





# The Scottish Naturalist

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“The Annals of Scottish Natural History”

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# The Scottish Naturalist

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## NOTES ON THE PRIMITIVE BREEDS OF SHEEP IN SCOTLAND.

By H. J. ELWES, F.R.S.

PLATES I.-III.

THE chief object of these notes is to draw the attention of Scottish Naturalists to a subject which has been very much neglected, and on which our knowledge is very imperfect indeed. No country in the world has a greater interest in sheep than Scotland; no country has produced more distinguished sheep-breeders and shepherds. For 150 years Scottish breeders have been improving the native breeds, and have sent them all over the temperate regions of the world, to improve the flocks of other countries. But though Youatt, Low, and other agricultural writers have written on the breeds which they knew, and Prof. R. Wallace has given an admirable account of improved British breeds, zoologists as a rule have entirely passed by the primitive breeds from which our modern sheep are descended; and so no specimens of domestic sheep have been preserved in museums until quite recently; the collection is very incomplete even in the British Museum, where a hall is now devoted to domesticated animals. I have to thank Prof. Ewart and Mr Eagle Clarke especially for much valuable help, and hope that the deficiencies of these notes may be overlooked.

## THE NATIVE SHEEP OF SHETLAND.

According to Youatt and other writers, the Shetland sheep were originally of Danish or Scandinavian origin, but little if any reliable information seems available on this point; most accounts seem to be based rather on hearsay than on personal knowledge or research.

An exception is, however, to be found in Dr L. Edmonston's *General Observations on Shetland*, 1840, who said: "The sheep is small, not often horned, ears pointed and erect, face, back and tail short, fine-boned, legs long; naturally wild, active, and hardy, and little liable to disease. The colour generally white, sometimes ferruginous, grey, black, or piebald; the wool very soft and often fine. The more damp and moory the pasture, the softer is the wool; one of the causes of which probably is deficient strength and nourishment, another is the astringent nature of the food. A serious casualty affecting the value of a Shetland flock arises from the constant vicinity of precipices facing the sea; and great losses by their falling over the rocks are often sustained.

"No breed can, as a rule, be better adapted to the Shetlands, than those that are native in them, and as they are always in demand, we should do well zealously to cultivate them. All that is necessary is such a sufficiency of food and care as will not encroach too closely on their habits and hardihood, and a persevering selection of the best animals for breeders; yet if premiums had been offered for producing change and degeneracy, it is difficult to imagine a course better calculated to produce them than that which has usually been pursued."

Of the truth of this latter statement I had ample evidence when I visited Shetland in 1911, for, except in some parts of Wales, I have never seen sheep so neglected as on the common grazings of the Shetlands.

H. Evershed, who published a good paper on the agriculture of Shetland in the *Highland Societies' Transactions* about thirty-five years ago, states that the Black-faced breed was able to live and thrive wherever the native sheep



SOAY RAM, THREE YEARS OLD.



could live, and owing to the much higher price of their lambs and the greater quantity of their wool (which at that time was worth twice as much per pound as it now is), they, together with Cheviots, half-breds, and cross-breds, had supplanted the native breed on all the improved land; leaving the native breed only in crofters' hands, on the very worst of the land and common grazings. He quotes Shireff for the fact that the native breed had been much mixed with Dutch sheep, during the time when the fishing was in the hands of Dutch merchants.

He calls it "a straight-horned or goat-like breed, the fleece of wool and hair mixed, weight not over two pounds. Its softness and fineness need not be enlarged on."

Prof. Wallace, in *Farm Live Stock* (1905), quotes the late Q. M. Hamilton, who said that "Youatt's description does not hold quite good for the Shetland sheep of the present day, as the only two islands on which they are really pure are Foula and Papa Stour."

I was not able to visit either of these islands, but have purchased some of the best ewes from Foula this year, which differ in no respect from the light brown sheep (this colour is known as *murret* or *moorit* in Shetland) which I saw in several places, and though the wool of this colour is the most highly priced, on account of its use for shawl-knitting, it does not seem so fine or soft as some of the white wool of North Maveen, neither does it approach in fineness the wool of two specimens of Shetland sheep from Unst, presented in 1871 by T. Edmonston of Balta Sound to the Edinburgh (Royal Scottish) Museum, where they are now exhibited—these are apparently the only specimens of the breed in any museum.

These specimens consist of a hornless ewe, and what I believe to be a wether, with short horns ( $6\frac{1}{2}$  inches long), of the usual wether type, the wool pure white and very fine,  $2\frac{1}{2}$  to 3 inches long on the shoulder. The height of these sheep as stuffed is 22 to 23 inches, the length of body (breast to tail) 26 to 28 inches, the tail very short and broad at the base. This form of tail is considered typical of the breed. I estimated the weight of these sheep, if fairly fat, to have been about 30 lbs. dressed. But the weight of Shetland lambs,

when really well fed, at four to five months old, is said to be sometimes as much as this; and in all these unimproved breeds the growth of the lambs, as long as they are sucking, is remarkably rapid during summer.

As to the sheep of Papa Stour, I only know them from a very diminutive animal, which is stuffed, in the Domestic Animals Gallery of the Natural History Museum in London, labelled as from "Papa, Orkney Islands"; but I am assured by Mr Gerrard, from whom this specimen was procured, that its real habitat was Papa Stour, Shetland. If adult, as it seems to be, this is the smallest sheep I ever saw, and looks more like a freak than a distinct variety (see Plate II., Fig. 1).

During my visit to the islands I saw and learned a good deal about the sheep which now exist, and which probably have without exception some foreign blood, though the hard conditions under which they live tends no doubt to the survival of those which have most Shetland blood in them.

With few exceptions they are kept on the worst lands only, and as the grazings are common to a number of crofters, most of whom are as much fishermen as farmers, there is no selection of rams, some of which remain the whole year wild in the cliffs. About the end of May drives are organised in order to collect as many sheep as possible, for their wool, which at that time is beginning to shed. But as it will not all come off at the same time, the sheep are gathered at intervals of a week or ten days, when the weather is dry, into stone enclosures, when each crofter plucks as much as will come off without force from his own sheep. This practice entails a great deal of hunting with dogs, which must be very injurious to the weak ewes and their lambs. In the beginning of June I saw many sheep which had lost part of their fleece, and a great deal of shed wool was scattered about the hills. It seemed to me that the practice of plucking has been kept up, because there is a distinct break in the growth of the wool, similar to that which takes place in England when sheep have been ailing or starved; and that when the new wool begins to grow again in the spring it pushes up among the old wool. In the majority of the sheep that I examined I could not



see any distinct difference between the hairy outer wool and the fine wool beneath, such as is described by some writers; and neither in dressed skins which I bought at Lerwick, nor in Shetland sheep which I have kept in England, have I found evidence of this difference. The grey coloured sheep (here called "Sheila") seem to have a much longer and coarser fleece, as though crossed with the Black-faced breed, and neither the white nor the black sheep bred in England had fleeces as soft as they are in Shetland. I also found a good deal of kemp in the breech and hind parts of some of the fleeces I examined.

The fine-wool spinners in Unst informed me that as they only require a few ounces of wool for the best quality of shawls, which are worth several pounds, they select only a little of the finest wool from the neck and shoulders, and that for this purpose it was better in North Maben than in Unst or Yell.

This seems to be borne out by the sheep I saw at Lochend, where I bought a half-bred Cheviot, whose fleece was superior in quality, and more than twice as heavy as the fleece of some of the nearly pure Shetland sheep which I got from Mr Gordon in Mid Yell.

Mrs Bruce of Sumburgh, owner of Fair Isle, who keeps a small flock of pure Shetlands and does much to encourage the knitting industry, tells me that it is not necessary to pluck the wool of her sheep, which, however, are much better fed than most crofters' sheep; and I am informed by Mr Kerr, who has charge of a considerable number of Shetland sheep belonging to Mr Stephens in Wiltshire, that he obtains 1s. 9d. a pound for shorn and washed fleeces of moorit-coloured sheep wintered on grass in that county.

With regard to horns, I am not able to say what is the best or the true type of horns in Shetland sheep. Often the rams have none, and these are preferred for their wool by some breeders. Many have short horns; but in a white ram which I bought in Mid Yell the horns formed a complete circle. Some ewes have short, curved horns, but the majority have none, and I never saw any with straight or goat-like horns. A cross with the Black-face produces strong horns,

and in some cases four are found in the rams of this cross. I saw in Mid Yell two rams with four horns, both out of a grey hornless ewe by a Black-faced tup which had again produced a four-horned ram lamb in 1911. I also saw in Mr Haldane's house at Lochend, and at Mr Anderson's of Hillswick, stuffed heads with four horns, very similar to the one I found in Mid Yell.

It seems to me that if some of the landed proprietors in Shetland would give only half the care and attention to the improvement of the native sheep that they have given to Shetland ponies, they might produce a very superior animal to what now exists; for I was told by more than one sheep-owner, that when properly managed the Shetland breed would pay well, as the lambs can be wintered at home with a very little help in winter, which is not generally the case with Black-faced and Cheviot lambs.

#### ORKNEY SHEEP.

Sheep never seem to have been as important here as in Shetland, and I can find little about them in early accounts of the islands.

Low, in *Fauna Orcadensis*, p. 7, speaks of them as follows: "About midsummer there is a particular day published for rowing, when all the men in the parish, attended by their dogs, turn out and drive the whole flock, without any preparation of washing, into narrow pens, where the wool is torn off their backs, an operation which brings the whole blood to their skin, and is not only disgusting, but, if the season proves harsh, is the cause of great destruction. But however cruel this may seem, it is almost the only notice that is taken of these useful animals until the next crop of wool is ready to be plucked."

Probably Low was misinformed about this, for the wool can not, in Shetland at least, all be plucked at the same time, and by midsummer most of it would be already shed or ready to part easily. He goes on to say that the mutton is here in general but ordinary, owing to the sheep feeding much on seaware, to procure which these sheep show a wonderful sagacity, for no sooner has the ebb-tide begun to run, than





FIG. 1.—SMALL SHEEP FROM PAPA STOUR, SHETLAND  
(from stuffed example in British Museum).

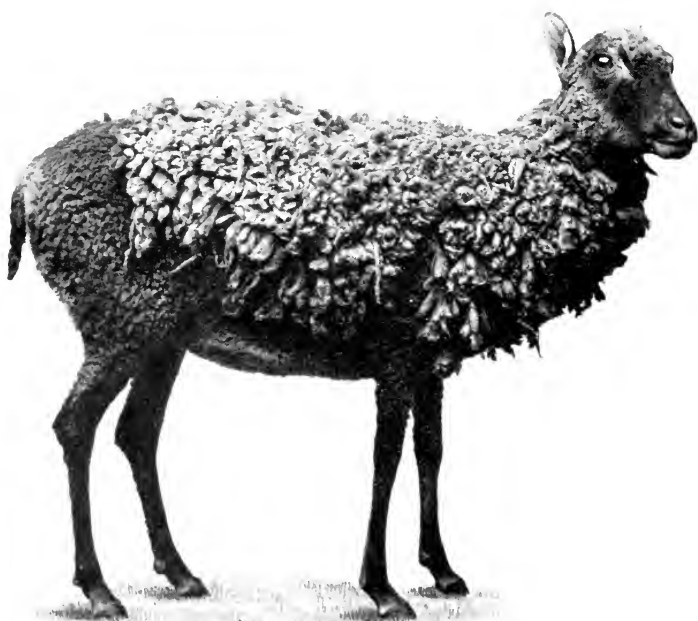


FIG. 2.—SOAY (ST KILDA) EWE, WITH WOOL PARTLY SHED, AND SHOWING  
CHARACTERISTIC SHORT TAIL  
(from stuffed example in British Museum).

they, although at a great distance, immediately betake themselves at full speed one and all to the shore, where they continue until the tide begins to flow, when they as regularly retire. In the old *Statistical Account of Scotland*, vol. xvi., I find that the Rev. R. Sands, minister of Hoy, writing in 1795, says: "About 1000 sheep are kept, which are annually hunted into the rocks by dogs; many lambs killed by eagles, and sheep washed off by high seas when eating seaweed, no care taken of them."

I was informed by Mr Gordon's shepherd in Mid Yell, that he had formerly herded on Hoy, where a flock of the original breed, which he described as a small, black, rough-woolled sheep, were kept, but that these had now all been removed or crossed with Scotch sheep, and no longer exist there in a pure state.

The only islands which now seem to have anything like the original breed are Flotta and North Ronaldshay. Of the former, Mr J. Mackay informed Prof. Ridgway, when staying in Orkney in 1911, that he had kept one of the Flotta breed for fourteen years. When he got it, it was so small that the shepherds disputed whether it was a lamb or full grown. It was full grown, and produced fourteen lambs in the course of thirteen years. Of the Ronaldshay flock he said that there were about 500, which were kept by a high wall surrounding the island from trespassing on the good land, and were confined to the cliffs, where there is little to eat, so that they subsist mainly on the seaweed which they get at low water.

I have now procured a pair of these sheep through the help of Mr Duncan Robertson, factor for the owner of the island. They stand about 18 inches at the shoulder, and are characterised by long, slender limbs, a fine head, and a short tail. The male (Plate III., Fig. 1) has a fringe under the throat, as in the Soay breed, and horns which curve backwards between the ears, as in the Bündnerschaf of Switzerland. These Ronaldshay sheep may have in part sprang from *Ovis aries palustris*, the Bronze Age race with goat-like horns.

The fleece of these sheep is white, brown, or spotted, but the wool, though fine, is very inferior to the best Shetland.

(*To be continued.*)

## SOME NEW SCOTTISH AND BRITISH BIRDS.

ON THE OCCURRENCE OF THE PINE BUNTING, THRUSH NIGHTINGALE, AND BAIRD'S SANDPIPER IN SCOTLAND.

By WM. EAGLE CLARKE.

PINE BUNTING (*Emberiza leucocephala*) AT FAIR ISLE.—On the 30th of October last, Mr Wilson, the bird-watcher at Fair Isle, found this bird among a rush of migrants, and knowing that it was a stranger, secured it and sent it to me for identification. It is a male in full winter plumage, in which stage the brilliant chestnut on the head, throat, and neck are masked by the white tips to their feathers. In spring these tips are shed, and reveal the bird as one of the handsomest of Buntings.

The Pine Bunting is a native of Siberia, from the Ural to the Amoor, and winters in North China, Mongolia, Turkestan, and the Himalayas. It is only a straggler to Europe—Austria, Turkey, Italy, the south of France—and has once occurred at Heligoland, namely, on the 16th of April 1881. It has never before been known to have visited the British Isles.

In its native haunts it is found on the borders of pine woods and bush-covered country and fields. Its nesting habits and eggs are similar to those of our familiar Yellow Bunting, which it also resembles in coloration of its mantle, lower back and upper tail coverts.

