information was sought appear to know it. It can hardly, therefore, be a very common reptile in the district, though on ground so suitable to its requirements it is difficult to believe that it does not occur. At Borth, on the coast of Cardiganshire, it did not used to be uncommon, on the Cors Fochno, or as we boys used to call it, "the Greasy Fritillary and Royal Fern ground," from the fact of both these, to us rare species, being found there.



POCHARD DRAKE.



THE MILLER'S CALON FACH (DIPPER).

CHAPTER XLIV

Goldfinches—Bird-catchers—Dippers' nests—Big Stone Pool—The Swallowing Stone—Superstitions—Diving power of Dippers—Harmlessness of—A "Good little heart."

ROUND about Plas-in-Cwm-Cynllwyd, and some of the neighbouring Almshouse farms, several pairs of Goldfinches breed, appearing always to favour the older settlements in preference to newer gardens, and inclosures, where these have been made. In the main valley, the same thing is noticeable, as though the birds had a respect for old associations. Up the Llafar valley, nests are perhaps more numerous than anywhere else ; but, taken as a whole, there are not many districts where the *Penge*, *Nicol*, or *Peneuryn*,¹ as the Goldfinch is commonly called here, is more common than in the neighbourhood of Llanuwchllyn. In autumn, quite large flocks may often be met with, feeding on the heads of thistles, knapweed, and other weeds, which are only too plentiful in many of the fields ; and a charming sight it is, too, to see perhaps half a dozen of these birds, in all sorts of attitudes, on a single plant, or flitting, in little constantly twittering bands, from one to another. Most of them leave before the approach of winter ; but on any fine day up to the end of October, or even later, one or two old cocks, by this time recovered from the moult, may be heard in full song in the trees about the village. They get into song very quickly in autumn, and sing from August onwards, almost better than they do in spring, when they generally reappear, in pairs, in March and April. The first young are fledged by the end of May.

So many Goldfinches, and the demand there always is for

¹ *Peneuryn*=gold head ; other names are *Gwas-y-Seire*, Sheriff's officer, and *Pobliw*, a parti-coloured bird.

them as cage birds, naturally attract some professional bird-catchers, who arrive from Wrexham, and elsewhere, as soon as the close season is ended, and with the help of call birds, and limed twigs, sometimes make large inroads upon the flocks. One man I saw with eighteen one day—it was the 2nd August,—all young birds except two, and all taken in the course of a few hours. They meet with a ready and immediate sale, he informed me, at one shilling each ; or if he kept them for a few weeks, till they came into colour, he expected to get half-a-crown apiece for them. He had also caught two or three *Sywigw gwnffonhir*,¹ or Long-tailed Tits, from a flock which had chanced to visit his limed twigs, but these he allowed to go again as being of no use to him. The only other birds which it paid to catch being, he said, Linnets, and Redpolls, and these only if he could count upon getting a larger number than was possible here just now.

There was a Dipper's nest, on the Twrch, below Plas, in rather an unusual situation, viz. on the sloping side of a large boulder, on the gravel, in mid stream ; and one day I lay up in the bushes near, and spent four hours (twelve to four) in taking some photographs of it, and the old birds when they came to feed the half-grown young it contained. During that time, the male came eight times, and the female once oftener, so that the young—there were four of them—were fed about every quarter of an hour, or, if they took share and share alike, each would receive a billful only once in an hour. All the food brought appeared to be insects, or their larvæ, the wings of the former being often conspicuous enough ; one large yellow May-fly was brought. As a rule, the birds went different ways, one up the other down stream ; but several times they exchanged routes, and once or twice went together. Scarcely any hunting was done within sight of the nest. When the birds happened to arrive together, the male always greeted his partner with a little song, and was very demonstrative in his bowing and bobbing, and the flirting of his wings. Frequently they

¹ Also called *Lleian gynffonhir*, long-tailed nun ; and *Gwas-y-dryw*, wren's servant.

alighted near at hand, in order to dabble their beaks in the stream, after leaving the nest, although they never made any attempt to remove the droppings of the young, as is common with many birds. When the young wished to relieve themselves, they backed up to the edge of the entrance hole, so that most of the excrement fell on the side of the stone, and made a very considerable mark there. In most nests, their situation ensures that this will fall into, and be carried off by, the running water, so that the parents are saved the trouble of attending to sanitary details.

On the Lliw there was a Dipper's nest *in a hole* in a gravel bank that might have suited a kingfisher, or a sand martin. It was about a couple of feet from the entrance, and, of course, quite invisible, and consisted only of a cup-shaped lining of leaves, no moss roof being either necessary, or practicable, in the confined space. Several other nests, here, were unusually well concealed; one of them in a hole, in a grassy bank, on one of the small streams that fall into the lake; another so far up a stone drain, not more than two feet high, which runs beneath the turnpike near "The Big Stone Pool," on the Little Dee, as to be neither visible, nor get-at-able, to anybody but a small boy, and that only a *very* determined one. Elsewhere, I have seen an occasional nest against the moss-covered trunk of an old oak tree hanging athwart the stream, and twelve or fifteen feet above the water; as well as on a cliff five or six times as far above the ground.

The Big Stone Pool just referred to is sufficiently described by its name, a huge lump of lava rock having blocked the course of the stream, a mile or so above the village. The local name is Carreg Lynaw, or the "Swallowing Stone," because of a superstition that it swallowed up naughty children; and not so long ago (if indeed the practice is yet dead out) it used to be common for mothers, or nurses, to obtain obedience from their charges by threatening, unless they were good, to let the Stone swallow them.

The old belief, which credited the Dipper with the extraordinary power of being able to walk about at the bottom of a stream, no doubt arose from the peculiar manner in

which the bird commonly enters the water from a shelving beach, but has long ago been dispelled by closer observation, as well as by allusion to the fact that the specific gravity of the bird's body is sufficient to render such a feat impossible. It is only by the strenuous and constant use of its wings, in much the same manner as though the bird were flying, that it is able to keep itself for a short time submerged; but that the wings, aided by the feet, are a very efficient means of propulsion, will be acknowledged by all who have ever tried to capture a Dipper in the water. Even an unfledged young one dives with facility on its first introduction to that element, and an adult in the water takes far more catching than a Water Hen, and is much less easily tired. During the autumnal moult, so many of the quill feathers are sometimes lost simultaneously, that a Dipper becomes, for the time, practically incapacitated from flight, and trusts to diving, and hiding below banks, or amongst stones, to escape observation. When walking with a keeper one day near Llanuwchllyn, I came upon a bird in such case; and, although we had a retriever to help us, and the stream was quite a small one, we hunted it for quite twenty minutes without being able to effect a capture. Finally the pursuit was abandoned; but in passing that way, alone, a few days afterwards, I again came upon my friend, and this time determined to try and find out how he evaded us. He was just able to fly sufficiently to make his way, by short flights, back to the old place; and there, as before, he disappeared. Sitting down a short distance away, I had waited perhaps a quarter of an hour, when he emerged from his retreat, bobbing and curtseying to me, as though glad to renew the acquaintance. By and by, confidence being established, he began feeding, and making his way down stream, and I gradually worked myself between him and his retreat, not without a feeling, as I did so, that I was playing rather an underhand game, but his resources were not yet exhausted. A couple of short flights took him to a hedge, good use of his legs being made between them; and with the fall of the hill now in his favour, an extra effort gave him such a start, that he crossed the road

a long way to the good, and reached the lake. Here he evidently felt himself quite beyond danger, for he was running about on the shingle, with all his old *sang-froid* restored, when I again came up with him. As I advanced, he took to the water ; and keeping an offing of twenty or thirty yards, was, I believe, actually trying to curtsy as he swam when I left him !