The Scottish specimen has the crown and nape whitish and much streaked with grey; mantle and scapulars a mixture of greyish buff and rufous streaked with black, especially on the middle of the back; lower back and upper tail coverts rufous, the latter edged with white; primaries blackish, narrowly edged with white; secondaries and wing coverts with black centres, rufous bands, and white fringes; lores, band over eyes to side of neck,—checks, throat, and chest chestnut margined with white, which more or less conceals the rich underlying tint; ear coverts dusky, with a central band

of greyish white which extends to the gape ; an inconspicuous white patch on the throat, the feathers having grey margins ; abdomen white ; flanks white streaked with pale brown ; tail blackish, narrowly edged with white, the two outer pairs of feathers with the terminal portion of the inner web chiefly white. Feet yellowish grey. Wing 3.65 ins.

THRUSH NIGHTINGALE (*Luscinia luscinia*) AT FAIR ISLE.—This was one of the rarities which rewarded us during our visit to Fair Isle in the spring of 1911. This waif arrived in company with a crowd of birds of passage (of which no less than twenty-four species came under notice) on the 15th of May 1911. It was observed seeking food among the rocks at the foot of a cliff behind the south lighthouse.

The summer range of the "Sprosser," as it is sometimes called, extends from Denmark to south-western Siberia, and its winter retreats are in eastern Africa. There is one previous record for the occurrence of this bird in Britain, namely, one obtained at Smeeth, in Kent, on 22nd October 1904 ; but this has hitherto been regarded as unsatisfactory.

This species differs from the Common Nightingale, in having the upper plumage darker and of a more olive tint ; the tail dark brown with only a slight reddish tinge ; the feathers of the chest and sides of the breast darker, with light edgings and basal shaft spots, which give these parts a mottled or clouded appearance. In addition, the first primary is shorter and narrower, and is much shorter than the primary coverts ; while the third primary is the longest, and the second generally equal to the fourth. It is a larger bird than its congener, the wing measuring 3.6 ins.

BAIRD'S SANDPIPER (*Tringa bairdi*) AT ST KILDA.—This was one of the rarities that fell to my lot during my recent visit to St Kilda. On the 28th September 1911, a small Sandpiper was observed wading and swimming in a pool in the rocks fringing the Village Bay. It was shot on suspicion that it was something uncommon, and proved to be an adult female, in full winter plumage, of this North American species—one which had only been known to visit the British Isles on two previous occasions, but had not

hitherto been detected in Scotland. Baird's Sandpiper summers on the Arctic coast of America between Bering's Straits and Hudson's Bay, and winters in Chili, Argentina, and Patagonia. In this specimen the head and hind neck are pale ashy brown, streaked with dusky, broadly on the crown; feathers of the mantle, scapulars, lower back, secondaries, and wing coverts dusky brown, with darker centres and white edges; primaries, upper tail coverts, and tail dusky brown, the outer feathers of the latter paler and edged with white; chin and throat white; chest and sides of the breast pale ashy brown tinged with buff, and slightly streaked and spotted with dusky brown; remainder of under surface and axillaries white. Legs black. Wing 4.9 ins. Bill 0.9 in.

It has been considered desirable to describe these birds, as no description of them is to be found in any works devoted to British birds. The plumage of Pine Bunting and Baird's Sandpiper is that in which they are most likely to occur as visitors to our islands.

#### ON THE OCCURRENCE OF THE WOODCHAT SHRIKE IN FORTH AREA.

By LEONORA JEFFREY RINTOUL, H.M.B.O.U., AND EVELYN  
V. BAXTER, H.M.B.O.U.

BY the kindness of Mr Baigrie, assistant light-keeper on the Isle of May, we are enabled to record the first authenticated occurrence of the Woodchat Shrike (*Lanius senator senator* = *L. pomarinus* of Saunders, etc.) for Scotland. A bird of this species was taken at the lantern by him at 2 A.M. on 19th October 1911, and sent to us. The wind had been easterly for several days, and a great many birds had arrived on the island. It is a young bird, mainly in the dress described by Dr Hartert as the "nest-kleid." This species breeds in north-western Africa and southern Europe. In the north its breeding range extends as far as Belgium and Holland, and it breeds locally in Germany; it also nests in southern Russia and Asia Minor. It occasionally strays to England, and



has twice bred in the Isle of Wight. It winters in Senegambia, Haussaland, and Nigeria, and has been recorded from Teneriffe. There is no previous authenticated record of the Woodchat Shrike in Scotland. It is mentioned in Don's Forfarshire list of 1813, but without any data, and has therefore only been retained on the Scottish list in square brackets. Our identification of the specimen was confirmed by Mr Eagle Clarke, and we have presented it to the Royal Scottish Museum. The following is a description of the plumage of this interesting visitor:—Crown of the head and upper surface generally white or greyish white barred with black, and with rufous spots on the nape and sides of the neck; scapulars dull brown; primaries and secondaries brownish black, lighter at the tips; lower half of primaries and of the secondaries and their coverts edged externally with pale rufous buff; basal half of the outer web of the primaries white, forming a narrow wing bar; primary coverts edged with white; centre tail feathers brownish black, outer ones dull grey on the outer web and tips, greyish brown on the inner web; under surface dull white, the feathers on the chest and flanks with narrow penultimate bands of black.

#### SERIN FINCH (*Serinus serinus*) IN MIDLOTHIAN.

By OLIVER H. WILD.

ON 9th November 1911, an adult male Serin Finch in full winter plumage was captured in the southern suburbs of Edinburgh by some bird-catchers. It was in company with Lesser Redpolls, and is the first known instance of the occurrence of the species in Scotland. I have presented the specimen to the fine collection of British birds in the Royal Scottish Museum.

ON THE OCCURRENCE OF *SYMPETRUM FONSCOLOMBII* (SELYS)—A DRAGON-FLY NEW TO THE SCOTTISH LIST—IN THE FORTH AREA.

By WILLIAM EVANS, F.R.S.E.

WHEN, a year ago, I published in the *Annals of Scottish Natural History*, my paper on Scottish Dragon-flies, I little dreamt that I should so soon be in a position to add another species to the list. But again the unexpected has happened. The new claimant for a place on the list is not a recognised native of these islands, but that wanderer from the south on which de Selys-Longchamps, in 1840, bestowed the name *Libellula fonscolombii*—the *Sympetrum fonscolombii* (Selys) of modern systematists. Three examples of this striking insect were captured in the Forth area last summer, on 30th July, 11th August, and 17th August respectively. Others were seen along with those taken on the first and the last of these dates; and there can be no doubt our district was visited by part of a migratory flight, probably from southern Europe. The simultaneous occurrence of a considerable number in the south of England (Hampshire), as recently announced by Mr W. J. Lucas,<sup>1</sup> was quite likely another manifestation of the same migration.

The first of the Forth specimens to be recognised was a female captured by myself on the Isle of May, at the mouth of the Firth of Forth, on 17th August 1911. About 6.30 P.M., a few hours after landing on the island, I entered for the second time the large garden below the principal lighthouse-keeper's house, and there to my surprise saw a very red medium-sized Dragon-fly hovering and darting in the sunshine over some potato drills. It was a strong flier; and, after "hawking" without intermission for two or three minutes, it suddenly disappeared over the wall without having given me a chance to use the net, though once or twice it hovered just beyond striking distance. Having waited

<sup>1</sup> Cf. *Ent. Mo. Mag.*, November 1911, p. 267.

about the spot for an hour vainly hoping it would return, I moved to a potato patch farther up the garden, and, as luck would have it, there met with another Dragon-fly, much duller in colour than the first, but otherwise very similar. Though displaying the same activity when on the wing, its flight was—perhaps owing to the later hour—less sustained than that of the other, and several times it settled on the ground, only, however, to dart off again on being approached. In the failing light there was difficulty in keeping it in sight; but in the end, at a quarter to eight o'clock, I succeeded in getting the net over it as it clung to the top of a weed. Two days later, in the belief that it was a female of *Sympetrum fonscolombii*, I showed it to Mr K. J. Morton, who confirmed my supposition; and there is no doubt the one I first saw was a male of the same species. On 13th September a red Dragon-fly was observed near the south end of the May by Miss Baxter, as I learned from her on landing the following day; but it passed out of sight in a few seconds, and was not again seen. Next, I heard from Mr P. H. Grimshaw that a Dragon-fly which had been caught by a boy in Easter Road, Edinburgh, on 11th August, and brought to the Royal Scottish Museum, had turned out to be another female *fonscolombii*. Finally, in November, when naming a box of insects for Mr J. W. Bowhill, I was delighted to recognise a fine male which had been taken near Aberlady, on 30th July; it was captured by himself shortly after noon, in a hollow among the coast sandhills, and he tells me there were others, probably not less than half a dozen, along with it—he saw four on the wing at one time—but their movements under the influence of the strong sun were so quick that he failed to secure more than the one.

In Europe, *Sympetrum fonscolombii* is a native of the countries bordering on the Mediterranean, occurring, so far as is known, north of the southern half of France only as a migrant or wanderer; while in Africa it is distributed, according to Dr Ris,<sup>1</sup> as far as the Cape of Good Hope, and in Asia as far as Cashmere and the Nilgherries. Prior to 1911,

<sup>1</sup> *Die Susswasserfauna Deutschlands*, Heft 9, Odonata, 1909, p. 38.

when as already mentioned several were taken in Hampshire in August, there were only 22 properly authenticated and localised British specimens, of which no less than 17, all males, were taken at one locality in Surrey in June 1892, the others being from Kent (1881), Cornwall (June 1903), Hertfordshire (June and July 1908), and Surrey (September 1908).<sup>1</sup> On the Continent the furthest north locality mentioned by Ris is Mecklenburg. The recent extension of its flight into Scotland is, therefore, an event of very considerable interest.

From *Sympetrum striolatum*, a not uncommon species in many parts of Scotland, to which, more especially in the female, it bears a strong superficial resemblance, *S. fonscolombii* is separated by well-marked structural characters. In the female, for instance, the vulvar scale is, as described by de Selys, deeply notched—almost bilobed, whereas in *striolatum* it is only slightly notched. A peculiarity which struck me in the specimen I caught was the grey colour of the lower half of the eyes; after death, however, this soon changes to black. The saffron tint at the base of the hind wings is likewise a good mark of distinction, as is also the reddish (not black) nervures and pterostigma; but these points and the blood-red colour in the male are only seen to advantage in living or newly-killed examples.

In a paper I wrote some years ago on the Odonata of the Forth Area,<sup>2</sup> I alluded to the appearance of a bright red Dragon-fly on a tramway car at Bruntsfield, Edinburgh, in July 1901. Perhaps it was a pioneering *fonscolombii*!

My thanks are due to Messrs Grimshaw and Bowhill for allowing me to record their specimens along with mine, and to Mr Morton for assistance in a variety of ways.

<sup>1</sup> Cf. E. B. Speyer, *Proc. Ent. Soc. Lond.* for 1908, p. 55; and W. J. Lucas, *ibid.*, 1909, p. 65.

<sup>2</sup> *Proc. Roy. Phys. Soc.*, xvi., p. 88, 1905.

## NOTES

**Jackdaw nesting in Squirrel's Drey.**—Cases of Jackdaws building nests in the branches of trees have been not infrequently recorded; and such instances are of common occurrence in Newliston Woods in this neighbourhood. The sites chosen by the birds are principally the thick intertwining branches of lime-trees, at no great height from the ground. Last summer, however, what appears to be a more remarkable case came under my notice—that of a pair of Jackdaws which had made choice of an old Squirrel's drey in the top branches of a tall, tapering spruce. The drey, when examined, was found to contain two young birds. The old birds obtained entrance through a large hole in the side of the structure, and they had made no addition to the comfortable lining provided by the Squirrels, beyond one or two scraps of paper and wool.—S. E. BROCK, Kirkliston.

**Richard's Pipit and Lapland Bunting at Fair Isle.**—Whilst staying on Fair Isle on 6th October, I shot a male Lapland Bunting (*Calcarius lapponicus*). On the same day I received word that there were two strange Pipits on the grassland above the cliffs. They were so wild that, though I walked after them for over four hours, I was unable to get within shot. The following morning I again went to look for them, and after another hour's walking shot one as it flew over my head. It proved to be a young Richard's Pipit (*Anthus richardi*). The plumage of the upper parts was much darker than that of the adult bird.—M. BEDFORD, Woburn Abbey.

**Greater Wheatear at Barra in November.**—It may, perhaps, be interesting to record that on the 17th November I shot a Greater Wheatear (*Saxicola leucorrhoa*) on the Island of Barra, Outer Hebrides. The wing measured 103 mm. Another was seen on the 20th November, at the same place. The dates are late for this bird's presence on passage in the British Isles.—M. BEDFORD, Woburn Abbey.

**Montagu's Harrier in Roxburghshire.**—An immature male Montagu's Harrier (*Circus cineraceus*), a species which has rarely been detected as a visitor to Scotland, was shot during the latter part of August, at Newlands, Newcastleton, and has been presented by C. H. B. Caldwell, Esq., of Windlesham, to the British Bird Collection in the Royal Scottish Museum.—P. L. WALDRON, North Berwick.

**Honey-Buzzard in Wigtownshire.**—A fine female Honey-

Buzzard (*Pernis apivora*) has forfeited its liberty through a singular misadventure. The reservoir for the supply of W. J. C. Cuninghame's home-farm of Dunragit, Wigtownshire, having, like most other reservoirs in this abnormal season of 1911, fallen low, a breadth of mud was laid bare in September, sticking in which, and unable to extricate herself, was the bird aforesaid. Probably she had gone there in search of frogs or such-like. She is a bird of the year, but about full-grown. I would have pled for her release, were it not certain that a fowl of such warlike mien would inevitably be destroyed as "vermin" by some undiscerning keeper. In fact, I fear that I have failed to persuade her captor that a meat diet is not what suits the Honey-Buzzard. When I told him that the late Lord Lilford invariably failed to keep Honey-Buzzards alive through the winter until he put a pair of them on a diet exclusively of bread and milk (which he found they actually preferred to their common fare of wasp-grubs), I was met by an incredulous grin, and a sarcastic inquiry whether I supposed the Almighty had given this bird her formidable beak and talons to sup milk withal!

It would be vain to plead for protection to Honey-Buzzards, for, although no bird of prey is more innocent of injury to game, its unfortunate resemblance to fiercer birds of ravin is tantamount to a death-warrant. If it were possible to get them spared, they would no doubt breed regularly in this country.—HERBERT MAXWELL, Monreith.

**Grey Phalarope in Ayrshire.**—It may be of interest to record that I got a male Grey Phalarope (*Phalaropus fulicarius*) at Girvan on 7th November last. It seems to have been blown ashore during the very strong N.W. gale on the previous Sunday, and was picked up in a dying condition by a lad, in a field near the shore. The only other record for the Carrick shore, so far as I can find out, was a male on 9th October 1904.—GIB. GRAHAM, Girvan.

**The Wood-Sandpiper in South-east Fife (Forth).**—With reference to Mr Berry's note in the *Annals* for October last (1911, p. 248), I ought, perhaps, to record that I have in my collection a Wood-Sandpiper (*Totanus glareola*) which was killed near Anstruther in April 1895.—WILLIAM EVANS, Edinburgh.

**Blue Shark in Forth.**—When walking along the shore in Largo Bay, on 1st November, I found a Blue Shark (*Carcharias glaucus*) lying dead, very near the place where we found a fish of this species in December 1910 (*Annals Scot. Nat. Hist.*, 1911, 56). I estimated its length at 6 ft.; it seemed in quite good condition.—EVELYN V. BAXTER, Largo.

**Tychus niger**, Payk., in **East Lothian**.—As the only record of this little beetle for the Forth area is now nearly eighty years old, and there are but two or three altogether from Scotland, the capture of a specimen (♂) at Gifford, East Lothian, on 2nd November 1911, is of considerable interest. The sight of some patches of moss at the edge of a wood suggested to Mr K. J. Morton, who was with me, the possibility of finding a certain rare Neuropteron, and it was upon shaking a handful of this moss over a newspaper that I detected the *Tychus*. In Wilson and Duncan's *Entomologia Edinensis*, 1834, we find (Addenda, p. 340) the entry, "*Tychus niger*, Braidhills"; while in Murray's *Coleoptera of Scotland*, 1853, the only record is "Raehills, Rev. W. Little." Sharp for some reason did not include the species in his Scottish list, which accounts for the remark, "it does not appear to occur in Scotland," in Fowler's book. It has since, however, been reinstated as a Scottish insect (from Ayrshire and Paisley) by Mr Anderson Fergusson, in the *Annals Scot. Nat. Hist.* for 1896.—WILLIAM EVANS, Edinburgh.

**Linlithgowshire Heteroptera**.—Since recorded Scottish localities for Heteroptera are not very numerous, and as very few species have yet been reported from this county, the occurrence of the following less common species may be worthy of mention:—*Phytocoris dimidiatus*, Kbm.—Kirkliston and Clifton, on oaks. *Phytocoris pini*, Kbm.—Kirkliston, on Scots-pine. *Dichroscytus rufipennis*, Fall.—Kirkliston, on Scots-pine. *Dicyphus epilobii*, Reut.—Hopetoun and Kirkliston, on *Epilobium hirsutum*. *Dicyphus pallidicornis*, Fieb.—Kirkliston, on *Digitalis purpurea*. *Actorhinus angulatus*, Fall.—Lochcote Marsh, on *Salix*. *Cyrtorhinus caricis*, Fall.—Lochcote Marsh. *Macrocoleus hortulanus*, Mey.—Hopetoun, on *Ononis*. *Phylus palliceps*, Fieb.—Kirkliston, on oaks. *Corixa geoffroyi*, Leach—Humbie Reservoir, Niddrie Burn, etc. *Corixa sahlbergi*, Fieb.—Niddrie Burn, Birdsmill, etc. *Corixa distincta*, Fieb.—Humbie and Kirkliston Reservoirs, etc. *Corixa carinata*, Sahlb.—Canal near Winchburgh.—S. E. BROCK, Kirkliston.

**Recurrence of the rare Crab, *Paromola cuvieri*, in Scottish Waters**.—Since the first authentic Scottish record of this giant amongst British Crabs was noted in the *Annals* a couple of years ago (*Annals Scot. Nat. Hist.*, 1910, p. 12), three specimens have been found in the deep water to the west of the British Isles. Two of these were obtained by a trawler far off the south-west of Ireland (Calman, *Irish Nat.*, 1911, p. 75), but the third is a northern specimen, and is the second from the neighbourhood of north-west

Scotland. It was captured alive by the steam liner *Caledonian*, near the Flannan Isles, in June 1910, and is now in the collections of the Royal Scottish Museum.—JAMES RITCHIE, Royal Scottish Museum.

**Notes on Hydracarina.**—Workers in this group of Invertebrates may be interested to learn that the first part of a report on the Hydracarina of northern Sweden, by Dr C. Walter, Basel, has just come to hand (*Naturwissenschaftliche Untersuchungen des Sarekgebirges in Schwedisch-Lappland*, Bd. iv., pp. 587-612, Taf. 8-9, Friedländer, Berlin). In addition to describing several new species from this northern region, the previously unknown nymphs of *Huitfeldtia rectipes*, Sig Thor, and *Sperchon longirostris*, Koen., are described in detail. The characters are here reproduced for the benefit of British workers:—*Huitfeldtia rectipes*, Sig Thor.—This species has until now had a very limited range, being recorded only from Norway and the Orkney Islands. The finding of nymphs of *H. rectipes* in the north of Sweden extends the recorded distribution. Up to this time only the male and female were known. According to Dr C. Walter (*Naturw. Untersuch. des Sarekgebirges*, Bd. iv., p. 602), the nymph possesses the following characters:—Length from 0.6 mm. to 0.7 mm.; breadth, 0.5 mm. to 0.55 mm. Palpi scarcely any thicker than the basal segments of first pair of legs, and possessing the same characters as the imago, e.g., the strong outwardly directed bristle on the third segment, the two slender hairs on the flexor surface of the fourth segment, with its chitinous peg on the distal inner end. The epimera and legs also resemble those of the imago. The provisional genital area appears to be similar to that of the nymphs of the genus *Piona*, and consists of two small plates, each with two acetabula and two or three fine hairs. Between the plates, which are inclined to each other at the anterior end, there is a small chitinous body. The so-called anus lies nearer to the posterior margin of the body, between two gland pores. *Sperchon longirostris*, Koen.—This species, which also occurs in the Britannic area, has a wider distribution than the foregoing. Walter (*loc. cit.*, p. 590) describes the nymph from material brought also from the north of Sweden. The outline is a broad oval, without any lateral indents; length about 0.57, and breadth about 0.51 mm. Between the eyes, which lie on the body margin, the anterior portion of the body is slightly inflated and then flattened; slender antenniform bristles are to be found here. The skin is closely covered with rounded papillæ, while the area round the gland pores is very slightly chitinised. The rostrum and mouth



organs appear to possess all the characteristics of the imago. On the extensor surface of the second segment of the palpi a few hairs are to be found, while the flexor surface possesses the thin conical peg with its chitinised apex. The short fifth segment ends in two curving claws, surrounded by a number of hairs. The provisional genital area has four acetabula protected by two plates, bearing a few hairs on their margins.—WILLIAM WILLIAMSON, Edinburgh.

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## GLEANINGS.

It is with genuine regret that we refer to the death, already recorded in many British journals, of Mr G. H. Verrall, the eminent dipterist, which took place on the 16th September last. Students of British Diptera have suffered a severe loss in the decease of their chief, who was only spared to complete two of the proposed fourteen volumes of his monumental work on *British Flies*. These exhaustive volumes appeared in 1901 and 1909 respectively, and deal with probably the most generally attractive families. It will, we fear, be many a long year before anyone takes up the work so thoroughly begun by Verrall, whose reputation was world-wide.

We are glad to notice, in the *Annals and Mag. Nat. Hist.* for December (pp. 770-777), an article giving the results of a vote taken in Scandinavia regarding the strict application of the rule of Priority in Zoological Nomenclature. A criticism is given of the methods adopted by the secretary of the International Commission, for obtaining lists from zoologists of names which should be exempted from the rule. It is pointed out that the time allowed for the preparation of the suggested list of 50 generic names (chosen by each zoologist independently) was totally inadequate, and hence the apparent lack of interest in the matter is not surprising. The vote in Scandinavia is of much interest—120 names are recorded *against* the strict application of the rule, thus allowing the most important and generally used names to be protected against change, while only 2 are in favour of a rigid adherence to the law. We congratulate our neighbours across the North Sea on taking such a wise decision. It is interesting to learn that the Committee recently appointed by the British Ornithologists' Union to prepare a new list of British Birds are of the same opinion.

An amusing letter appeared in a recent issue of a local evening paper, entitled "An Extraordinary Bird Record." It ran as

follows:—"I write to ask if you will find space to make known an interesting discovery. I have in my possession a dead starling and cock-sparrow, both with rings on their legs, marked, the starling, Aberdeen University, '69; the sparrow, Aberdeen University, '79. . . . I hope this will come under the eye of the student that fixed those rings forty-two and thirty-two years ago. It is difficult to account for the singular coincidence of the birds' migrating so far and dying about the same time so near to each other. It would be interesting to know the age limit of the little feathered Aberdonians." If the writer of this letter keep a sharp look-out he may come across the bird numbered 1066, which presumably migrated with William the Conqueror!

Thomas Parkin, in an extra paper to Part 6 of Vol. I., *Hastings and East Sussex Naturalist* (1911), gives a useful and interesting record of sales of specimens of the Great Auk and its eggs, from the years 1806 to 1910 inclusive. Complete histories, so far as known, are given of 5 birds and 18 eggs, including 1 bird and 2 eggs now in the Royal Scottish Museum. The highest price ever paid for a bird appears to be £350, and for an egg £330, 15s. The number of specimens in existence is stated to be 80 skins and 73 eggs.

The Long-tailed Duck (*Harelda glacialis*) is reported by O. V. Aplin (*Zoologist*, November 1911, p. 432) to have bred in Orkney during the summer of 1911.

A Little Crake (*Porzana parva*) was seen near Loch Scamadale, Argyll, on 29th September 1911. The bird was caught and examined.—*The Field*, 7th October 1911, p. 825.

Two Rock Thrushes (*Monticola saxatilis*), ♂ and ♀, were procured at Pett, Sussex, on 1st and 2nd September. This is the first record for Sussex, and the first time this species has been obtained in Britain in autumn.—H. W. FORD-LINDSAY, *British Birds*, vol. v., p. 130.

A small flock of Slender-billed Curlews (*Numenius tenuirostris*) were seen on Romney Marsh, Kent, towards the end of September 1911. Of these, three were shot, two on the 21st and one on the 23rd. The Slender-billed Curlew has not previously been obtained in Britain.—M. J. NICOLL, *British Birds*, vol. v., p. 124.

A Slender-billed Nutcracker (*Nucifraga caryocatactes macro-rhynchus*) is recorded by Mr Edwin Hollis in *British Birds* (vol. vi., p. 167). It was obtained on 7th August 1911, at Whitchurch, near Aylesbury, and submitted to Dr Hartert, who pronounced it to be of the Siberian race.

Her Grace the Duchess of Bedford records a large number of Sooty Shearwaters (*Puffinus griseus*) off the west coast of Ireland, between Eagle Island and Black Rock, on 17th August 1911. On returning to the same place next day, she found that they had all passed on.—*British Birds*, vol. v., p. 141.

A fine adult male Woodchat Shrike (*Lanius senator senator*) was obtained at Winchelsea on 25th July 1911, and examined in the flesh by Mr Ford-Lindsay, who also records a pair of Caspian Plovers (*Aegialitis asiaticus*) which were shot on Romney Marsh on 13th July.—*British Birds*, vol. v., pp. 111, 115.

Mr J. B. Nicholls records a White-spotted Bluethroat (*Cyanecula cyanecula*) which was obtained at Pett Level, Sussex, on 17th May 1911, and refers to one previously recorded which was got at the same place on 15th May.—*British Birds*, vol. v., p. 106.

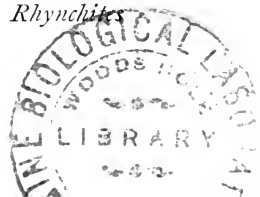
The first identified British example of the Continental Blue Tit (*Parus cæruleus cæruleus*) was exhibited by Mr Bonhote at the June meeting of the British Ornithologists' Club (*Bull. B. O. C.*, vol. xxvii., p. 101). It was obtained in Peeblesshire some years ago. No locality nor date was given.—*British Birds*, vol. v., p. 109.

The return of the Bittern (*Botaurus stellaris*) to Norfolk, and the finding of the nest and one of the young is recorded by Miss E. L. Turner in *British Birds*. The young Bittern was discovered in a wide stretch of reed-bed on 8th July 1911; it was judged to be between four and five weeks old. On 17th July, when an organised search was made, the nest was found about a dozen yards from where the young bird was first seen.—*British Birds*, vol. v., p. 90.

In the *Irish Naturalist*, 1911 (pp. 149-152), Mr R. J. Ussher gives an interesting account of the discovery of the Fulmar (*Fulmarus glacialis*) nesting on the north coast of Mayo, Ireland. This is a very important record, as it is the first time this bird has been recorded as a breeding species for Ireland.

Two new British species of Microlepidoptera are described by J. H. Durrant (*Ent. Mo. Mag.*, November 1911, pp. 251-252). One (*Rhyacionia logæa*, sp. n.) is Scottish, having been taken at Forres on several occasions.

In the *Entomologist's Monthly Magazine* for December (pp. 269-270) Norman H. Joy describes two beetles new to science. These are *Bledius scecerdendus*, from Dovercourt (Essex), Dawlish (Devon), Tresco (Scilly Islands), and Cloghane (Kerry); and *Rhynchites harwoodi*, from the neighbourhood of Bradfield (Berks).



*Atheta liliputana*, Bris., a beetle new to the British fauna, is recorded and described by Malcolm Cameron in the *Entomologist's Monthly Magazine* for October last (pp. 223-224). Five examples were taken near Brockenhurst (Hants) in May and June. A table is given of the British species of the genus.

At a meeting of the Entomological Society of London, held on 18th October, H. St J. Donisthorpe exhibited specimens of *Lesteva luctuosa*, Fauvel, a species of beetle new to Britain, from the Isle of Eigg, taken on 17th September.

To the British list of Saw-flies the Rev. T. D. Morice adds (*Entomologist's Monthly Magazine*, October 1911, pp. 227-229) *Periclista pubescens*, Zadd. A single ♀ was swept or beaten from oak leaves at Porlock (Somerset) on 28th April.

The Rev. James Waterston records (*Ent. Mo. Mag.*, October 1911, p. 236) the occurrence of the Mallophagous parasite *Nirnmus uncinosus*, N., on a *Corvus cornix* shot in North Mavine, Shetland.

In the *Entomologist's Monthly Magazine* for October (pp. 225-226) a very useful paper is given by Malcolm Burr, on our British *Dermaptera* (Earwigs), accompanied by a well-executed coloured plate of all the species.

An important paper on the "Slipper Limpet or "Boat Shell" (*Crepidula fornicata*), by Dr James Murie, appears in the November number of the *Zoologist* (pp. 402-415), accompanied by two plates. This mollusc is an American species, whose recent introduction into British waters is supposed to have a deleterious effect on oysters. Particulars are given of the discovery of this troublesome limpet on the east coast of England, in certain portions of which the species appears to have become thoroughly established. Further inquiries and research are recommended in order to cope with the evil.