On the Lliw one day I saw a Dipper catch, and kill, by dashing it against the ground, a Loach of rather over three inches in length. It was able to fly with it a short distance, and lost no time in starting to pick it to pieces ; for, when I recovered the fish for identification, the eyes, and a good deal of the head, had already been devoured. From long observation, however, I feel very confident in asserting that it is very rarely that the Water Ouzel takes a fish, and, then, it is only such species as the Loach, or Miller's Thumb, that habitually lurk beneath stones in the bed of the stream, that are likely to fall a prey to it. I once found a small Lamprey in one of many that I have either shot, or seen shot, upon trout streams, in order to ascertain what they had been feeding upon ; but never knew either the young, or spawn, of Salmonidæ to be so found. That Salmonidæ, in the alevin stage, may sometimes be taken by a Dipper is very probable, for they are then lurking about in very much such places as are hunted for the larvæ of insects ; but, as just stated, I have never seen any evidence of it ; and even if it were found that an occasional alevin is taken, it must not be forgotten that the insects destroyed would, in any case, collectively, have done much more harm on the redds. That a Dipper would eat any spawn which chanced to fall in its way, is also likely enough ; but its manner of feeding is not such as brings ova, in a properly constructed redd, within its reach. It does not grub about the gravel at a depth at which ova lie, but merely skims the surface for such insects, or their larvæ, as may be hiding beneath the upper stones, and which are seized, when, alarmed by its approach, they are making off. That the Dipper is harmless, if not actually beneficial, upon Trout or Salmon redds, is, however, now so well recognised by those

who have paid closest attention to the subject, that my only excuse for dwelling upon the matter here is that I happen to have had a good many opportunities of demonstrating its innocence of the charges that it used to be the fashion to hurl against it, and the bird is always such a charming little companion of the solitary fisherman that it behoves him, of good fellowship, to sing its praises, in return, whenever occasion offers.

On Bala Lake, where a good many Dippers may usually be seen, it is quite common to see them alighting on the water, at quite considerable distances from the shore, and swimming and diving about, over the submerged shallows, like little ducks. I have seen them feeding so at quite twenty yards from the water's edge, and although the habit is common enough elsewhere, it is not in many places that it can be so easily observed, and it may be new to some of my readers.

The Dipper is variously known, in Wales, as *Y Trochwr*, or the ducker; *Wil-y-dwr*, *Merwys*, *Trochydd*, *Lledwed*, *Tresglen-y-dwr*, or water thrush; *Bronwen-y-garw*, or white breast of the torrent; *Gwylch-y-dwfr*, *Bronfraith-y-dwr*, and *Mwyalch-y-dwr*, or water blackbird; names commonly duplicated in other languages, as *Merle plongeur* in French; *Wasseramsel* in German; *Ess feannag*, or crow of the waterfall, *Gobha uisge*, and *Gobha dhubh nan allt*, water blackbird, in Gaelic; and *Fosse konge*, or king of the waterfall, in Norwegian. Water Crow is one of its most familiar English designations. It was the late Duke of Argyll, I think, who so happily described the Dipper's song as being "attuned to the sound of running water"; it may be heard in snatches during almost any month of the year, but is most characteristic of late autumn, and very early spring, when the minstrel will often perform gaily, even perched upon a block of ice. One old lady amongst the Merionethshire mountains told me that there was a saying to the effect that "the water crow keeps the miller from feeling dull at his work"; and one which built every year beside her own water-wheel, she called her *Calon fach*, or "Good little heart," so endeared had it become by long association.

CHAPTER XLV

Pole-traps—Burying a trap—Cruelty of trapping—Land Rails—Invisible young—Omnivorous Geese—Geese and Foxes—Fungi—Squirrels and Weasels—Cat and Weasel—Dog-eating Fox.

A RELIC of barbarous times, not yet very remote, was met with in several places during my wanderings in Merionethshire, in the shape of pole-traps, and the accompanying photograph of one *in situ* may some day be of interest, when the use of such things has been forgotten. Some of the traps were still set, and in working order, maugre the fact that their use had several years before been declared to be illegal by Parliament sitting in a very far distant city. Two of them belonged to, or were “looked after” by a farmer, who combined the avocation of “game watcher” with his ordinary calling, and who, of course, had never heard of any law against them; another had been set by a keeper, who knew better, but was willing to run the risk of the long arm of the law proving too short to reach him here. In the last, a Buzzard and one or two head of minor vermin had been recently taken; one of the others had yielded only a Cuckoo and a Missel Thrush during that season; while a third had been so unproductive that it had not been considered worth while to visit it for so long that its catch had become so rusted, when I saw it, that hardly anything less heavy than an eagle would have sufficed to set it off. So much for carelessness of consequences; another keeper had gone to the opposite extreme. He, needless to say, was a carefu’ Hielant lad, and fearing lest he might be compromised by having the implements of offence found about him, while at the same time reluctant to wantonly destroy his employer’s property, he had taken the precaution of burying his pole-traps at a safe distance from

his cottage as soon as the Act prohibiting their use became law.

“They will be safe there,” he opined, “and can be dug up again if axed for, and in the meantime they can do nobody any harm whateffer; forby, if she needed wan, she’ll no have far to look for’t”!

In capable hands, the pole-trap was a most destructive engine, and its disuse can hardly be regretted by anyone; but its most deadly position was not always upon a “pole,” and there are numberless cases in which an ordinary gin can quite as effectively take its place without infringement of the law—*i.e.* so long as it remains legal to set a baited steel trap of any kind upon a moor. So far as cruelty is concerned, it may be more revolting to our feelings to see a bird hanging suspended by a leg from a pole, and fluttering its life out in that helpless position; but it is open to doubt whether more suffering is entailed in such a case than when the victim is left to die a more lingering death from starvation and pain, in a trap set upon the level ground, and, personally, I hope to see the day when the use of all such traps, whether for taking rabbits or vermin, may be abandoned.

In walking alongside the railway one evening, I was surprised to come upon a Land Rail sitting upon the top of one of the sleepers which act as posts for the wire fence, and craking away there as lustily as though he had been hidden amongst the grass. I had previously found a nest close by, situated in the middle of a bush of Petty Whin (*Genista anglica*), and could only suppose that it was the partner of the sitting bird that had thus taken up so unusual a position from which to chant his even-song; but, so far as could be seen, there was nothing to account for his choice. On another occasion one was observed walking uneasily along the top of a wall, flirting its tail, and nodding its head, in a very Water-Hen-like manner, but investigation in that case discovered a Weasel hunting about the bottom of the wall as the cause of its uneasiness. This bird uttered no note that was audible where I stood; but I have heard a Corn Crane, when alarmed for the safety of its young, give vent

to a pretty loud *tuck, tuck*, or clucking call, and the actions of the bird on the wall were such as to suggest that it was making some vocal expression of complaint.

The capacity of a Land Rail for threading its way through the grass is well known to everyone who has tried to flush a bird that was calling, but it is never better exemplified than by the marvellous manner in which the young manage to keep out of sight, even when the sheltering hay has been cut all about them. They are at first clothed with black down, and very much resemble Water Hen chicks of a similar age. Gradually they put on a brown plumage, and by the time they are full grown they are practically identical with their parents. In their first black down they are fairly familiar objects ; but by the time they have begun to assume the brown dress, and have developed the full use of their legs, they might almost be credited with the magic power of making themselves invisible, so hard are they to find, and so seldom are they seen. I was one day talking with a man who was busy finishing the cutting of a small field of hay, when his collies flushed a Corn Crake from the tiny patch of grass that still remained to be cut ; but in place of flying right away, the bird alighted not very far from us, and began running in full view, without making any attempt to hide, till forced to take wing again by the dogs which pursued her. She then flew on to the adjoining moor, and in a patch of rushes kept the dogs busy hunting her (without any ill result) for quite twenty minutes. By this time the cutting of the hay had been completed, and, calling up his dogs, the farmer went home to dinner. The crop was a very light one, and, being mown with a scythe, lay in the usual irregular swathes, neither very wide apart nor at all difficult to move. From the behaviour of the old bird, I was convinced that she had left a brood in the last patch of grass to be cut down ; and as this was of such small extent, and the "stubble" left was so short, I felt pretty confident of being able to find at least a few of them. I expected to find little black balls of down, and looked over the ground very carefully, even to the turning over of some of the swathes, but could see nothing of them. The

ground was not more than usually uneven, though its surface was freely marked by the runs of voles, almost inseparable from such moorland pasture. After my unprofitable search, I retired to a clump of willow bushes, not far off, and concealed myself, determined to see what watching could do. In about half an hour, a snake-like head protruded above one of the piles of grass, warned me of the mother's approach, and she had barely reached the site of my late hunt ere first one and then another head appeared, and she was soon making her way towards the moor, attended by not less than six little ones. Upon my first movement, all instantly disappeared, most of them where they ran, but one or two following their mother into the greater security of the cover offered by the edge of the swathe. On reaching the spot, I almost captured the mother beneath the cut grass before she took wing, and then found four of the young ones; but the other two had vanished as mysteriously as before, nor, though the search was kept up for some time, could any trace of them be discovered. Those caught were rather larger than sparrows, very slim, long-legged creatures, and had lost almost all trace of the black down, but the flight feathers had not yet begun to appear. When liberated, they vanished like lizards into the nearest cover, and there lay compressed into surprisingly little space.