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## BOOK NOTICES.

A FAUNA OF THE TWEED AREA, by A. H. Evans. Edinburgh: David Douglas, 1911; price 30s. net.

The Fauna of Tweed forms the tenth volume of the series of the Vertebrate Faunas of Scotland which we owe to the initiative of

Messrs Harvie-Brown and Buckley. Many areas have been treated of, but "Tweed" was one of the few remaining desiderata—an important one too, for it is the only volume dealing with the Fauna of south-eastern Scotland.

Tweed is an attractive and diversified area—embracing highlands, lowlands, fine river valleys, and a varied coast-line extending from St Abb's Head to and including the well-known Farne Islands. Mr Evans is to be congratulated on having completed a most useful and interesting piece of zoogeographical work, which is in every respect up to the standard of the best of its predecessors in the series. From his researches we learn that the vertebrates included within the scope of the work amount to 45 mammals, including species extinct within the historic period; 263 birds, counting doubtful records; 3 reptiles and 5 amphibians. We regret that the freshwater fishes have been omitted, for the Salmonidæ of the Tweed basin are especially interesting, and a summary of the views held regarding them would have been most acceptable. We are glad, however, to hear that the author is preparing such a list for publication. As regards the birds, we do not find much about their migrations, and yet there were voluminous data available, for the Farne Islands furnished much information to the British Association Committee for the years 1880 to 1887 inclusive. The introduction, bibliography, and topographical description are excellent, and add greatly to the value of a handsome and acceptable volume. The illustrations are numerous, and beautifully reproduced, and the general get up, like that of the rest of the series, leaves nothing to be desired.

THE LIFE OF THE COMMON GULL TOLD IN PHOTOGRAPHS, by  
C. Rubow. London: Witherby & Co., 1911; 1s. 6d. net.

This book is composed of series of photographs which depict the life of the Common Gull (*Larus canus*). It is impossible to speak too highly of these nature-pictures, which afford such excellent peeps at the varied life-phases of this well-known bird. The text supplies a readable little sketch of its habits, and supplies in writing what cannot be expressed in the pictures. The book is a welcome addition to an already remarkable series.—G. G. M.

LIFE IN THE SEA, by J. Johnstone; and PRIMITIVE ANIMALS, by  
Geoffrey Smith, M.A. Cambridge University Press (*The Cambridge Manuals of Science and Literature*); price 1s. each.

The first of these little manuals differs in point of view from the majority of the accounts of marine life. Here there is no

attempt at describing the individual inhabitants of the ocean, but a broad survey is taken of the fundamental forces of nature which control life under the waves. In discussing the influences of the periodic changes in the sea, and the factors of distribution, the food and feeding of its inhabitants, the author puts into our hands keys which unlock many fascinating mysteries—such as the migration of herring, the hibernation of flat-fishes, the pulses of marine life. The book aims at and ought to reach the reader who wishes to understand the deep, underlying principles of oceanic life.

The second volume, an equally original treatise, gives a short but well-written account of modern ideas on the relationships of the main groups of the animal kingdom, their origin and evolution, and the facts presented by embryology and comparative anatomy in evidence thereof. Naturally, the attempt to deal with such important subjects within the compass of 150 small pages proves to be anything but light reading, but the eight chapters are skilfully written, while the 25 carefully chosen illustrations will prove helpful to those unversed in biological technicalities.

THE LIFE OF CRUSTACEA, by W. T. Calman, D.Sc. ; pp. xvi. + 289, with 32 plates and 85 figures. Methuen & Co. ; price 6s.

Of the long-desired volumes dealing at large with the crabs and lobsters, and their many relatives, this is certainly that which will most attract the general reader. For once the dry bones of structure, as such, are laid gently to rest, and we view this wonderfully diverse group from the point of view of life and adaptation to living.

The majority of the Crustacea are so little known that few indeed have received the hall-mark of currency, a popular name; but in spite of this handicap, Dr Calman has no difficulty in filling his pages with entrancing reading. In turn, the inhabitants of the shore, the deep, the open sea, freshwater, and the land are gathered together, and their habits studied in the light of their environment. So the consideration of their relationships to each other, to other animals, and to man gives opportunity for the introduction of facts of great interest. The many plates and abundant text figures are remarkable for their excellence, and there is a good index. Two slips have come under our notice: in the penultimate line of p. 12, read *epipodite* for *exopodite*; and in the Index "respiratory siphon of *Albunea*" is under "antennæ" instead of "antennule." The success of this volume ought to induce experts in other groups to review their subjects from some such vital standpoint as is here adopted.—J. R.

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[FEBRUARY

## NOTES ON THE PRIMITIVE BREEDS OF SHEEP IN SCOTLAND.

By H. J. ELWES, F.R.S.

PLATES I.-III.

(Continued from page 7.)

### SOAY SHEEP.

MILLAIS, in his work on the *Mammals of Great Britain*, points out that the sheep on the small island of Soay, near St Kilda, are quite distinct from "four-horned" Hebridean sheep. As Millais says, Soay sheep have all the habits and appearance of a wild sheep, and when galloping look much like Moufflon. Their short tails, hairy throat and mane, and general markings all suggest Moufflon parentage. Sir Claude Alexander has proved that they breed freely with both Moufflon and with the wild Urial (*Ovis vignei*) of the Punjaub, and my short experience of them convinces me that they retain more of the habits of a wild animal than any other breed I have kept.

When we consider their habitat this is not surprising, for all they know of man is that once or twice a year at most they are hunted down with dogs, and the little wool they have is pulled from their backs. For the rest of the year they are as wild as the sea-birds which constantly surround them. Of the origin and early history of these sheep we know nothing.



Professor Ewart has pointed out that "in the skeleton, horns, and throat fringe, the Soay ram (Plate I. and Plate III., Fig. 2) agrees with the Moufflon," and says that it may "be regarded as a variety of *Ovis orientalis* adapted originally for a moorland life."<sup>1</sup>

I am indebted to Mr Eagle Clarke (who has twice remained at St Kilda for some weeks without being able to land on Soay) for the following notes, these being answers to questions I gave him in writing, which were answered by Donald Ferguson, who for twenty years has been ground officer of St Kilda, and succeeded his father in that office. His son Neil, who is postmaster and speaks English well, acted as interpreter from the Gaelic.

The original breed of St Kilda sheep may or may not have been the same as those now on Soay, but whether any of them were four-horned or not, there have been no four-horned sheep on the islands in Ferguson's time.

Four Black-faced rams were introduced into St Kilda by Sir John Macleod, who built the houses now inhabited by the islanders, and many others of this breed were sent afterwards at various times. Whether this was the first introduction of fresh blood or not is not stated.

At the time of this introduction the St Kilda sheep were smaller, and had shorter wool and were white in colour, with a few black ones among them.

"The Soay sheep are the old breed of St Kilda. In the old days the Laird claimed every seventh ewe lamb and every second ram, and these were placed on Soay, which was the Laird's preserve, as it is to this day. A few rams of the race which preceded the introduction of the Black-faced rams were once introduced into Soay, but they did no good." This is the only introduction of new blood to Soay that Ferguson knows of.

The Soay sheep are now not so large as they once were, and are gradually becoming smaller. This, Ferguson thinks, is due to the fact that there are so many rams which cannot be kept down because of their wildness.

As the result of the introduction of the rams alluded to, a number of white sheep appeared for a time, but their

<sup>1</sup> *A Roman Frontier Post and its People*, p. 373; Glasgow, 1911.



descendants soon reverted to the original colour. Half the Soay sheep are now black (I presume this means dark brown), but are the same size and shape as the others, which are brown (? pale brown). "Some of the brown sheep have patches of black, and some of the black sheep have white marks, especially on the face. Some of the brown sheep have also white marks on their faces, but these are not common. A number of the Soay ewes have horns, probably about one-third. The horned ewes are not paler in colour. The horns of the rams never form a complete circle."

The ewes (Plate II., Fig. 2) usually lamb when a year old, and often have twins. The older ewes as a rule have twins each year. There are not less than 300 sheep on Soay at present. It may be added that there is abundance of water on Soay.

The wool of the Soay sheep is very good and soft, but difficult to spin alone, because it is so short. Most of it is worked up with the wool of the other sheep, but some is spun alone for gloves and socks. It never exceeds  $1\frac{1}{2}$  inches, and is often only an inch long. To this I will add what little I know about their breed in England.

About twenty-one years ago the late Mr Assheton Smith brought some of these sheep from Soay, and two or three years later five ewes came from Macleod of Dunvegan, owner of the island, which lived in his park at Vaynol, N. Wales, till he died. Mr V. M. Lort, to whom I am indebted for this information, bought most of the flock, and kept them in a field at his home, crossing the rams with various breeds, of which Manx and Southdown seem to have been the most successful. He assures me that no ram but a Soay was ever used at Vaynol, as I thought possible, because in this flock the legs were longer, and the faces paler in colour than those which I imported in 1910. But Ferguson's evidence shows that there are pale or white-faced animals among the Soay sheep.

I saw Mr Lort's flock in 1910, and noticed no dark brown or hornless ewes among them. I bought two rams and seven ewes, one of them a lamb, all of which were horned. I put these in the same field with a dark-brown maned ram and

four ewes, of which three were hornless and one dark brown in colour, exactly like a pair which were sent at the same time with mine direct from Soay to the Duke of Bedford. Mine were very poor in condition when they arrived in August, and never got fat. The dark imported ram, though smaller than Mr Lort's, always seemed to take the lead, and I believe was the sire of most of the thirteen lambs which were dropped by the eleven ewes in April 1911, nine or ten of them being born in one night. The ewe lamb had twins, and though she is still the smallest of the lot, mothered her lambs and brought them up, as the rest did, without the least help, though the extreme heat and drought of last summer seemed very trying to them. In the small field where they lambed, and where my keeper gave them a few swedes in March and April, they became fairly tame, and would let him come within a few yards of them, and when enclosed by a close wire fence or by wire netting they never tried to get out. But as soon as the ram lambs began to show signs of a desire to breed, and I had to wean them, I had some trouble to keep them in, and the necessity for using a dog in order to catch them seemed to make them as wild as ever.

When grazing with Manx and Black-faced ewes they always, both ewes and lambs, kept more or less apart, but the old rams got on very well with those of other breeds, over which their superior agility gave them an advantage. But when one of those bought of Mr Lort hurt himself in trying to get through a wire fence early in November, the others set upon him and butted him to death, just as deer will do. This ram was presented to the Natural History Museum, London, where there has till now only been a ewe. It is remarkable that none of these sheep or their lambs were ever struck by blowflies, which were very troublesome to other sheep in 1911; none of them ever became sore-headed owing to the irritation caused by flies settling at the base of the horns, as is often the case in Black-faced and most domestic horned breeds; none ever suffered from lameness or diarrhoea. Though their pasture and environment were absolutely different from that of their native climate, they seemed able to take care of themselves as well as deer.



FIG. 3.—ROCKY RAM.



FIG. 1.—NORTH RONALDSHAY RAM.



FIG. 2.—SOAY RAM



FIG. 4.—RAM FROM NORTH UIST



With regard to the various crosses which have been and are being made by Prof. Ewart, Mr Lort, and myself, with other breeds, I will say nothing now, as the subject has interest rather from an economic than a natural history point of view.

#### HEBRIDEAN SHEEP.

Most writers agree in supposing that the old Hebridean breed was originally introduced from Norway, and some have supposed that the wrecked ships of the Spanish Armada may have brought some new blood, but we have no reliable evidence on this point. I can get no exact description, specimen, or figure of the aboriginal sheep which are said to exist on some of the islands of southern Norway,<sup>1</sup> and it is probable, indeed almost certain, that the breed now generally known as St Kilda in English parks is a mongrel in which the Black-faced Scotch has a considerable share.

Early writers give little exact information, but in Martin's *Description of the Western Islands*, 1703, p. 48, I find the following:—"About a league to the north of Pabbay, lies the isle of Sellay, a mile in circumference, that yields extraordinary pasturage for sheep, so that they become fat very soon. They have the biggest horns that ever I saw on sheep." On p. 286 he says of St Kilda:—"The horses and cows are of a lower stature than on the adjacent isles, but the sheep differ only in the bigness of their horns, which are very long." He says nothing about the sheep on Soay, or about four-horned sheep.

Walker<sup>2</sup> says:—"The Hebridean sheep is the smallest animal of the kind. It is of a thin, lank shape, and has short, straight horns. The face and legs are white, the tail extremely short, and the wool of various colours; for besides black and white, it is sometimes of a bluish grey colour, at other times brown, and sometimes of a deep russet, and

<sup>1</sup> Dr J. Walker, *Economic History of the Hebrides*, ii., 69 (1812), says, but I know not on what authority, that this native sheep of the Hebrides and the Shetland Isles is exactly the same with what subsists to-day in the Kingdom of Norway.

<sup>2</sup> *History of the Hebrides*, ii., 69 (1812).

frequently an individual is blotched with two or three of these different colours. In some of the low islands, where the pasture answers, the wool of this small sheep is of the finest kind, and the same with that of Shetland. In the mountainous islands, the animal is found of the smallest size, with coarser wool, and with this very remarkable character, that it has often four, and sometimes even six horns."

How much Walker really knew about the Hebridean sheep of his time it is hard to say, but there is no evidence of the existence of sheep with short, *straight* horns anywhere in Scotland at the present day; and from what we know about the introduction, not only of Black-faces, but also of Spanish Merinos, which about this period were introduced into many parts of Scotland, it is probable that except in the more remote islands, crossing had already taken place.

Harvie-Brown and Buckley, in their *Fauna of the Outer Hebrides*, say very little about the sheep, except that four-horned sheep were not uncommon in Harris and North Uist, and that they had heard that even six-horned animals were not unusual. But I cannot find a specimen in any museum or collection to-day, except what have been bred in parks; and though I have myself seen in an island in West Loch Tarbert, Harris, in 1868, a ram with a fifth horn standing a foot or more high between the others, I cannot hear of any such alive at the present time.

Millais figured, in *Mammals of Great Britain*, vol. iii., p. 212, fig. 4, the head of a Hebridean ram which has two horns, very much of the same type as those of my Soay rams, but longer, more spreading, and not so thick at the base. They are not at all like those of the so-called St Kilda sheep, or are they remarkable for their size. He informs me that he bought the animal alive in N. Uist from a crofter, and had to shoot it, as it was very wild. I have seen very similar horns on the old Norfolk Black-faced ram, and such a head might very well represent a primitive race from which the improved Black-faced Scotch sheep has been derived.