About Llanuwchllyn the Corn Crake is as numerous as in most parts of Wales, and is known as *Rhegen-yr-yd*, *Rhegen-y-rhych*, equivalents of the English name, and *Crecciar*; it is also sometimes spoken of as *Ysgrech-y-gwair*, or screech of the hay-field. It is not often met with after September comes in; but towards the end of that month I one day disturbed some Geese in the act of trying to devour one near Tain-y-nant, and one picked up below the telegraph wires has already been referred to on page 258.

Geese are not generally particular as to what they eat, but in this neighbourhood their omnivorous taste is even more pronounced than in most places. This may, perhaps, arise from the general practice of turning the flocks out on to the open moors as soon as the goslings are fairly grown,



POLE TRAP SET.



A FUNGUS FREAK.

and leaving them there, almost in a state of nature, and often far away from human habitation, till near the time of the autumn sales. In spring, I have sometimes seen a pair or two making extended flights. It seems rather strange at first to meet with a large flock of geese (at that time the adults are in the moult, and all are unable to fly) high up upon the mountains, but one soon becomes accustomed to the sight here. They live there for a month or two, and seem to thrive admirably upon what they are able to pick up for themselves; such pickings are, of course, mainly vegetable, but, amongst other things, the large black slug (*Arion ater*) seems to be welcomed as a *bonne-bouche*. The geese nearly always hatch their eggs out of doors, too, either at the roots of the spiræa hedges, or in neat little tent-shaped huts of straw that are put up for their protection from the weather. An old gander keeping watch at the entrance to one of these huts, while his partner is brooding within, is one of the common sights of the country in spring. He shakes his wings and hisses vigorously upon the approach of a stranger; but one is driven to wonder what sort of a defence of his castle he would make, in the event of a hungry vixen, or a fulpar, coming along. When the flock has been turned on to the mountain, it is astonishing that so few of them fall a prey to foxes.

When crossing the Ddwaltt range one day with a farmer, we came upon one of those curious jelly-fish-like fungi (I think *Soppitiella sebacea*), so frequently seen on a moor, and he informed me that his geese were very fond of them. He had not an idea of the true nature of the substance, but called it "Cleaning of the stars," from a belief in its celestial origin. "Star-jelly" is another name given to such Fungi, from a like belief; and they share with *Tremella mesenterica*, sometimes found growing on rotten wood, the designation of "Fairy butter," from the use to which they were formerly put by the Little People.

A mycologist would find the neighbourhood of Llanuwchllyn a happy hunting ground; for, fostered by the dampness of the climate, Fungi are particularly numerous there in autumn. "Inkhorns," and the beautiful

Fly Agaric, *Amanita muscaria*, with its vermilion cap dotted with white, were conspicuous objects in many places; as were likewise *Lactarius subdulcis*, *Agaricus squarrosus*, *Boletus chrysenteron*, and many others of the tubular-gilled species, some of which, in spite of their somewhat uninviting appearance, are, like many of their allies, good to eat. Giant "Puff-balls" were rather common in some of the hay-fields, but the soil is hardly rich enough to produce many mushrooms. In many of the wooded gorges, any trees that had passed their prime were attacked by large colonies of the leathery *Polyporus versicolor*, and its relatives, including that known as the "Dryad's saddle" (*P. squamosus*); and the Honey Agaric sprang in contorted groups from the roots of oak and pine, both decayed and otherwise. Most Fungi appear to wait till decay has set in before they take possession of a tree, and then only hasten its dissolution; but not a few of them, including some of the agarics amongst the number, attack healthy timber quite readily, and are the cause of the death of their host, rather than merely visible evidence that decline has already set in. From the observations of Lord Avebury, it would appear, upon the other hand, that Fungi are not always inimical to their host. Writing of "Woods and Fields," he says:—

"Another very remarkable case which has recently been observed is the relation existing between some of our forest trees and certain Fungi, the species of which have not yet been clearly ascertained. The root tips of the trees are, as it were, enclosed in a thin sheet of closely woven mycelium. It was at first supposed that the fungus was attacking the roots of the tree, but it is now considered that the tree and the fungus mutually benefit one another. The fungus collects nutriment from the soil, which passes into the tree and up to the leaves, where it is elaborated into sap, the greater part being utilised by the tree, but a portion reabsorbed by the fungus. There is reason to think that, in some cases at any rate, the mycelium is that of the Truffle."¹

Freaks amongst Fungi do not appear to be very common, and the annexed photograph, taken near the village, in

¹ *The Beauties of Nature*, 1897, p. 178.

October, showing two heads growing from one stem, may therefore be of interest.

That Squirrels are partial to Fungi of several kinds is well known, partly devoured Fungi being frequently found in their nests. It has more than once been my good fortune to see the animals carrying such delicacies in their mouths, and scampering off with them from tree to tree. One day, in Merionethshire, I almost fancied that I had detected a similar taste in a Weasel, when one was seen making off with a conspicuously yellow and white object in its mouth. A shot from the keeper who accompanied me, however, ended its career, and on getting up we found that the burden carried had been a young one. The old Weasel proved to be a male; and the young one, quite recently killed and still warm, had already had its hind-quarters partly devoured, from which it would appear that Weasels must sometimes hunt and prey upon one another. My companion said he had always been of opinion that they did so; and that he attributed the partly devoured remains of Weasels, which he occasionally found in his traps, to this cannibalistic propensity. The same man had his vermin rail within easy gunshot of the back door of his cottage, regardless of the aroma arising from the decaying bodies of his victims. The rail stretched from the wall of a dog-kennel to a neighbouring tree, and conspicuous amongst its adornments there were always present a goodly number of Weasels and Stoats. Notwithstanding the proximity of the dogs, he had, from his own door, shot more than one Weasel that was actually engaged in making a meal off the body (sometimes by no means in a fresh condition) of one of its own species, and that although, at the time, the rail carried the remains of hawks and other vermin that had more recently been hung up there, and which might therefore have been supposed to be more tempting as food. Such tastes are, of course, not unknown, and most keepers are well aware of the fact that one of the best baits for either Weasel or Stoat is the dead body of a companion, or to rub the trap with the body so as to give it a smell. I myself witnessed the death of one cannibal Weasel at this same rail, but it did not fall to the

keeper's gun, but to his Cat, which we watched for some minutes stalking the Weasel on the rail, and, cutting off its retreat to the kennel wall, finally effecting a capture when the Weasel leapt to the ground in order to try to escape in that way. I had several times, previously, known a Cat to catch a Weasel, and once knew one to kill a full-grown Stoat, but I do not fancy that such prey is usually eaten by a domestic cat. A few years ago, when accompanying a rabbit-catcher on his rounds, I saw a dead Weasel in a trap with the heads of no less than three young ones lying beside her. She was in milk, but the young had been of considerable size, and her stomach looked to be uncomfortably filled with their remains. Possibly, in this case, the mother might have been carrying a young one in her mouth when the fatal jaws of the trap closed upon her, and it is quite conceivable that she might have killed it in the first paroxysm of pain; but that she should have eaten it, in the circumstances, as well as its companions, which were probably following her, or why the heads had been rejected, seemed curious, to say the least of it.

One sometimes meets with queer tastes in animals, and writing thus of Weasels brings one particular instance to mind, which happened on the Merionethshire moors. I one day disturbed a sheep-dog busy making a meal off a Fox, which had evidently been dead at least a day. Whether the dog had originally killed it or not there was nothing to show; nor was this the whole story. A couple of days later, a keeper, with a view to "Hoodies," placed a trap at the remains and caught a poor Hedgehog! The latter animal, by the way, was not very common about Llanuwchllyn, but I saw a pair trapped by a keeper on the open heather, near the Ddwallt precipice, at a height of well over 1000 feet, and not, one would have supposed, a likely place to find such creatures. The Hedgehog is known here as *Draen-y-coed*, or *Balloglys*, both referring to its spines, and *Mochyn-y-coed*, or pig of the wood; sometimes it is called *Sarth*, which means a reptile.

CHAPTER XLVI

Castell Carn Dochan—Roman remains—Vestiges of introduced fertility—Wild-flowers—Gold mine—Minerals—Geology—Birds breeding in immature plumage—Peregrine's nest—Powers of vision—Moorland scavengers—Bachelor Grouse—Plumage of Grouse—A keeper's rail.