Mr A. M'Elfrish of Lochmaddy, in answer to my inquiries, writes as follows:—"I am afraid the subject is a pretty obscure one. There is certainly at the

present time no such thing as a pure breed of four-horned sheep in these islands, nor has there been since I came here in 1886, any such thing. No doubt there is a strain of four-horned blood running through great numbers of the sheep in these parts, but I know no one who will assert that he has a breed of such animals. My opinion is that all the four-horned ones that now crop up or that have cropped up in recent years are simply throw-backs. It is said that at one time, long ago, all the sheep in these parts were four-horned, and that they were replaced by the Black-faced from the Borders, but it would require some research to prove that. It is yearly becoming more and more difficult to procure a good specimen of a four-horned ram; but I proved one thing, at least to my own satisfaction, namely, that four-horned rams are certain, or at least almost certain, to throw four-horned lambs. A number of years ago I purchased from different parts of these islands a number of four-horned rams and put them to ewes of various kinds, native, crosses, half Cheviots, etc., and in every single case without exception the tup lambs were four-horned, and in every case the horns were exact replicas of the horns of the sires; so much so, that any one could easily point out each ram's get. The one I think you refer to was a get of one of these, and was an exact replica of his sire, with the exception that by good grazing and a little hand-feeding in winter his horns developed enormously. The top ones at one time, I remember, measured on the tape 36 inches, and, as you say, the lower ones would very soon have prevented his feeding. They all but did so when he disappeared, but by grazing at the sides of slopes, banks, and ditches, he was able to pick up a living. At first he had five horns, the fifth growing from the centre of his forehead, but it was only skin deep and was early knocked off."

Mr M'Elfrish was good enough to send me a photograph (Plate III., Fig. 4) of this remarkable ram. He was seen by Mr Millais alive, but he mysteriously disappeared the next day, probably stolen for the sake of his head. But all efforts to trace the head have failed, and I can only hope

that if it exists, and this illustration is recognised, it may be still brought to light.

The only one that I have seen approaching it in size was a ram belonging to Sir B. Brooke, which I saw in Colebrooke Park, County Fermanagh, three years ago.

A race of small black sheep, of which the males have often—in some flocks usually—and the females more rarely, four horns, is kept in several English parks under the name of St Kilda sheep, but they are in most cases of uncertain origin, and more or less crossed with Black Welsh or other small breeds. The shortness of their tails is a good indication of pure blood. All of them seem to be able to live like deer, without attention, and to be almost immune from maggots and foot-rot. Perhaps the largest flock is that of Mr Leopold de Rothschild—the Earl of Portsmouth and the Duke of Bedford also have good specimens.

So far as I can learn, there has been no special attempt made to select the four-horned character which seems to prevail among the rams in these flocks, but they are very variable in type. Mr R. H. Holding, in *Proc. Zool. Soc.*, 1903, pp. 116-119, describes and figures four heads, but he tells us little about their origin. In *Proc. Zool. Soc.*, 1909, pp. 98-100, he returns to the same subject, and figures a more typical ram's head (fig. *a*) which is very like the Shetland four-horned and Icelandic type. His figure *c* represents a ram then in the possession of Mr E. M. Machugh, which is supposed to be that of a pure Black-faced ram, selected by the owner from the produce of a four-horned ram lamb which appeared in his flock, but this seems so like the heads of cross-bred Manx Black-faces, figured by Professor Wallace in *Farm Live Stock*, that I suspect it must be due to a cross of Hebridean origin, as I can hear of no four-horned rams occurring among really pure-bred Black-faced sheep.

I have a skull of a four-horned ewe from Mr L. de Rothschild's park, which is as good an example as I have seen in this sex, for when four horns appear, as they often do in the ewes of this breed, they are generally small and irregular.

(*To be continued.*)



THE GROUSE IN HEALTH AND IN DISEASE.<sup>1</sup>

THE Final Report of the Committee appointed to inquire into the causes of "Grouse Disease" was issued in August 1911. In some respects this Report presents unusual features. In place of being printed in the form of a Blue Book, the result of the Committee's investigations takes the form of a handsome and copiously illustrated book, dealing exhaustively with the Life History of the Grouse, together with a small companion volume of Appendices in which are to be found the analyses of correspondents' reports, and other tabulated matter of much scientific interest. The whole forms a work of the highest value, not only to the general Ornithologist, but perhaps in a special degree to the student of avian parasitology, who will find this subject as it affects a single host, treated with a fullness probably never before attempted. At the same time, as the maintenance of the economic value of Grouse Shootings was no doubt a leading motive for the original appointment of the Committee, this question, and generally all questions affecting the management of the Grouse and of its food supply, are simply and clearly dealt with from the point of view of the practical Game Preserver, or of the Owner of a Moor.

The Committee was originally appointed in April 1905. Its investigations were expected to be spread over a period of three years; and though this time has been somewhat exceeded, the result more than justifies the delay. The Committee has never received any grant whatever out of public funds, the terms of its appointment providing that the whole of its investigations should be carried on at the expense either of members of the Committee or of private subscribers. The investigations have accordingly been greatly hampered throughout by lack of funds; but the

<sup>1</sup> *The Grouse in Health and in Disease*: being the Final Report of the Committee of Inquiry on Grouse Disease; 2 vols. London: Smith, Elder & Co., 1911.

generous subscriptions of just 360 gentlemen, and the loyal co-operation of the experts and staff, who have given their services either gratuitously, or for what was at most a nominal consideration, have enabled the members of the Committee to claim that the objects for which it was created have been effectually attained.

As the investigations proceeded, valuable first-hand information was received from Moor-owners, Shooting-tenants and Gamekeepers throughout the whole districts of Scotland and England in which Grouse are to be found, dealing with almost every point connected with the Natural History of Grouse and the Management of Grouse Moors; and by the inclusion of sections dealing in detail with the results of the opinions so collected, along with much original matter from the able pens of Lord Lovat, the Chairman of the Committee, and of the Secretary, Mr A. S. Leslie, the Report claims to have become a Monograph of the Red Grouse in Health and in Disease, rather than a Summary of the Proceedings of a Departmental Committee of Inquiry.

The Natural History, Physiology, and Plumage changes of the Grouse, as well as such matters as Heather-burning, Stock Management, Methods of Shooting and other cognate questions, are dealt with in this volume by expert writers; but space will only permit of a brief survey of a few of the more scientific results of these investigations.

The seasonal changes in the Plumage of the Grouse have been studied in the past both by Mr J. G. Millais and by Mr W. R. Ogilvie Grant, but points of difficulty have remained. This study is complicated by the fact that the sexes moult at different seasons in the year, the cock between April and June, and again between August and October, and the hen about two months later in each instance; and that the moults may be deferred for as much as a year or even more, as a result of an attack of "Disease." Dr E. A. Wilson prepared a series of many hundreds of skins of Grouse, illustrating the plumage changes in both sexes at every month in the year, and under both normal and abnormal conditions; and his chapter dealing with the information to be drawn

from this series of skins, is illustrated and elucidated by many beautiful coloured plates.

Many avenues were explored by the expert Staff in search of some specific micro-organism which might be demonstrable as the *causa causans* of "Grouse-Disease"; but for some time with negative results. The Parasites, large and small, of the Blood and of the Alimentary Tract were investigated by Dr Fantham and Dr Shipley respectively, together with the Life-history of the parasitic and other insects found in association with Grouse, or on ground frequented by them; and a great deal of most valuable information was thus incidentally acquired. As regards the Disease itself, two main theories had hitherto held the field. The one supported by the great name of Klein, and at first favoured by the Committee, attributed the specific cause of the Disease to a bacillus of the colon group, and described its leading characteristics as those of an acute, infectious, epidemic pneumonia, causing death with very great rapidity, without wasting, loss of plumage, or other external symptoms. Cobbold, on the other hand, had declared as long ago as 1872, that the cause of the disease was to be found solely in the infestation of the cæca by a nematode worm of the genus *Strongylus* (now *Trichostrongylus*), with chronic irritation and consequent functional loss in these organs, causing extreme emaciation and death practically by starvation.

The result of the Committee's investigations has been to support Cobbold's theory in every respect. The specific bacillus placed under suspicion by Klein was by Dr Seligmann demonstrated to be no other than *B. coli* migrating *post mortem* from its proper sphere in the intestine into the lungs and surrounding tissues. The Disease is at the same time shown to be due to the presence of swarms of strongyles in the cæca, and to be due to their presence alone, although infestation by other parasites may affect the general health of a host, and render it less resistant to the attack. When the strongyle is present in overwhelming numbers, the mucous membrane of the cæca does indeed become injured to an extent that permits of the passage of a certain number of the intestinal bacteria into the tissues of the liver and

other organs; but the number of living bacteria to be found in these organs is invariably small. To some degree they are no doubt harmful; but no evidence was obtained that the death of the host could ever be attributed to their direct influence. On the other hand, the presence of *eosinophilia* in the blood, as demonstrated by Dr Fantham, indicates that certain substances secreted or excreted by the parasites pass into the circulation; and this fact, together with the loss of function in the cæca owing to the extensive decortication of the epithelial lining by the worms, sufficiently accounts for the resulting symptoms of the disease, and for the heavy mortality in the birds so affected.

The Life-history of the strongyle worm (*Trichostrongylus pergracilis*), an exceedingly fine hair-like worm of about one-third of an inch in length, has been thoroughly worked out by Dr Leiper, Helminthologist to the London School of Tropical Medicine. The egg being laid within the host, passes out, and the larvæ hatch and undergo their early metamorphoses on damp earth. Still aided by moisture, the larvæ afterwards wriggle up to the heather tips, are there swallowed by a Grouse, complete their life-cycle, and become sexually reproductive, all within a very few days. Counteracting influences are sun, drought, and to some extent frost. Owing probably to these influences, infection is in reality almost confined to the spring months, and the mortality greatest during the periods of pairing and nesting. Outbreaks do not in fact occur in autumn, though owing to the increased opportunities of collecting sick (but, in fact, convalescent) birds at that season, the contrary has hitherto been generally held. The only remedy is to be looked for in the provision of a plentiful food supply. Grouse are heavy feeders; but only a small proportion of the heather on many moors is suitable for their food. The larger the supply of good, regularly burnt, feeding heather on a moor in proportion to the stock on the ground, the greater will be the resisting power of the birds, and the smaller also the proportion of infected plants. "During the months of May, June, and July the fresh young shoots of heather are probably more nourishing than at any other time of the year. In July, August, and

September berries are added to the Grouse's diet, and in the late autumn and early winter the seed or fruit of the heather is largely eaten. In fact it may be said that from the middle of May to the middle of the following January the food supply, even on the worst moors, is almost inexhaustible, and during this period the ground is capable of supporting a stock far larger than it could possibly carry during the subsequent three months." The capacity of a moor to carry a healthy, disease-resisting stock of birds has therefore to be gauged by the quantity of the food supply available during the first months of the year. If the ground be overstocked at this season, disease will almost certainly assert itself, either then or later, whatever the capacities of the moor at other seasons. "If we consider that birds may be packed in large numbers on one portion of the feeding area, for perhaps weeks at a time, herded together by stress of weather or shortage of food, that the number of strongyles will increase by geometrical progression as the birds get more heavily infected, and therefore increasingly able to foul the moor, it is not difficult to realise, despite the countless thousands of larvæ destroyed by drought, mishap, heather-burning, etc., how the moor may become more and more tainted, until at last every shoot of heather bears the seeds of 'Grouse Disease.'"

The burning of the heather in regular and systematic rotation is the best preventive to an outbreak of "Disease." Given a sufficient food supply, the strongyle worms do not seem to cause much inconvenience to Grouse which are otherwise in good health. They are practically always present, nor do their numbers appear to vary with the season of the year. In fact, it is only when the numbers of the invading host have become overwhelming that the specific symptoms of "Disease" become outwardly conspicuous. "Recent scientific investigation appears to indicate that [in every form of infection] the power of resistance varies directly with the health of the subject, and as far as the Committee's investigation goes, the Grouse appears to be no exception to the rule. Once allow the vitality or weight to go below a certain recognised figure, then immediately the strongyle worm appears to operate on the tissues of

the lining of the cæca. The cæca become inflamed, the digestive process is no longer effective, the moult is delayed so that the bird loses the fresh colour of its plumage, declines in weight, and after a more or less protracted resistance, eventually succumbs."

There is another disease which has been shown during the course of this inquiry to be very fatal to the young of Grouse, though not to the adult bird. Young Grouse are subject, along with the young of many other birds, and particularly of Partridges, to a form of enteritis due to the presence in the alimentary canal of a microscopic, protozoan parasite, called *Eimeria (Coccidium) avium*. When Grouse or Partridges have laid well, and hatched out well, and when the warmth and sunshine of a specially fine summer have fostered the brightest hopes, it is often nevertheless found, as every gamekeeper knows, that when August or September comes round, the coveys have dwindled down to two or three birds a piece, and that the process is still going on. Coccidiosis is the cause.

The exceedingly intricate Life-history of this parasite—the first time, it is believed, that the Life-history of an avian *coccidium* has been worked out in detail—has been thoroughly explored by Dr Fantham. Its methods of multiplication include, first, a phase of "schizogony" or division within the body of the host, and, subsequently, the formation by sexual reproduction of resistant spores, which pass from the first host and spread the infection to a new one. The whole morphology is diagrammatically explained with the greatest clearness; and this chapter is one not only of great practical importance, but of the highest scientific interest as well. Dr Fantham's investigations into the predisposing causes of the disease, as well as into any possible remedial measures, were unfortunately incomplete when the Inquiry came to an end, but valuable hints are given as to the employment of catechu in artificial drinking supplies, as well as regarding what may be called "sanitary" precautions that ought to be taken wherever this is possible.

Interesting observations on the Blood of Grouse both in health and in disease are made by Dr Fantham, who records

the discovery by Drs Seligmann and Sambon of a new Hæmosporidian which has been named *Leucocytozoön lovati*. This parasite is probably spread from Grouse to Grouse by the Grouse Fly (*Ornithomyia lagopodis*). A few small Spirochætes were also, for the first time, found in Grouse, and were named *Spirochæta lagopodis*. But a passing reference to the chapters on the minor parasites, illustrated as they are by a series of beautiful coloured plates, is all that can here be attempted.

Mr Grimshaw, of the Royal Scottish Museum, writes on the subject of the Heather Beetle (*Lochmwa suturalis*). This beetle is an important pest on grouse moors, and is entirely responsible for the peculiar "foxy red" condition of heather which is usually described as "frosted." Samples of such heather were sent to Mr Grimshaw for examination from all parts of Scotland, and in practically every case a careful search disclosed the presence of the beetle in, proportionately, gigantic numbers. Many correspondents stated that acres of their moors were rendered useless either for cattle and sheep or for Grouse. Grouse do not indeed eat these withered shoots, and there is therefore no direct connection between the diseased state of the heather and "Grouse Disease," but where the patches of injured heather extend over a large area, a considerable shortage of food may result, rendering the Grouse less fit to resist the attacks of parasites, or to combat disease of any kind whatever.

A remedy is not easily found. Black game greedily devour the beetle, but Grouse unfortunately do not. Burning the affected areas would, no doubt, be effective, but the beetle hibernates from about September until May, some distance below the surface of the soil, and the burning would therefore have to be done sometime between May and September, at which season it is not generally practicable. A satisfactory method of dealing with the pest has therefore yet to be discovered.

In the Appendix volume will be found an interesting series of maps, showing the incidence of disease in every year since 1872; and this part of the Report contains also careful analyses of the weather in each (meteorological)

district of the country, together with reports of the laying, hatching, and health of the birds, throughout the whole of each year within the period covered by the inquiry. Enough has, however, been said to show that the Committee and the scientific staff are most heartily to be congratulated on the results of their investigations, as well as on the splendid volumes in which their Report is contained.

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A NEW SPIDER (*LEPTYPHANTES*  
*MORATUS*, N. SP.)

By the Rev. J. E. HULL, M.A.

AMONG the Spiders collected by me at Forres in August 1910, and recorded in the *Annals* of April 1911, was a *Leptyphantes* unknown to me. It was represented by a single female taken among heather and pine needles in the Altyre woods. This specimen escaped me when the original list was compiled, having been misplaced among a large number of *Bolyphantes expunctus* Cb., a species which it very closely resembles in outward appearance. I have now recovered it, and find it quite distinct from all our British species of *Leptyphantes*; nor does it seem to have been met with abroad. Of its congeners, it most nearly resembles *L. cristatus* Menge and the continental *L. mughi* Fick., but is rather smaller than either of them. I append a description.

*Leptyphantes moratus*, n. sp.

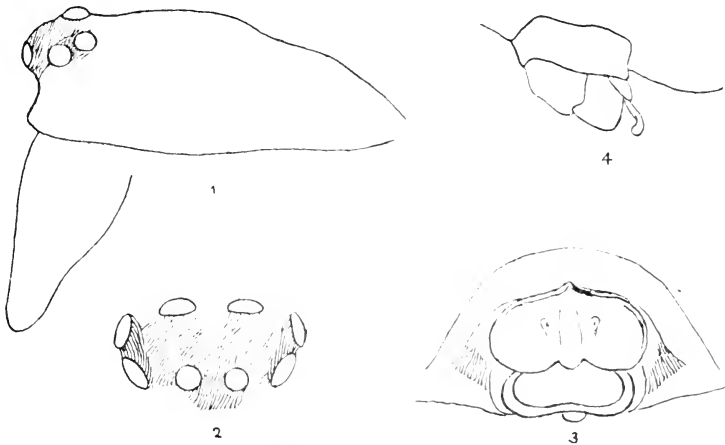
Adult female: length, 2.6 mm. (cephalothorax 1.0 mm., abdomen 1.8 mm.).

Cephalothorax yellow-brown, rather dusky, with a dark margin. Upper eyes pretty large, equal, in a straight line, of which the middle interval is equal to an eye's diameter, the lateral intervals rather less. Of the lower eyes the two medians are prominent, standing well in front of the laterals when viewed from above or from the side; their diameter is two-thirds of the laterals, about equal to the lateral interval, the middle interval being slightly less. Clypeus very



concave, its height just equal to that of the ocular area. Length of the falces three times the height of the clypeus. Fang-teeth normal, 3 outer, 5 inner; the latter close together, the basal tooth twice as large as the rest, which are equal. Sternum dusky brown, smooth, not very convex.

Legs: order of length 1, 2, 4, 3; tibia, metatarsus, and tarsus of the first pair, 1.1, 1.1, 0.7 mm. long respectively, of the second pair 0.9, 0.9, 0.6 mm. Tibia i. with two long dorsal spines, and two lateral spines, one before, one behind. The anterior lateral spine is wanting on tibia ii. Tibia iii.



*Leptyphantès moratus*, n. sp.

1. Cephalothorax, lateral view. 2. Eyes, from above and in front. 3. Epigyne.  
4. Epigyne, lateral view.

and tibia iv. have no lateral spines. Femur i. with one strong spine in front; the other femora without spines. All the metatarsi have a pretty strong dorsal spine. The palpus has a long strong dorsal spine on the patella, and a similar but shorter spine on the tibia; many spines on the tarsus.

Abdomen very nearly as high as long (1.6 mm.), pallid above with scattered cretaceous spots. The under side is a uniform dusky grey, which extends slightly to the sides, especially towards the hinder parts.

Epigynal fovea about as wide as long, occupying the whole of the summit of a low mound with nearly vertical sides. The forward half of the fovea is entirely masked by

a pallid hairy membrane, with a slight ridge along the middle, which projects as a little lobe into the central sinus of the hinder margin. The posterior half of the fovea is completely filled with a transverse pale tubercle. From the hinder margin of the fovea springs a little spathulate process, nearly vertical, attaining the same height as the adjacent tubercle.

One adult female, Altyre woods, Forres, August 1910.

#### NOTE.

The above species is to be added to my "List of Spiders collected at Forres" (*Annals of Scottish Nat. Hist.*, April 1911), from which list the following names must be removed:—

*Lycosa* sp. n. (*harrisonii*, Hull). This spider proved to be simply *L. lugubris* Walck.

*Lycosa arenicola* Cb. The spiders recorded under this name were all females, and, apart from colour, I know of no character by which they may be distinguished from *L. arenicola* Cb. I took both sexes of this variety, however, on the Northumbrian coast opposite Holy Island, in May 1911, and found that though strikingly different from typical *Lycosa agricola* Thor. in coloration, they are in everything else identical with that species. I have therefore given to this form the varietal name of *maritima* (*Trans. Northumberland, etc., Nat. Hist. Soc.*, vol. iv., p. 45).

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## NOTES

**Badger in Lanarkshire.**—A female badger was killed in June 1911, by Thomas Corson, gamekeeper, on Cowhill farm, about four miles E. of Crawford.—HUGH S. GLADSTONE, Capenoch, Thornhill, Dumfriesshire.

**Bird Notes from Berwickshire.** — COCCOTHRAUSTES VULGARIS. A pair of Hawfinches were frequently seen in my garden in the town of Duns during last spring. They were feeding on the kernels of wild-cherry stones, which were plentifully scattered on the ground under a tree that had produced a large crop of fruit the previous season. After this supply of food had been exhausted the birds were not seen, but that they were still about was evident from the havoc that was wrought all the summer amongst the peas.

The hollies and other bushes in the garden were searched for a nest, but no trace of one was found.

**GEVINUS VIRIDIS.**—A Green Woodpecker was shot by Mr John Barrie, gamekeeper, at Bonkyl, near Duns, in the autumn of the year 1900. The bird was preserved, and it is now in the possession of Mr J. Simpson, gamekeeper, Manderston. I have seen this specimen and made inquiries about it, and found its authenticity beyond question. There are very few reliable records for this species as a visitor to Scotland. [Sir T. D. Gibson Carmichael liberated several in Peeblesshire a number of years ago—EDS.]

**COTURNIX COMMUNIS.**—A Quail was shot at Whitehall, near Chirnside, on the 18th October last. It has been presented to the Royal Scottish Museum. **PHALAROPUS FULCARIUS.**—A Grey Phalarope was picked up under the wires of the telegraph beside the railway near Greenlaw, in November 1906. It is now in the collection of Mr T. Moffat, gamekeeper, Marchmont, by whom it was preserved.

The records of the Green-Woodpecker and the Grey-Phalarope are not given in the recently published *Fauna of the Tweed Area.*—T. G. LAIDLAW, Duns.

**Some Bird Notes from the Solway Area.**—A HOODED CROW, the first ever seen in the district, was shot near Monybuie, Kirkcudbrightshire, about 17th October 1911. A HOOPOE, so I am informed by a gamekeeper, was seen near Carnsalloch, in December 1910—a very unusual, though not unprecedented, date for the local appearance of this rare spring migrant to England. Early in December 1911, I was sent a young PINTAIL DUCK which had been shot on the shore below Glencaple, Dumfriesshire, and another was shot about the same time near Dormont, Dalton. I believe this species now visits the estuary of the Nith in annually increasing numbers.—HUGH S. GLADSTONE, Capenoch, Thornhill.

**Hawfinch in West Lothian.**—On 21st June a young male Hawfinch (*Coccothraustes coccothraustes*) was found alive in Dalmeny Park, West Lothian, by Mr David M'Diarmid, head gamekeeper to the Earl of Rosebery. The bird, which was not more than ten or twelve days old, had evidently fallen from a nest not far off. Owing to the density of the foliage the nest was not discovered until December, when it was found by Mr W. Evans in a hawthorn tree close to where the young bird was obtained.—BRUCE CAMPBELL, Edinburgh.

**The Continental Song-Thrush and Northern Willow-Wren in Haddingtonshire.**—As those of our readers who are ornithologists are aware, Dr Hartert considers that native British

Song-Thrushes, Robins, and Goldcrests are sufficiently different from Continental ones to merit subspecific recognition. With the object of ascertaining whether the East Lothian and Berwickshire coast is visited by the Continental forms I have, through the kindness of the light-keepers, had specimens of these species from the Bass Rock, Barnsness, and St Abb's Head lighthouses. Of half a dozen Song-Thrushes examined, only one is of the Continental type (Dr Hartert has confirmed this); it was killed at the lantern of Barnsness Lighthouse, Haddingtonshire, in the end of December 1910, and was probably a winter visitor to the district. The Goldcrests and Robins—obtained during the spring and autumn migrations—are all, in Dr Hartert's opinion, British birds. Out of a score of Goldcrests I have from time to time submitted to him from these three lighthouses and the Isle of May, he regards only one (a male I got on the May on 20th October last) as Continental, while a Robin and two Song-Thrushes obtained along with it are pronounced to be British. A marked migration, it should be said, was in progress at the May on that day, including, besides the above species, Redwings, Fieldfares, Bramblings, Grey Crows, Woodcock, etc. The apparent rarity of Continental examples of these three species on this coast is somewhat perplexing; and I cannot help thinking that there must be some area on the Continent where birds undistinguishable from ours are reared, and whence they visit us as migrants and pass as natives.

A number of Willow-Wrens from the three lighthouses first mentioned have also been examined. One (a male) from the Bass on the night of 26th April 1909, must, Dr Hartert considers, be the northern race (*Phylloscopus trochilus eversmanni*); though the colour is a shade too dark, the wing characters are right.

When at Barnsness on 27th October last, I obtained an Eared or Black-necked Grebe which had killed itself that morning by striking the dome of the lighthouse.—WILLIAM EVANS, Edinburgh.

**Little Bustard in Kincardineshire.**—A fine specimen of this rare bird (*Otis tetrax*) was shot on the farm of Gallaton, on the estate of Barras, near Stonehaven, on 1st January 1912. The bird had been observed as a stranger frequenting a certain turnip field on the farm for about a fortnight, but the gamekeeper could not identify it. It was wary, and was only shot after considerable manœuvring. The bird, a male in winter plumage, has been set up by Messrs Small & Son, George Street, Edinburgh.—CHARLES COOK, Edinburgh.

[This is the seventh instance known to us of the occurrence of the

Little Bustard in Scotland. The previous records are as follows: near Montrose, in 1833; at St Andrews, on March 6, 1840; at Halkirk, Caithness, in June 1848; near Elgin, on February 8, 1861; and "Dee," Nov. 1873 and Dec. 1889.—EDS.]

**Black-tailed Godwits and Green Sandpiper in Solway.**

—As the Black-tailed Godwit (*Limosa limosa*) has rarely been recorded from Solway, we heard with interest of four that had been shot at Skinburness (Cumberland). One was procured about 27th August 1911, the rest on 30th August. A Green Sandpiper (*Heldromas ochropus*) also occurred at the same place on the latter date. We have to thank Mr Hugh Mackay, Royal Scottish Museum, for bringing these records to our notice, and for obtaining permission for us to publish them.—LEONORA JEFFREY RINTOUL and EVELYN V. BAXTER, Largo.

**Whimbrel in "Forth" in Winter.**—On 25th November last (1911), I was somewhat surprised to come upon a Whimbrel (*Numenius phaeopus*) on a rocky part of the coast about 2 miles west of North Berwick. It was not at all shy, allowing me to approach within 35 yards of it, when it flew away, uttering the unmistakable call-notes. This is the only occasion on which I have myself seen the Whimbrel here in winter; but there is an old record—in the *Scots Magazine*—of one found frozen to death on Aberlady beach in November 1807; and Mr T. G. Laidlaw has recorded in the *Annals* that two were seen on the coast of East Lothian in February 1899.—WILLIAM EVANS, Edinburgh.

**Whimbrel in December.**—While shore-shooting at Aberlady Bay, East Lothian, on 26th December 1911, I obtained a Whimbrel (*Numenius phaeopus*), which was in good feather and showed no signs of injury. I saw one at Aberlady in November, but I have never seen one as late as 26th December.—R. LINTON RITCHIE, Tranent.

**Black Tern in East Lothian.**—On 31st August 1911 I had the good fortune to obtain a specimen of the Black Tern (*Hydrochelidon nigra*) at Aberlady Bay in this county. The bird, which was in good feather, was an immature female and quite alone. The previous two or three days had been marked by fairly strong westerly winds accompanied by rain.—R. LINTON RITCHIE, Tranent.

**Orthoptera from the North of Scotland, 1911.**—Col. J. W. Yerbury was good enough to collect for me a box of insects, belonging to various more or less neglected orders, while on a visit to Inverness and Sutherland during the past summer. Amongst them were a few Orthoptera. A male example of the Common

Earwig (*Forficula auricularia*), taken at Spey Bridge on 31st August, is the largest I have seen, though perhaps one might find a var. *forcipata* whose total length was a little greater. This, however, is a giant example of the ordinary type, the total length of the dry specimen being 20·5 mm., the length of the callipers occupying 5 mm. out of that total. There were also two nymphs of the same species found under stones and cow-dung near Glencanisp Lodge, Lochinver, on 21st June; and two further nymphs taken by means of the sweeping-net in a damp shady spot at Lochinver on 11th July. The remainder of the insects were Acridians (Short-horned Grasshoppers). Seven specimens of *Omocestus viridulus* were taken at Nethy Bridge—one male on 30th July; one male on 9th August; and one male and four females on 11th August. Four Grasshopper nymphs from Lochinver, taken on 1st, 4th, 12th, and 22nd July, must be assigned to *Chorthippus parallelus*. No less than eighteen examples of *Gomphocerus maculatus*, which showed considerable variety in colouring, were brought from Nethy Bridge. They were captured, a male and a female on 9th August, five males and seven females on 11th August, two males and two females on 18th August. Two examples of *Tetrix bipunctatus* complete the list. One which is very dark, with pronotum extending a little beyond the hind knees, was taken at Nethy Bridge on 9th August. A specimen such as this always raises the hope that it may be *Tetrix fuliginosus*, which should turn up in Scotland, but has not done so yet. The other is of a more usual form, with broad yellowish band along the middle of the pronotum. It was taken at Lochinver on 20th June.—W. J. LUCAS, Kingston-on-Thames.