BEFORE bidding adieu to Llanuwchllyn, space must be found for some reference to Castell Carn Dochan, a huge promontory of rock that abruptly terminates one of the lower spurs of Ffridd-Helyg-y-Moch, about a mile north of the village. Dominating the whole of the lower vale of the Lliw, and at the same time shutting off the low lands from the mountains, it forms one of the chief landmarks of the district. Such a site could never have failed to attract the attention of a military genius, and consequently we find its almost impregnable summit occupied by the remains of a Roman stronghold, founded probably upon a yet more ancient camp. Save for the narrow neck, doubly guarded by fosse and vallum, by which it is connected to the mountain, the fort is bounded upon every side by precipitous cliffs, recalling from a strategic point of view the situation of such castles as Stirling or Dumbarton, and like many of these natural fortresses the rock may owe its origin to its having been a neck, or vent, of the adjacent volcano. The enclosed space is of comparatively small dimensions, the ruins showing the walls to have been six or eight feet in thickness, but little more than their foundations now remain. Springing from amongst the tumbled stones, Nettles bear witness that the fertility which man introduced to so forbidding a spot has not even yet been exhausted; while the Black Spleenwort (*Asplenium trichomanes*) and the Hairbell have discovered the wasted Roman mortar in the chinks of the masonry to be to their liking.

“Mid ruins tumbling to decay,
 Bluebells their azure hues display,
 Still freshly springing,
 Where pride and pomp have passed away,
 To mossy wall and turret grey,
 Like friendship clinging.”

According to Sir Walter Scott, the blossoms of the Bluebell may still be turned to some good purpose, and to such uses would we dedicate them :—

“Take those flowers which, purple waving,
 On the ruin'd ramparts grew,
 Where, the sons of Freedom braving,
 Rome's imperial standards flew.
 Warriors from the breach of danger
 Pluck no longer laurels there,
 They but yield the passing stranger
 Wild-flower wreaths for Beauty's hair.”

The Castell is altogether an admirable site for the habitation of one who was at heart a robber, determined to prey upon the industry of his neighbours, and living in constant fear of retaliation ; but it was scarcely likely to commend itself to those of more peaceful temperament. On this account it was probably soon deserted for the more permanent station of Caergai, and it does not seem to bear any evidence of prolonged occupation since Roman times. A partial excavation of some of the mounds that almost hide the walls has been attempted, but I did not hear of any important find having been made. The Castell seems to have been strangely disregarded even by the chroniclers of legend and romance, for it was one of the very few places of such prominence about which I could gather no sort of tale in the neighbourhood, and which yet presented so many obvious natural capabilities for the adornment of a story.

At the base of Carn Dochan some unpicturesque iron sheds, and a conspicuous white mound of quartz, crushed to the fineness of sand, indicate a gold mine which has been profitably worked in recent years, though no actual washing

has been done for some little time past. The only present evidence of activity is the occasional appearance of a wagon from the mouth of the drift, to add its load to the heap of *débris* accumulated there, and the notice affixed to the gate at the entrance to the tunnel informing the curious that they must not enter. The direction of the drift is towards the base of the Castell rock, and many veins of quartz are intersected by it. From the refuse heap, pretty crystals may sometimes be gathered, and there is abundance of brassy-looking, sulphureous ore; but the latter soon tarnishes, and loses much of its original beauty on exposure to the atmosphere. Bits of lead ore, or galena, are not infrequent in the quartz, some of it containing a little silver; but most particularly interesting are the various phases in the lava which the recently fractured rock discloses, some of the specimens showing admirably its crystalline texture, others demonstrating its metamorphic action on the adjacent slate.

Ring Ouzels breed round the base of the cliff, and on one of the rafters in the gold mine sheds a Missel Thrush had made her nest, rather an unusual site for such a bird to choose; but the keeper, who lives close by, informed me that it was the second year of her occupation, to his knowledge. Up till within a few years ago, Ravens are said to have nested on the highest part of the rock; but the only representatives of the predatory birds now resorting thither are a pair of Kestrels. Of the latter the keeper had shot the male, and nailed the body up to his "rail" a few days previous to my first visit, in May. As a consequence, the female deserted her eggs, and disappeared for a few days, after which she returned with a new mate, and was allowed to take off a brood from a nearly adjoining ledge. The male killed was in immature plumage, as likewise was the father of the brood that were allowed to fly, thus confirming my previous observations that Kestrels, like all our other breeding raptors, often nest in their first year, and before they have assumed their mature dress. A close examination of the dead bird failed to discover that he had shed a single feather of his first, or nest plumage, and so far as

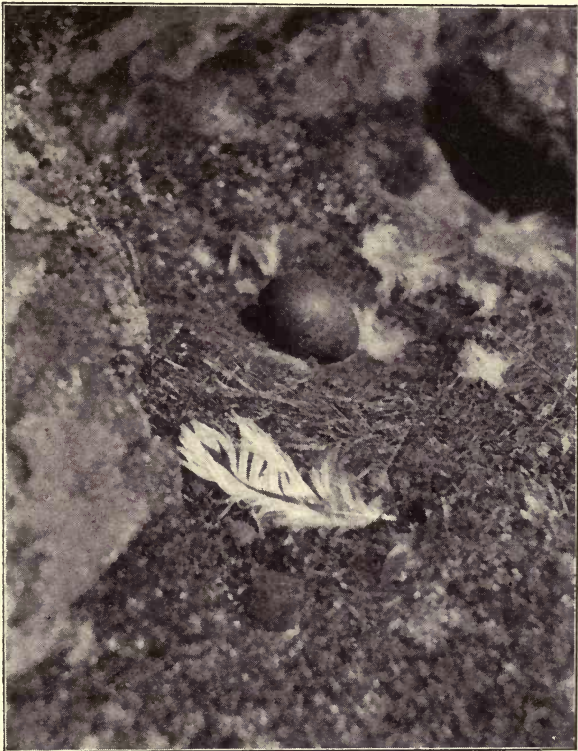
could be seen with the binoculars, his successor was in a precisely similar state.

A female Peregrine Falcon, which I saw shot from her eyrie on the Ddwallt, on 13th May, was heavily in the moult. One or two of the primaries in each wing had been renewed, and were almost full grown ; two of the others had recently been shed, and the gaps they left could easily be seen as the bird soared overhead ; on the back, and amongst the upper wing coverts, a considerable number of adult feathers were beginning to show, but otherwise the bird was in her first plumage. In and about the nest were a number of the cast feathers. At considerable trouble I obtained several photographs of this bird, one of which ought to have shown up very clearly the longitudinal markings on the breast ; but unfortunately, owing to an accident, all the negatives were lost. The one here reproduced of the single egg which the nest contained fortunately escaped the calamity. I do not recollect to have previously seen a falcon sitting upon only one egg, but of course we could not tell that no accident had already befallen the nest, or that the bird had not laid any others ; it was evident, however, that she intended to lay no more, for she had already been sitting for some days before she was shot. While concealed near this eyrie, I saw, on different occasions, the male falcon (who, by the way, was a mature bird) bring to his sitting partner a Grouse, a Pigeon (already plucked save for some of the flight feathers, and a quantity of down about the body), and a Starling. He did not carry them to the nest, however ; but, alighting on a rock above, called the hen to him, and, relinquishing the food to her there, at once flew off again. She generally made her meal on this rock, but sometimes carried the prey to another ; I never saw her bring it to the near neighbourhood of the nest to devour, though the pigeon feathers scattered around seemed to suggest that this was not an invariable custom.

Once, when I had made my way to the nest during the absence of both falcons, I witnessed their return together in most characteristic fashion. There was an interrupted view from the rock over quite a mile of comparatively flat



A KEEPER'S RAIL.



PEREGRINE FALCON'S NEST.

moor, and far away in the distance I happened to catch sight of two moving objects against the sky. Almost before I had had time to realise that these were the falcons, they were close at hand, the rapidity of their flight being such that they might have been supposed to be racing with one another. There was a great rush of wings as they came on, and it was perfectly astonishing how in only the last few yards the pace was checked by an upward glide, enabling the birds to come to a perch within not many yards of my head. They made the rock almost simultaneously, and alighted a few yards apart, the female giving herself a vigorous shake and at once setting about the preening of her feathers. Then the male began to call softly, and leaving his perch, approached still nearer to the nest ; but my slightest movement now alarmed him, and with a warning cry he dropped over the rock and was quickly followed by his companion. In approaching their eyrie, the birds would not appear to take the slightest precaution to guard against an ambush, all being staked upon their powers of direct vision ; and marvellously keen though those powers be, it is yet more astonishing how they can be brought into full play while the birds are moving through the air at such a high rate of speed.

The Ddwallt is an ancient nesting station of the Peregrine ; and although one or other of the birds are often killed, others always turn up to take their places, if not at once, then certainly before the following season. Of a pair which occupied the site in 1906, the female was an inveterate slayer of Grouse, and sorely taxed the patience of the keeper on the beat. When walking over the adjoining moor with him one day, about the middle of April, we picked up no fewer than three old cocks, all of which had evidently fallen to the falcon's skill. One of them had been partly devoured, but the others were untouched, save for the rip on the back caused by the falcon's claw. In one of them the claw had caught the neck, and almost severed the head from the body. Traps were set at two of the remains ; but only resulted in the death of that scavenger of the moors, a poor Buzzard, and a Hedgehog. One Grouse

we brought home with us for further examination. Like the others, he was in high condition, having almost completed his moult to summer plumage, and showing very conspicuous scarlet eye-combs. The glossy surface of the feathers at this season is in marked contrast to the winter or autumn plumage, in which state Grouse are more usually handled, and is often so bright as to recall the burnishing on the spring dress of a cock pheasant, or some of the other gallinaceous birds. In probably nine cases out of ten, it will be found to be a male Grouse that falls a victim to a falcon in spring, he being then so much more prone to be found upon the wing than the female, and the latter amongst the heather being quite out of harm's way, so far as a Peregrine is concerned. It is more than likely, moreover, that the greater proportion of the birds killed belong to the class of "old bachelors," of which most keepers are generally only too glad to be rid before nesting time comes on. It is the roving tendency of these unpaired birds that makes their presence undesirable on a moor; but that same wandering habit also exposes them to the falcon's attack, and it would seem therefore to follow that there may be worse things on a moor than a Peregrine, even though she may have developed a taste for Grouse. This is a point that may be worth the consideration of those owners of grouse moors, and their servants, who still continue to destroy falcons, and may at the same time serve as a solace to the more kindly people who have discontinued the practice, and may be in doubt as to the wisdom of their action when they pick up a dead grouse or two beneath the falcon's crag.

I will just add that the photograph which fittingly brings these chapters to a close is of a portion of the keeper's rail at Glan Rafon. It carried at the time some 50 head of "vermin," including a buzzard, half a dozen ravens, 16 crows, 6 female sparrow-hawks, 2 magpies, a jackdaw, 2 kestrels, and about 20 stoats and weasels. Sometimes it was even more heavily laden, its presiding genius being one of the keenest trappers in the neighbourhood; but he has since left to fill a more important post on the Earl of

Ellesmere's estate near Manchester, and assuredly wild life on the mountains of Merionethshire has small cause to weep over his removal. If some of her weaker denizens find themselves in different case we may lament with them, in the words of Burns' "Elegy on Captain Henderson," over the loss of one of their best friends,—

“Mourn, ye wee songsters o' the wood ;
Ye grouse that crap the heather bud ;
Ye curlews calling thro' a clud ;
 Ye whistling plover ;
And mourn, ye whirring pairtrick brood,
 He's gane for ever.”

INDEX

- Adder, 376.
 Additions to fauna, 290.
 Advent of Spring, 79, 96.
 Affection amongst birds, 275.
 Agricultural crops, 12.
 improvements, 16.
 problems, 197.
 Agriculture, 3.
 changes of tenancy, 9.
 curiosities of, 4, 14, 15.
 laborious, 128.
 relation of cost to returns, 254.
 Albinos, increase of, 291.
 Ancient habitations, 227.
Anglers' Book at Vyrnwy, 116.
 Invitation, 174.
 Angler using larger baits, 25.
 Ants, 362.
 Aquatic sheep, 107.
 Arthur, relics of King, 98.
 spirit of, 149.
 Ash, Weeping, 102.
 Avon Fechan, 125.

 Badgers, 318.
 Bala Lake, 18, 39.
 excellence of its fish, 37.
 wildfowl on, 39.
 Balance of Nature, 290, 303.
 Barmouth, 59.
 Barrows, British, 115.
 Bat, Daubenton's, 308.
 Long-eared, 306.
 Noctule, 311.
 Pipistrelle, 306.
 Bats, 302, 305.
 Beetles, 88, 131, 223, 237, 243, 256,
 315, 356.
 Berries, Destruction of, by birds, 105.
 Big Stone Pool, 379.
 Bird-catchers, 378.
 Birds, affection for one another, 275.
 breeding in immature plumage, 393.
 carrying young, 170, 269.
 courtship of, 274.
 driving away their young, 211.
 feigning lameness, 172.

 Birds, getting new mates, 393.
 ground building, 159.
 frequently building in trees or rocks,
 132.
 need no teaching to fly, 295-298.
 non-breeding, 205.
 pairing for life, 273.
 power of smelling, 215.
 rate of increase and death in, 68.
 recognising a distant friend, 200.
 remaining on nest, 262.
 returning to old nesting sites, 211.
 song of, 275.
 teaching young to fly, 133, 134.
 term of life in, 69, 184.
 Birds of prey carrying booty, 130, 240,
 351, 369.
 Bitter milk, 2.
 Blackbird, 35, 103, 161, 181.
 Black-game, 118.
 Blindworm, 376.
 Bloodworms, 85.
 Bluebells, 392.
 Blue merle collies, 5.
 Bogs, 121.
 Borth, 234.
 Bottomless pit, 322.
 Braken Clock, 243.
 Brambles, 114.
 Brambling, 288.
 Breams, 37.
 Buarthmeini, 374.
 Bullfinch, 287.
 Bullhead, 25.
 Bulls, 13, 231.
 Bunting, Reed, 280.
 Yellow, 161, 287.
 Buried seeds, 115.
 Butterflies, 84, 111, 114, 131, 182, 286,
 376.
 Buzzard, 56, 94, 120, 128, 133, 212, 216,
 228, 239, 248, 324, 345, 354, 395-
 harmlessness of, 56, 253.

 Caergai, 98.
 Calcium, 181.
 Call of the wild, a, 251.

- Canis familiaris predatorius*, 235.
 Castell Carn Dochan, 391.
 Catching a weasel asleep, 139.
 Caterpillars, 97, 108-10, 265.
 eaten by sheep, 108.
 effect of climate on, 85.
 plague of, 62.
 Caterpillar year, a, 66.
 Cats, 259, 290, 293, 331, 390.
 amphibious, 332.
 Cattle, black, 13, 119, 129.
 Hereford, 119.
 Celandine, 80.
 Celtic character, 16.
 hospitality, 2.
 imagination and patriotism, 233.
 Chaffinch, 117, 161.
 Chain of destruction, a, 316.
 Change of colour in fur, 139.
 Changing fauna, a, 69.
 Cherry trees, Wild, 364.
 Chiffchaff, 179.
 Chough, 192.
 Chrysalides affected by weather, 85.
 Chub, 113.
 Click-beetles, 256.
 Clipping lambs, 10.
 Coal Tit, 135.
 Coch-y-bondhu, or Coch-a-bonddu, 243.
 Cockchafers, 131, 243, 315.
 Cock-crowing, 123.
 Collies, 4.
 blue merles, 5.
 poaching, 218, 235.
 Welsh types of, 5.
 Consumers and producers, 180.
 Coots, 40, 43, 44.
 Coral Island, 180.
 Corby, 206.
 messenger, 206.
Coregonidae, 30.
 Cormorants, 36, 46.
 Corn Crake, 161, 258, 286, 384.
 Corpse bird, 77, 357.
 Cotton grass, 108.
 Courtship amongst birds, 274.
 Craig-Llyn-Dyŷn, 343.
 Crane-flies, 88, 255.
 Creepers, and Creeper-fishing, 117, 118.
 Creeper, Tree, 258, 280, 287, 364.
 Crops, 12.
 Crows, 81, 141, 172, 184, 191, 212, 221, 283, 287.
 Crow family, 191.
 hooded, 191.
 Cruelty, 384.
 Cuckoo, 130, 162, 286.
 spit, 157.
 Cupid's spring, 143.
 Curlew, 99, 262, 286.
 Curse of Noah, 207.
 an ancient, 251.
 Curved *v.* straight bills, 263.
 Customs, old, 9, 15.
 Cwic Craes, 226.
 Cwmfynon, 225.
 Cymmer Abbey, 18, 59.
 Dabchick taken by Pike, 29.
 diving powers of, 43 (*see* Grebe, Little).
 Daddy-long-legs, 254.
 Dallgwm, 142.
 Death-rate amongst birds, 68.
 Dee, River, 20.
 Demon Haunt, 60.
 Demons, 102.
 Development of races, 31, 261.
 Devil's Rock, 209.
 footprints, 209.
 Dew, 125.
 Dew-berries, 114.
 Dinas Mawddwy, 247.
 Dipper, 161, 286, 378.
 Diseased Grouse and Salmon, 219.
 Dogs, intelligence of, 4.
 numbers of, 5.
 Dolgelly, 58.
 Dormice, 50.
 Dove, Ring, 283, 370-371.
 Stock, 178, 366, 370.
 Dragon-flies, 112, 131.
 Drainers, natural, 89.
 Drought, effect of, on insects, etc., 85.
 Druid's bird, 149.
 Druid's rock, 209.
 Drumming of Snipe, 99.
 Drws-y-nant, 59.
 Duck, Golden-eye, 40.
 Hybrid, 41.
 Pochard, 40.
 Teal, 40, 54.
 Tufted, 40.
 Wigeon, 40.
 Wild, 40, 41.
 Ducklings destroyed by Pike, 29.
 Ducks on Bala Lake, 40.
 Dunlin, 263, 268, 283.
 Dust-bath taken by Wren, 149.
 Dyfi, or Dovey Valley, 234.
 Eagles, 128, 134, 145, 369.
 Golden, 146.
 White-tailed, 146.
 Edeinion, Fair Vale of, 19.