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## GLEANINGS.

WE are glad to note from *Nature* of 7th December (pp. 177-178), that the new Bell-Pettigrew Museum of Natural History in the University of St Andrews has now been completed, including the erection of cases in the great hall and the furnishing of electric light throughout the building. The article to which we refer gives an illustration of the front (facing west) and two plans, viz., ground and first floor. The building, which is in English Renaissance style, covers an area of about 130 feet by 75 feet. The University owes this important addition to its buildings to the munificence of Mrs Pettigrew, the widow of the well-known Professor who was so long associated with the old museum.

Under the title of "A Good Stag from Ardnamurchan," a letter by Capt. Henry V. Hart Davis, of Wardley Hall, Worsley, Lancashire, is printed in *The Field* for 16th December (p. 1349), accompanied by a photograph. The animal referred to was shot in Ardnamurchan Forest on 30th September, and weighed (without heart and liver) 22 st. 5 lb. The head was an "imperial," the antlers carrying 13 points and possessing remarkably well-defined cups, four on the left and three on

the right. The length of the right antler was 34 inches and of the left 33 inches, while the greatest width outside was 40 inches.

From the *Oölogist* for December 1911 we quote the following:—"One passenger pigeon ending her life at the Zoological Garden in Cincinnati, is all that remains of an American species that early in the last century swarmed over the continent in flocks numbering billions. . . . With the death of this sole survivor of a bird tribe, whose resting-places often covered hundreds of square miles, there will soon disappear the last trace of the wild pigeons that have been slaughtered by men who fed their hogs upon the carcasses they could not carry away. . . . Sad as is the passing of the passenger pigeon, its lesson may avert the extinction of other valuable species."

We have been favoured by the author, Mr Hugh S. Gladstone, with a copy of his "Addenda and Corrigenda to 'The Birds of Dumfriesshire,'" which formed the subject of his Presidential Address to the Dumfriesshire and Galloway Natural History and Antiquarian Society delivered on the 28th October last. Forming a quarto pamphlet of 31 pages, this Address brings Mr Gladstone's important contribution to the Avifauna of south-western Scotland up to date.

There is an interesting paper in the *Glasgow Naturalist* for November 1911 (Vol. IV., No. 1, p. 1), by R. W. S. and H. W. Wilson, on a visit paid by them to a large Cormorant Rookery on Castle Loch, Wigtownshire. They reckoned the population of the colony at about 300 pairs. To ascertain the number of eggs laid each season the keeper marks them with an indelible pencil. On 21st May 1911, four days prior to the authors' visit, the number marked amounted to 900. The total marked in 1909 was 1467.

An Editorial note in the *Ent. Mo. Mag.* for December (p. 277), quotes the descriptions of new Scottish forms of *Erebia athiops*, Esp., *Satyrus semele*, L., and *Pararge megarra*, L., published by Roger Vérité in the Bulletin of the Entomological Society of France (No. 15, Séance du 11 October 1911).

Norman H. Joy records (*Ent. Mo. Mag.*, January 1912, p. 12) the occurrence of the beetle *Olophrum nicholsoni*, Donisth., at Dalwhinnie, Inverness-shire. This species is not only new to the Scottish fauna, but noteworthy from its having only been taken hitherto at Wicken Fen. The insect is apterous, and regarded by the author as abundantly distinct from its allies *O. piceum* and *O. fuscum*.

A paper of much importance to students of British Diptera is that by the late G. H. Verrall entitled "Another Hundred New British Species of Diptera." A bare list of the species was published in the April number of the *Entomologist's Monthly Magazine*, and the descriptive part commences in the January number. In this instalment the following Scottish records may be noted:—*Platyura humeralis*, Winn., Nairn; *Dixa nigra*, Staeg., Nairn; *Tipula nodicornis*, Mg., Nairn and Nethy Bridge; *Rhamphomyia culicina*, Fall., Nairn; *Hilara diversipes*, Strobl., Braemar; and *H. nitidula*, Ztt., Nairn. Most of these records are due to the collecting zeal of our friend Colonel J. W. Yerbury.

F. A. Bather (*Ann. and Mag. Nat. Hist.*, Nov. 1911, pp. 676 and 677) gives particulars regarding the discovery and description of *Palaephonus caledonicus*, the type of which was unfortunately destroyed in the fire at the Kilmarnock Museum, which took place a year or two ago. This species and *P. nuncius*, the type of which is in the Swedish State Museum, are the only Scorpions known from Silurian strata.

## BOOK NOTICES.

REPORT ON THE IMMIGRATION OF SUMMER RESIDENTS IN THE SPRING OF 1910, ALSO NOTES ON THE MIGRATORY MOVEMENTS DURING THE AUTUMN OF 1909, *Bull. Brit. Orn. Club.*, Vol. XXVIII. ; 6s. net.

Like its predecessors, this Report contains much valuable and interesting information on migration. It deals with the arrival of our summer residents in 1910, and also with the migratory movements which occurred in the autumn of 1909. The spring records refer mainly to England, but in the autumn section a good many Scottish occurrences are noted, evidently taken from the *Annals of Scottish Natural History*. Unfortunately in several cases the dates have been misquoted; for instance, those for the Yellow-browed Warblers on the Isle of May, given as 30th September and 27th October, should read 2nd October and 27th September; while the Fair Isle records of the same species should be between 28th September and 4th October, not 28th October and 4th November. There are several other inaccuracies of the same description; but otherwise this Report is quite up to the high standard of those of the same series which have already been published, and is worthy of being carefully studied.—E. V. B. and L. J. R.

EVOLUTION, by Prof. J. A. Thomson and Prof. P. Geddes, pp. 256. Williams & Norgate (*Home University Library*); 1s. net.

No study is more likely to bear rich fruit in the progress of mankind than that of *Evolution*; and in the neat little book are contained the essentials for an introduction to that study. The evidences of the eternal unfolding of plant and animal life, its significance and its processes, are described with the utmost conciseness and in the clearest of language. Nor is the evolution of the Evolution Theory forgotten, for again we read of Darwin's epoch-making investigations, and of the work of his predecessors and successors, down even to the theories of Prof. Bergson. The volume is characterised especially by its social standpoint; and the suggestiveness of its treatment of the evolution of human society need only be instanced by the remark, that the fine independence and stability of the village and clan life of Scotland or of Norway may be in great part due to close association and inbreeding, enforced by the presence of mountain barriers. For the general reader no more concise or more suggestive introduction to the study of Evolution could be recommended.—J. R.



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## NOTES ON THE PRIMITIVE BREEDS OF SHEEP IN SCOTLAND.

By H. J. ELWES, F.R.S.

(Concluded from page 32.)

### MANX SHEEP.

Though not a Scotch breed, yet the aboriginal sheep of the Isle of Man are so nearly allied to the Shetland breed, that whatever their origin may be, I will describe them here.

So far as I know, no one had mentioned this breed until Parkinson<sup>1</sup> (vol. i., p. 252) speaks of them as the smallest breed in Britain. He gives the average dead weight at 20 lbs., the maximum at 32 lbs. at three years old, and says that the mutton is equal to any kind.

Youatt says that they are small on the hills, seldom exceeding 8 or 10 lbs. a quarter, and producing a fleece of short or middle wool, weighing 2½ lbs. They bear much resemblance to the Welsh sheep, and have most of their peculiarities and bad points. They are narrow-chested, narrow-backed, and deficient in the shoulders. They are found both horned and polled, mostly of a white colour, but some of them grey, and others of a peculiar snuff or brown colour, termed on the island a loaghtan colour. This colour, either covering the whole sheep or appearing in the form of a patch on the neck, is considered as the peculiar badge of the Isle of Man sheep. The spelling of this word, according to Cregeen's *Manx Dictionary*, is *lughdoan*, meaning

<sup>1</sup> Parkinson on *Live Stock*, London, 1810.



mouse-brown; but Mr Bacon spells it according to the pronunciation, *loatyn*.

A more detailed account of this breed is found in Miss Gosset's work,<sup>1</sup> most of it being communicated by Mr J. C. Bacon of Santon, from whom I also have had much help and valuable information, when I visited the island in 1911. It seems that the pure breed was gradually displaced by Scotch and English breeds early in the last century, and would perhaps have become extinct if it had not been preserved first by an old farmer named Quirk, and later by Colonel Anderson. Now there are only four small flocks on the island, three of which Mr Bacon showed me. Colonel Anderson, from whose stock most of Mr Bacon's originally came, preferred the white colour, the faces tinged with yellowish or dun, which was a common feature in the old Manx breed; but Mr Bacon as well as Mr Christian of Peel, who has a few of these sheep, prefer the loaghtan colour, and have bred for four horns, which are very well developed in some of their rams. I have now a small flock selected in the island, of which nine ewes and the old ram are loaghtan, one black, and one white with a yellowish dun face.

The brown ewes are in colour very like the Shetland *moorit* sheep, but larger, with a heavier and slightly coarser fleece. They are also distinguished by a paler topknot of wool, which in the lambs appears as a white cap. Several of my lambs, which were born black and turn brown as the wool grows, have a white tip to their tail.

The horns in the ewes are varied in form, some being curled over at the top, and some curve outwards and backwards as in Black-faced ewes. This seems to be the best type of horn in the female. I saw one ewe lamb with four small but well-shaped horns. A ewe of this type is figured by Miss Gosset, p. 65. In the rams the horns are, so far as I saw, never of the Black-faced or Welsh type; but when there are four the upper ones stand high above the head or curl outwards, the secondary horns curl downwards, and sometimes grow into the sheep's cheek, or so far below his mouth that he cannot graze on short grass.

<sup>1</sup> *Shepherds of Britain*, London, 1911.

These sheep seem to be very hardy, and in their native island live on the poorest hill-tops; they are also great jumpers, and often have their fore and hind leg tied together on one side, in order to keep them in bounds. But with wire fences, sheep or rabbit netting, I have had no trouble in keeping them in small enclosures, where they soon become tame.

The fleece of my young ewes, wintered on poor grass only, in an English park, weighed 4 to 5 lbs. unwashed, and was valued at about 1s. 6d. per pound.

Prof. R. Wallace<sup>1</sup> gives an interesting account of the result of crossing a brown four-horned Manx ram with Black-faced ewes at Westown, Lanarkshire, by Mr J. Greenshields, and figures the results of four successive crosses on Plate cxxxix., and the fifth cross on the next plate. The variation in the colour of the face and shape of the horns is remarkable, but the prepotency of the horn character is extraordinary, for though in the fourth cross the result was like a pure Black-face except for the horns, yet even in the fifth cross the horns were still four in number, and not the least like those of a Black-faced tup in shape.

#### KEERIE OR ROCKY SHEEP OF CAITHNESS.

I first heard of the existence of an ancient race of sheep on the cliffs of Duncansby Head in Caithness from Mr Harvie-Brown, who saw a small flock of black, half-wild, and very diminutive sheep which he called "Keeries," on this remote spot about twenty years ago, though I can find no mention of them in his *Vertebrate Fauna of Sutherland and Caithness*. My further enquiries about them were unsuccessful, until I had the good fortune to hear that Mr F. J. Sinclair of Barrogill Castle had preserved a few of these sheep which he calls "Rockies." I annex a *précis* of what he tells me about them.

The Rocky sheep were first seen in 1890 on Duncansby Head, Caithness. At that time there were several small lots

<sup>1</sup> *Farm Live Stock of Great Britain*, ed. iv., p. 521 (1907).

owned in common by the neighbouring crofters, who said they had been there a long time, but no one knew their origin. He procured a ram (Pl. III., Fig. 3) and two ewes, which soon increased. Average carcase weight in good condition, 20 lbs. Tail quite short and hardly apparent. Wool jet-black and short. Remained fertile to a great age; a pair kept from the rest had twins at ten years old. A Cheviot ewe crossed with one of these sheep had a lamb with silver-grey fleece, but no other effect was produced and no increase of size. The next cross was a small black sheep said to have come from Caithness and to be of the same breed. The next cross was a four-horned "St Kilda" ram; this had no immediate effect; in the next generation four horns appeared in both sexes; size and shape remained practically unaltered. The next addition was a ram and two ewes of small black sheep from the Orkneys, almost exactly like the Rockies; there were now twenty-eight in all, and the flock was kept at this number for three years without any apparent change, except in the horns; some of the rams and ewes had four, and some retained the original two horns. In 1906 they were put into a large field where they had much more room; the effect of this was very good, both in the greater increase and in the variation in the horns; the number jumped up from about twenty-eight to forty-six. Since then there has been no great increase. He then discusses the origin of these sheep, which he supposes to be the remains of the original breed of the country, and which Walker supposed were introduced by the Norwegians in the ninth century, and to have been isolated on these cliffs from the Cheviot and Black-faced sheep, with which his flock have a disinclination to breed. He thinks them to be a representative of *Ovis stuederi*, but, from the horns of the original ram (Pl. III., Fig. 3), Ewart believes the Rocky sheep are more intimately related to a race of the Black-faced type than to one of the Mouflon or Soay type.<sup>1</sup>

<sup>1</sup> For the figures of the Soay ram (Pl. I. and Pl. III., Fig. 2) and the figure of the N. Ronaldshay ram (Pl. III., Fig. 1) the author is indebted to Prof. Ewart.

## BIRD NOTES FROM THE ISLE OF MAY IN 1911

By EVELYN V. BAXTER, H.M.B.O.U., and LEONORA JEFFREY  
RINTOUL, H.M.B.O.U.