- Eels, 38.
 and Cormorants, 48.
 natural check upon, 202.
 in Stoat's larder, 331.
- Eggs, 2, 3.
 number laid by insects, 63.
 spotted eggs of birds, 73.
- Egg-shells, 180.
- Eiddon brook, 59.
- Ermine, 141.
- Evil spirits, 209.
- Fairies, 329, 345.
- Fairy butter, 387.
- Falcon (*see* Peregrine).
- Familiarity breeds contempt, 213, 332.
- Farmer, contented, 12.
- Farmers' friends, 89, 229, 246, 258, 265.
 toast, 13.
- Farms, small, 3.
- Fat pancakes, 2.
- Feathers, study of, 360.
- Ferns, 242, 376, 391.
- Fertility, introduced, 391.
- Fieldfares, 288.
- Field mice, 159, 179.
- Fir trees, 371-373.
- Fish, enemies of, 47.
 eaten by Stoats, etc., 331.
 effect of frost on, 85.
- Fishing, 225, 230.
 extraordinary, 24.
 improvement of, 116
 season, 21.
- Flails, 15.
- Flight of Bats, 309.
 of birds, 54, 295, 298, 359, 367, 369.
- Flint implements, 228.
- Flood, the great, 102, 226.
- Floods, summer, 169.
- Flowers, varieties of, 150, 155.
 wild, 150, 392.
- Flycatcher, Pied, 67, 73.
 Spotted, 72, 161.
- Flying machine, an ideal, 295.
- Food, birds and animals as, 49.
- Food on fertility, influence of, 66.
- Footprints in rock, 209.
- Foxes, 94, 141, 342, 390.
- Frog-hopper, 157.
- Frogs, 83, 106.
 effect of frost upon, 85, 106.
- Frost, its effect on insects, etc., 84.
- Funerals, Ravens attending, 209.
- Fungi, 387.
- Galena, 228, 393.
- Game coverts, 372.
- Game, enemies of, 141.
- Garden pets, 272, 376.
- Gastric juices, power of, 224.
- Geese, wild, 45.
 carnivorous, 160.
 omnivorous, 386.
 on mountains, 387.
- Geology, 39, 101, 128, 153, 226, 375, 391.
- Giant's chair, 345.
 stairway, 120.
- Giant story, 344.
- Gleisiad, 35.
- Glow-worm, 125.
- Gnats, 86.
- Goatsucker (*see* Nightjar).
- Golden-crested Wren, 178, 283.
- Golden-eye, 40.
- Goldfinch, 283, 377.
- Gold-mining, 59, 228, 392.
- Goosander, 45.
- Grasses, 129.
Poa annua, 154.
 viviparous, 151.
- Grasshopper Warbler, 72.
- Grayling, 20.
- Grazing, close, 159.
- Grebe, Great Crested, 53.
 Little, 29, 40, 43, 52, 287.
- Greenfinch, 161, 176.
- Greenshank, 263, 282, 291. *re*
- Grouse, 35, 83, 184, 287, 395.
 diseased, 219.
 moors, 118.
 a falcon on, 296.
- Gudgeon, 29.
- Gulls, 257, 280, 291.
 black-headed, 88, 117, 280.
 herring, 280.
 Lesser Black-backed, 280.
- Gwyniad, 30.
 origin of, 20.
 traditions regarding, 26.
- "Hag of midnight mist," 120.
- Hand plough, 14.
- Hare, 231, 353.
- Harrier, Hen, 145.
 Montagu's, 145.
- Hawfinch, 76.
- Hazels, abundance of, 62.
- Heather, White, 155.
- Hedgehog, 390, 395.
- Hedges of Spiraea, 169.
- Hedge Sparrow, 161, 179.
- Helm Hawk, 251.
- Heraldry, prototypes of, 48.

- Heron, 44, 199.
 Hibernating birds, 293.
 Highest road in Wales, 127.
 Highland keepers, 121.
 and Welsh, 124.
 Hobby, 300.
 Hounds, Stoats as, 231.
 Humid climate, 151.
 Humming-birds, 296.
 Hybrid fish, 37.
 ducks, 41.

 Iceland moss, 278.
 Ichneumon flies, 64.
 Immature birds breeding, 166, 393.
 Increase, rate of, in birds, 68.
 in insects, 64, 197, 303.
 Insects, 64, 79, 84-88, 197, 301-304.
 Intelligence in birds, 189, 217.
 Iron Duns, 301.

 Jackdaw, 189, 191, 193, 195.
 Jack Snipe, 101.
 Jay, 193, 194, 239.
 Jenny Spinners, 301.

 Keepers' Rails, 132, 221, 389, 396.
 Kestrel, 56, 143, 187, 212, 216, 287,
 356, 393.
 and Swallow, 57.
 King Arthur, relics of, 98.
 spirit of, 149.
 Kingfisher, 283.
 King of birds, 147.
 Kite, 146, 229.

 Lakelet, 106.
 Lake trout, 22.
 Lake Vyrnwy, 113.
 Landmarks, 391.
 removal of, 16.
 Land Rail, 50, 161, 258, 286, 384.
 Landslide, effect of, 101.
 Lapwing (*see* Green Plover).
 Lark, 161, 258.
 Wood, 237.
 Lawn-keeper's best friend, 154.
 Lead ore, 228, 393.
 Leather-jackets, 254.
 Legends, 19, 59, 60, 128, 161, 344, 373,
 392.
 Lessons to young birds, 133, 134.
 Lichens as food, 277.
 dried up and still alive, 78.
 and mosses, 120.

 Life of birds, term of, 69, 184, 203.
 tenacity of, 219.
 Lightning, tree struck by, 282.
 Lime, some uses of, 180, 254.
 Linnet, 161, 285, 378.
 Little Dee, 59.
 Liverpool's water supply, 113.
 Lizards, 114, 375.
 Llanderfel, 19.
 Llangowr, 176.
 Llanuwchllyn, 1.
 Church of, 18.
 Llan-y-cil, 39.
 Llanwddyn Road, 143.
 Llyn Lliwbran, 229.
 Llyn Tegid, 18.
 Loach, 381.
 Long names, 11.
 Love-songs, strange, 81.
 Lucky birds, 198.
 Lywarch Hen, 144.

 Maggots, 219.
 Magpie, 55, 97, 189, 192, 194, 373.
 Mallwyd Church, 236.
 ghost at, 235.
 Mange in foxes, 342.
 Marsh Tit, 285.
 Marten, 333.
 Martin, 285, 286, 300.
 Sand, 198, 283, 300, 304.
 Marvels of Nature, 296, 361.
 Master and dog, understanding between,
 4.
 Mavis, 104.
 Mawddwy, 247.
 May flies, 117.
 Melody, bird, 275.
 Merle, 104.
 Merlin, 130, 212, 287, 289, 300.
 Mesmeric influence in animals, 232,
 352.
 Meteor, a bird, 55.
 Mice, field, 159, 179.
 Midge grass, 257.
 Midge or midgy, 87.
 Midges, 84.
 as weather prophets, 88.
 Migration of birds, 71, 106, 281.
 local, 273, 362.
 of insects, 63.
 Mile-stone, an old, 16.
 Milk, a brook of, 344.
 Miller's thumb, 25.
 Mimicry, protective, 97.
 Mimics, bird, 285.
 Minerals, 59, 228, 393.
 Minnows, 28, 29.

- Missel Thrush, 35, 103, 393.
 Moles, 89, 160, 252, 258.
 price of skins, 94.
 Moraine heap, a modern, 101.
 Morning on the mountain, 127.
 Mosquitoes, 86.
 Moths, 62, 77, 96, 97, 108-111, 131,
 183, 206, 299, 359.
 enemies of, and increase, 64.
 immigration of, 63.
 manufacture of, 65.
 Moulting, 166, 241, 352.
 Mountain Ash, 120.
 dew, 3.
 Finch, 288.
 Mountains, morning on the, 127.
 Spring on the, 79.
 Mulberry leaf and silk dress, 64.
 Mummy wheat, 115.

 Names, long, 11.
 Nannaw, 60.
 Native trees and shrubs, 114.
 Natural spread of vegetation, 152.
 Nature a stoic, 220.
 balance of, 290, 303.
 marvels of, 296, 361.
 puzzles of, 141, 220, 227.
 Nature's care of her children, 303.
 drainers, 89.
 engineering schemes, 120.
 most perfect production, 303.
 scavengers, 219, 253.
 workshop, 65.
 Nest-building, 347, 373.
 Nests in unusual situations, 132, 159.
 on railway banks, 169.
 Nettles a relic of human habitation,
 391.
 Newts, 107.
 Nightjar, 287, 302, 356.
 Nightjar's song, 126.
 Noah's curse, 207.
 No English, 1.
 Non-breeding birds, 205.
 Nuthatch, 236, 364.
 Nuts, 62.

 Oak, an ancient, 60.
 Oaks, age of, 61.
 Oatcakes, 2.
 October, 115.
 Oriental carelessness, 294.
 Osprey, 297.
 Otters, 319.
 Outlaw, burial place of an, 128.
 Owl, Brown, 187, 242.
 Long-eared, 135, 245.
 Short-eared, 246.

 Owl, White, 176, 235, 286.
 Owls, 94, 147, 304.
 taking Bat on wing, 312.
 Oystercatcher, 263, 264, 280, 291.

 Packhorse bridges, 225, 247.
 Pain animals suffer, 220.
 Pairing for life amongst birds, 273.
 Pancakes, 2.
 Pant Gwen, 58.
 Parasitical worms, 240, 363.
 Partridges, 25, 80, 161, 257, 351.
 Peat, growth of, 226, 375.
 Perch, 28, 29.
 Peregrine, 55, 134, 142, 212, 232, 249,
 366, 394.
 Petrel, Leach's, 291.
 Petrels, 291.
 Pheasant, 83, 161, 176, 195, 258.
 Picture of Peace, 127.
 Pigeons, 366.
 homing, 368.
 Pike, 24, 26, 28, 35.
 Pipit, Meadow, 20, 130, 131, 160, 182,
 213, 227, 368.
 Moor (*see* Meadow).
 Tree, 161, 162, 182, 237.
 Planting, for game or profit, 337.
 tasteful, 114.
 Plants, varieties of, 150, 155.
 Ploughing, 128.
 extraordinary, 14.
 Plover, Golden, 262, 270, 282, 283,
 286.
 Green, 80, 281, 282.
 Ringed, 263, 291.
 Plovers, 80, 99, 258, 281, 355.
 Plumage, abnormal, 238, 291.
 changes of, 70, 270, 276, 278, 365,
 396.
Poa annua, 154.
 Poacher's conscience, 218.
 Pochards, 40.
 Poisoning vermin, 137, 222.
 Polecat, 121, 123, 336.
 Pole-traps, 383.
 Pollen, distribution of, 360.
 Poultry, 2.
 losses of, by vermin, 122, 387.
 Poultry thief, 122.
 Producers and consumers, 180.
 Protected nesting areas, 160.
 Protective colouring, 78, 97, 366.
 Pupa-digging, 93.
 Puzzles in Nature, some, 141, 220, 227.

 Quartz, 102, 393.
 Queer tastes, 49, 390.
 Quern, 129.

- Rabbit, 231, 232, 326.
 Rail, Water, 291.
 Railway-side nests, 169.
 Rams' Castle, 228.
 Rare birds, untimely end of, 290.
 Rats, 320.
 Rattling, 45.
 Raven, 94, 120, 186, 189, 191, 204, 214,
 249, 369, 393.
 Ravens' God, 207.
 Red-handed thieves of Dinas, 127,
 247.
 Redpolls, 287, 378.
 Redshank, 263, 282.
 Redstart, 280, 285.
 Redwing, 288.
 Reed Bunting, 280.
 Refuse thrown into rivers, 22.
 Reindeer moss, 278.
 Repairing damaged feather, 352.
 Rhiw Argor, 120.
 Rhyd-y-bod, 229.
 Ring Ouzel, 134, 162, 181, 213, 258,
 286, 393.
 Roach, 37.
 Roadside nests, 181.
 Robin, 161, 287.
 Rock gardening, 155.
 Rock plants, 153.
 Roman intruders, 115.
 road, 97, 228.
 remains, 98, 144, 227, 391.
 Rook, 81, 187, 191, 195, 257, 266,
 369.
 Rookery, birds nesting in, 187, 199.
 roosting in, 193.
 Roots of plants, 155.
 Round table, 98.
 Rudd, 37.
 Rushes, 151.
 Rush-light, 229.

 Sable singers, 81.
 Sagacity and cunning of birds, 217.
 Sailor's curse, 291.
 Salmon, 20.
 disease, 219.
Salmonida, 20, 381.
 Sand Martin, 198, 283, 304.
 Sandpiper, 161, 169, 263, 285, 302.
 Green, 291.
 Saxons, 115, 144.
 Scavengers, Nature's, 218, 253.
 of moor, 395.
 Scenery, grand, 226.
 "Screws," 86.
 Seagulls, 257.
 Sea Trout, 35.
 Seeds, vitality of, 115.

 Sentinels, good, 44.
 Shag, 50.
 Shearwaters, 291.
 Sheep, 129.
 accident to a, 219.
 aquatic, 107.
 breeding, 7.
 clipping lambs, 10.
 eating lichens, 278.
 improvement in, 8.
 leading a, 3.
 neglect of, 4, 8.
 numbers of, 5.
 rot in, 257.
 sales and fairs, 7.
 tithing rams, 11.
 types of, 10.
 valuations of, 9.
 worrying, 6.
 Sheldrake, 253.
 Shooting butts, 130.
 Shoveler, 45.
 Shrews, 160.
 Shrew, Common, 66, 258.
 Lesser, 260.
 Oared, 260.
 Water, 259.
 Shrike, Red-backed, 161, 237, 287.
 Shrubs and trees destroyed by Starlings,
 196.
 Silk dress and mulberry leaf, 64.
 Siskin, 289.
 Skellies, 114.
 Skip-jack beetles, 256.
 Slow-worm, 376.
 Slugs and snails eaten by birds, 265,
 374, 387.
 Smell, power of birds to, 215.
 power of animals to, 341.
 Smoke-like wreaths of midges, 87.
 Snake and its prey, 353.
 Snipe, 99, 258.
 Great, 291.
 Jack, 101, 258.
 Summer, 174.
 Soaring, 250.
 Song in birds, cause of, 275.
 Song Thrush, 35, 103-5, 161.
 Songs, strange, 81, 357.
 Sparrow, 280, 286.
 Tree, 288.
 Sparrow-Hawk, 135, 172, 193, 239, 283,
 287, 289, 347, 354.
 Sparrow pie, 49.
 Spinners and troellwrs, 72, 99, 357.
 Spiræa hedges, 169.
 Sporting instinct, 138.
 Sportsmen endowed with instinct only,
 138.

- Spotted eggs, 73.
 Spring, advent of, 79, 96.
 Squirrels, 50, 76, 177, 325, 389.
 Stagshorn moss, 182.
 "Star-jelly," 387.
 Starlings, 117, 131, 195, 257.
 Stoat, 94, 106, 136, 231, 325, 330, 353, 389.
 Stock Dove, 178, 366, 370.
 Stonechat, 276, 282.
 Stone-fly, 117, 283.
 Stones used in building, huge 230 remarkable, 102.
 Stories, 123, 147, 200, 267.
 Sudden change in landscape, 101.
 Summer floods, 169.
 Superstitions and beliefs, 95, 165, 203, 208, 258, 307, 318, 322, 328, 379, 383.
 Swallow, 57, 88, 117, 198, 283, 299, 300, 304.
 Swallow and Kestrel, 57.
 "Swallowing Stone," 379.
 Swift, 117, 286, 292.
 Swifts' edible nests, 313.
- Taffy was a Welshman, 123.
 "Tall stones," 102.
 Tasteful planting, 114.
 Taxin, 177.
 Tea, 2.
 Teal, 40, 54.
 Thaws and frosts, effect of, on insects, etc., 85.
 Thieves, 122, 127, 198, 247.
 Threshing with flail, 15.
 Thrush, Missel, 35, 103, 393.
 Song, 35, 103-5, 161.
 Thrushes, 35, 103, 120, 176, 181, 258.
 Thunder, 282, 300.
 Tiger beetle, 237.
 Timber, 114.
 Tit, Coal, 135.
 Great, 286.
 Long-tailed, 286, 378.
 Marsh, 285.
 Toad, 302.
 Tongue of Woodpecker, 366.
 Toothache, cures for, 157.
 Tracks in snow, 137, 321, 337.
 Tradition, 344.
 Trapping, 124, 136, 383.
 Trees, age of, 61.
 ancient, 375.
 Trout, 21.
 early spawning, 24.
 large, 28.
 Rainbow, 116.
- Trout spawning in lake, 230.
 weight of, 23.
 Try Llanwddyn Road, 143.
 Tufted Duck, 40.
 Twite, 161.
- Unwitching, 95.
 Urns, British, 115.
- Vachddeiliog, 142.
 Valuations of sheep stock, 9.
 Vanners, 251.
 Vaughans of Mallwyd, 236.
 of Nannaw, 60.
 of Caergai, 98.
 Vermin, 55, 142, 186, 213, 321, 389, 396.
 Vikings, 207.
 Village, removal of a, 116.
 Viper, 376.
 Vision of animals, 353.
 of birds, 200, 297, 395.
 of bats, 309.
 Vitality of seeds, 115.
 Voles, 90, 159, 235, 252, 278, 329.
 Vyrnwy, Lake, 113, 119.
- Wagtail, Grey, 161, 286.
 Pied, 161, 286, 287.
 Yellow, 160, 161, 286.
 Walking-sticks, 62.
 Wall-building a pastime, 230.
 Warbler, Blackcap, 179, 285.
 Garden, 178, 286.
 Grasshopper, 72.
 Sedge, 286.
 Willow, 161, 178, 283.
 Wood, 178, 287.
 Warning off a dog, 6.
 Watchers, efficient, 44, 241.
 Water Hen, 44, 320.
 Ouzel (*see* Dipper).
 Rail, 291.
 Rat, 320.
 Water-shed, 58.
 Water-worms, 85.
 Waxwing, 289.
 Weasel, 94, 137, 139, 260, 328, 384, 389.
 Weather prognostics, 88, 251.
 Weeping Ash, 102.
 Welsh ambassadors, 165.
 archers, 178.
 farmers, 11.
 gamekeepers, 124.
 mutton, 7.

- Wet and dampness, effect on insects, etc.,
85.
- Wheatear, 134, 213, 227, 285.
- Wheat, mummy, 115.
- Whimbrel, 267.
- Whinchat, 161, 163, 280, 282, 287.
- Whip-poor-will, 358.
- Whistling of birds' wings, 100.
- White heather, 155.
- White moles, 95.
- White Stoats, 139.
- Whitethroat, 161, 285.
- Widgeon, 40.
- Wild-flowers, 150, 392.
- Wildfowl, 39-42.
unfavourable conditions for, 42.
- Wild Geese, 45.
- Winnowing corn, 15.
- Wire-Worms, 254.
- Wizards, 102.
- Woden, 207.
- Wonders of Nature, 296, 361.
- Woodcock, 83, 263.
- Woodpeckers, 76.
Great Spotted, 76, 364.
Green, 362.
- Wood Pigeons, 245, 283, 370, 371.
- Wood or moths? 65.
- Worms, Blood and Water, 85.
intestinal, 240.
- Wren, 147, 149, 161, 277.
Golden-crested, 178, 283.
- Yellow-hammer, 161, 287.
- Yew trees, 176, 236.
poisoning, 176.

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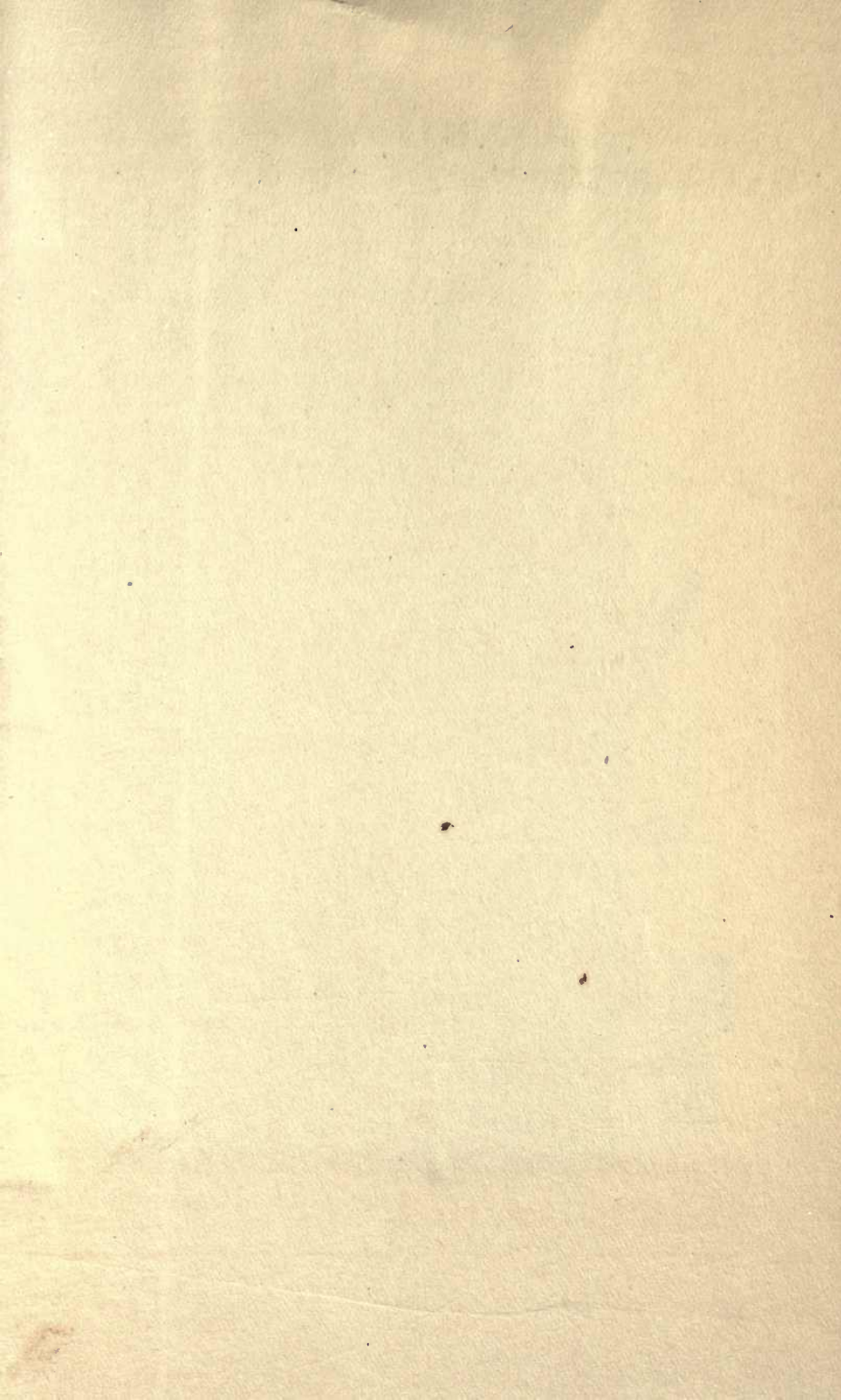
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