BY the kind permission of the Commissioners of Northern Lights we were able to spend a month in spring and another in autumn on the Isle of May in 1911. We arrived on 27th April, and found that a Wheatear, three Redstarts, all adult males, four Willow-warblers, and a Brambling had been killed at the lantern early on the 25th. After examining these specimens we proceeded to make a round of the island in search of migratory birds, and found a Fieldfare, a good many Wheatears, a Greater Wheatear, two Willow-warblers, several Wrens, a Skylark, a Carrion Crow, and a Snipe. Next day a Goldcrest, a White Wagtail, and more Crows were to be seen, while a Lesser Black-backed Gull had arrived, and this species was present pretty constantly up to 26th May. Redshanks did not breed on the island; a few stayed till the end of April, and we saw two on 24th May. On 29th April two Bramblings came in and a Wood-pigeon appeared; one or two of these last were seen nearly every day till 26th May. On the night of 30th April a Redbreast of the continental race was taken at the lantern; this was the only Redbreast seen during our spring visit. A Twite (an addition to the island list) and a Swallow were seen on 1st May, and that night there were a good many birds at the lantern from 10 to 12 P.M. (S.W. fresh, rain); those identified were Fieldfares, both races of Wheatears in numbers, Redstarts, Willow-warblers, Golden Plover, Lapwings, Oystercatchers, and Dunlin. After 3.30 P.M. on 2nd May there was an arrival of Whinchats, all males, Tree-pipits and Skylarks, and the last Brambling was seen. The next two days brought nothing of note, but on the 5th the first Common Sandpiper arrived, and the passage of this species lasted till the 16th. Small numbers of Swallows were passing all morning on 6th May, and from midnight to 4 A.M. on the 7th there was a renewed arrival of Wheatears,

Greater Wheatears, Redstarts, and Willow-warblers, and on going out we found numbers of these species, as well as Whinchats and Goldcrests, on the island, and Swallows and two Sand-martins passed going north. A Cuckoo and a Corncrake were also seen and heard. On the 8th May (S.S.W.-S.S.E. light) the movement continued and, in addition to the species that had arrived the day before, Whitethroats and Sedge-warblers, Tree-pipits, House-martins, and Lapwings came in. That night there was a big rush to the lantern, which was at its best about 2 A.M. (S.E. light), when numbers of birds were visible in the rays as far as the eye could see. The great majority were Willow-warblers, but there were also both races of Wheatears, Whinchats, Redstarts, Goldcrests, and Meadow-pipits. At the first hint of dawn the birds ceased coming to the light, and a very few minutes after, none were visible from the balcony. On sallying forth somewhat later we found the island full of birds; in addition to enormous numbers of Willow-warblers and smaller quantities of the other species seen at the lantern in the early morning, there were a Nightingale (*Ann. Scot. Nat. Hist.*, 1911, p. 132), Whitethroats, Lesser Whitethroats, a Hedge-accentor, a White Wagtail, two Swifts, and numbers of migratory Rock-pipits; these last were on passage when the Rock-pipits resident on the island already had eggs. Evidence of the northward movement of this species strikes us as being of interest, as there seem to be few definite Scottish records of the spring passage of the common Rock-pipit. Goldcrests procured in this rush, as well as all the others got during our spring visit, proved to be of the British sub-species. We saw Wrens every day up to this date, when they left, to our regret, as we hoped they might have nested. In the early morning of the 11th hardly a bird was to be seen, but between 11 A.M. and mid-day Whinchats, a male Black Redstart, a Greenfinch, a Spotted Flycatcher, several Reed Buntings, and two Red-backed Shrikes (♂ ♀) put in an appearance. Next day more Reed Buntings arrived, and on the 13th (E.N.E. light) a Missel-thrush, many Common Wheatears, Whinchats, Redstarts, Whitethroats, and Willow-warblers, a Blackcap, a

Siskin, and a Mealy Redpoll favoured us with a visit. The only fresh immigrants of 14th May were another Mealy Redpoll, some Reed Buntings and Tree-pipits, but next day a lot of birds were in (W. very light); more Fieldfares, two Ring Ouzels, Wheatears and Greater Wheatears, Whinchats, Redstarts, Whitethroats, Lesser Whitethroats, a Blackcap, a Garden-warbler, a lot of Willow-warblers, a Sedge-warbler, two Mealy Redpolls, many Spotted Flycatchers, a good many Swallows, some House-martins, and a Sand-martin were to be seen. Some of these stayed for the next two days, and on the 17th we had a fleeting visit from a beautiful male Yellow Wagtail, an addition to the island list. Some more Warblers, chiefly Sedge-warblers, arrived on the 18th; next day all but one or two had passed on, and only small numbers of our common migrants were seen till the 24th. On this day there was a fresh arrival, the birds noted being a Thrush (the only Thrush seen during our visit), Wheatears, Greater Wheatears, Whitethroats, many Willow-warblers, one or two Sedge-warblers, Spotted Flycatchers, Skylarks, and a Cuckoo. Fieldfares had been on the island pretty steadily since our arrival, but left on this day, and the last Redwing passed on the 25th. On the 27th another rush of Warblers took place (E. very light), a Garden-warbler, many Whitethroats, Willow-warblers, and Sedge-warblers appeared, as well as Whinchats, one or two Redstarts, a Spotted Flycatcher, Swallows, House-martins, a Linnet, Skylarks, a Cuckoo, and a Corncrake. By next morning every Warbler and most of the other birds had left, but we saw a Grey Wagtail. On the 29th May, our last day on the island, Wheatears and Greater Wheatears were still present, but all had left by 1st June, as we were kindly informed by Mr Evans. On the 29th we also saw a Whitethroat, a very dilapidated Mealy Redpoll, and a Skylark, while on 1st June Mr Evans records a Turtle-dove (*Ann. Scot. Nat. Hist.*, 1911, p. 184), and next day he saw a Fieldfare, a ♀ Redstart, two Swallows, a House-martin, and some Swifts. With very few exceptions, the birds on passage examined by us were not nearly ready to breed; even those procured as late as 27th May were obviously not just on the point of nesting.

We were interested to notice that many of the migrants sang while on the island.

During a visit paid on 28th July we saw a Missel-thrush and a Wheatear on the May; while on 4th August a Pochard was seen on the loch by Mr Evans, this being an addition to the island list.

On 8th September we again took up our abode on this fascinating isle of the sea. Thereafter we had a month of varying northerly and westerly winds, and only small numbers of birds. The only migrants on the island on our arrival were a few Wheatears, a British Redbreast, and a Willow-warbler. Next day some Greater Wheatears had arrived, and we saw small numbers of both *Saxicola oenanthe oenanthe* and *S. o. leucorroha* pretty regularly up to 1st October. On 9th September there was a passage of Common Terns, and the last of this species was seen on the 15th. White Wagtails passed in very small numbers between 9th and 29th September. A few birds arrived on the 10th (S.S.E. light); chief among these were a Barred Warbler and a few Pied Flycatchers. A Whinchat had come in by evening, the only other one seen this autumn being on the 23rd. On 18th September a Pomatorhine Skua was seen over the island; it was very bold, swooping close over the heads of two unoffending people who were taking their walks abroad. It was seen again at the North Ness, and is a first record for the island. On the 23rd a lot of Meadow- and Rock-pipits, a Pied Flycatcher, Chaffinches, and Bramblings arrived, and next day a good many Tree-pipits put in an appearance. A Lapp Bunting was observed on the 28th (W. strong), and on the 30th a good many Redwings, a Thrush, a Ring Ouzel, some Hedge-accentors, and a Long-tailed Duck were seen. Next day the first Wrens of the season arrived, and on 2nd October a party of six Siskins appeared about 6 A.M. and passed on almost immediately; the last Pied Flycatcher was also seen. A good many Long-tailed Duck passed, going south, on the 3rd, and next day we saw a Sooty Shearwater flying close off the south end of the island. On the 5th a dozen Siskins arrived early and hurried on almost immediately, and on 6th October we



procured a Willow-warbler which proved to be *Phylloscopus trochilus eversmanni*. We saw small numbers of Goldcrests from time to time during the month; all procured were of the British race, except one got at the lantern on the night of 29th September which was *Regulus regulus regulus*.

We were struck by the extreme scarcity of birds on the May this autumn, even the commonest migrants were only seen in ones and twos. For example, we only saw one Whitethroat, one Redstart, two Whinchats, one Ring Ouzel, two Spotted Flycatchers, very few Bramblings, and two parties of Siskins, the weather conditions being consistently unfavourable to the appearance of birds on passage. All the birds were very wild, and hurried on much more quickly than we have seen them do in former years. Soon after we left the island there was a spell of east wind, and a rush took place which was at its height from the 17th to the 21st October. Thanks to the information sent us by Mr Evans and Mr Baigrie, we are enabled to chronicle the species of which it was composed. A Lapp Bunting was procured on 12th October and sent to us, and on the 17th there were a few Thrushes and Starlings at the lantern, and a lot of Goldcrests in the gardens. From midnight to daybreak on the 18th there was a big rush of Redwings, and a few Blackbirds, Starlings, and Skylarks at the lantern, and this rush was renewed next night, there being, however, fewer Redwings. A Woodchat Shrike was caught at the lantern early on the 19th (see p. 10). Yellow Buntings and some Woodcock are recorded on 18th October. Mr Evans spent some hours of 20th and 21st October on the island, and we are indebted to him for the following notes of the birds seen by him there. A Missel-thrush at the lantern, many Song-thrushes and Redwings all over the island, and in numbers at the lantern from 9 to 11 P.M. Many Blackbirds, Goldcrests, Starlings, Skylarks and Woodcock everywhere, and Skylarks at the lantern. A Wheatear, some Redbreasts, a few Hedge-accentors, a Wren, Pipits, twelve to twenty Greenfinches, and about the same number of Linnets, a Siskin, Chaffinches, Bramblings, a Grey Crow, a Long-eared Owl (which is new to the list), and Snipe. Two Goldcrests procured in this

rush were of the continental form, but Thrushes and Redbreasts from the same rush were British birds. Hedge-accentors procured in autumn proved to be of the British race; in fact, all those got on the island by us have belonged to this form (with the exception of one doubtful bird), thus showing that our British Hedge-accentor is a partial migrant. Most of the birds passed on immediately after this; but some Greenfinches, Chaffinches, and Linnets lingered for a time, and a Water-rail killed itself on the wire and was sent us on 8th November. On 15th November two Black-caps (♂ ♀) were killed at the lantern, and there were Snow Buntings on the island about this date.

We wish to express our most cordial thanks to the Commissioners of Northern Lights for their continued kindness in granting us permission to work on the island. We are deeply grateful to them for all they have done for us. To all our good friends on the island we owe a debt of gratitude which we can never repay. Our special thanks are due to Mr and Mrs Baigrie for all they did for us while we were with them, and for birds and notes sent after our departure. Mr and Mrs Ross, as always, were most kind and hospitable, and we thank them most heartily, and also Mr and Mrs Wilson, and all our other friends for their many kindnesses. Mr William Evans has kindly given us permission to use his ornithological notes, which are incorporated in this article, and we thank him very warmly for his generosity. We must also thank Dr Hartert for his help in determining some of the racial forms for us.

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FRESHWATER RHIZOPODA FROM THE  
HEBRIDES, ORKNEY AND SHETLAND  
ISLANDS, AND WESTERN SCOTLAND;  
WITH DESCRIPTION OF A NEW SPECIES.

By G. H. WAILES, F.L.S.

IN 1910 I received from H. B. Powell a gathering of sphagnum from a grouse moor near Dumfries; this and a second gathering in 1911 constituted the only material from which the Dumfries list of Rhizopoda is compiled, hence the absence of many common pond and lake species.

In the same year W. West, F.L.S., kindly sent me a large number of tubes containing material he had collected, when investigating the algal flora of Scotland, from the following localities:—

*Orkney Islands.*<sup>1</sup>—Southern part of Pomona and the northern part of Hoy, and plankton from Loch Kirbister.

*Shetland Islands.*—Bressay and Mainland, and plankton from seven lochs.

*Hebrides.*—Lewis, Harris, North Uist, and Benbecula.

*Sutherland.*—Loch Shin and a mixed gathering from the Scourie district.

*Skye.*—One gathering.

*John o' Groats.*—One tube in which no Rhizopoda were found.

In contrast to the Dumfries material these gatherings were mostly from pools, lakes, etc., and consequently many sphagnum-inhabiting species, which no doubt occur, were not found.

Owing to the material having been preserved it was not possible to identify any of the Amœbina (the sphagnum from Dumfries did not contain any); of the order *Conchulina*, 102 species and varieties were found. G. S. West in *Ann. Scot. Nat. Hist.*, 1905, gives lists of Rhizopoda from the above islands, where all the species he enumerates were found; *Nebela triangulata*, var. *bicornis* (G. S. West), found by him in Loch Shiel, was not seen by me in any of the plankton

<sup>1</sup> A detailed account of the gatherings will be found in "Freshwater Algae from the Orkneys and Shetlands," by W. and G. S. West, *Trans. Bot. Soc. Edin.*, 1905.

gatherings, but the lakes from which they were collected were shallow and unsuited to that species.

SPECIES.	1	2	3	4	5	6
	Dumfries.	Hebrides.	Orkneys.	Shetlands.	Skye	Sutherland.
<i>Amphitrema flavum</i> (Archer), Pen. . . . .	x	x				x
<i>stenostoma</i> , Nüsslin . . . . .	x	x				x
<i>wrightianum</i> , Archer . . . . .	x					x
<i>Arcella artocrea</i> , Leidy . . . . .		x				
<i>catinus</i> , Pen. . . . .	x					
<i>discoides</i> , Ehrenb. . . . .	x	x	x	x		x
<i>hemispherica</i> , Perty . . . . .		x		x		
<i>vulgaris</i> , Ehrenb. . . . .		x	x			
<i>var. gibbosa</i> (Pen.), G. S. West	x	x				x
<i>Assulina muscorum</i> , Greeff . . . . .	x	x		x	x	x
<i>seminulum</i> , Leidy . . . . .	x	x		x		
<i>var. scandinavica</i> , Pen. . . . .	x			x		
<i>Bullinula indica</i> , Pen. . . . .	x					
<i>Campascus minutus</i> , Pen. . . . .		x				
<i>Centropyxis aculeata</i> , Stein . . . . .	x	x	x	x	x	x
<i>var. ecornis</i> , Leidy . . . . .		x	x			
<i>var. discoides</i> , Ehrenb. . . . .	x	x				
<i>arcelloides</i> , Pen. . . . .	x					
<i>Cochliopodium bilimbosum</i> (Awer.), Leidy . . . . .	x					
<i>Corythion dubium</i> , Taranek . . . . .	x	x	x	x		
<i>pulchellum</i> , Pen. . . . .				x	x	
<i>Cryptodiffugia oviformis</i> , Pen. . . . .	x		x			
<i>sacculus</i> , Pen. . . . .		x		x		x
<i>Cyphoderia ampulla</i> (Ehrenb.), Leidy . . . . .			x	x		
<i>var. vitrea</i> , Wailes . . . . .			x	x		
<i>trochus</i> , <i>var. amphoralis</i> , Wailes . . . . .				x	x	
<i>Diaphoropodon mobile</i> , Archer . . . . .	x					
<i>Diffugia acuminata</i> , Ehrenb. . . . .	x	x				
<i>var. inflata</i> , Pen. . . . .		x	x	x		
<i>arcula</i> , Leidy . . . . .			x	x		
<i>bacilliarum</i> , Perty . . . . .	x			x		
<i>var. elegans</i> (Pen.), Cash . . . . .	x	x				x
<i>bacillifera</i> , Pen. . . . .		x				
<i>brevicolla</i> , Cash . . . . .		x	x	x	x	x
<i>constricta</i> , Leidy . . . . .	x	x	x	x	x	
<i>globulus</i> , Ehrenb. . . . .	x	x	x	x	x	x
<i>lucida</i> , Pen. . . . .		x		x		
<i>manicata</i> , Pen. . . . .		x				
<i>oblonga</i> , Ehrenb. . . . .	x	x	x	x	x	x
<i>var. lacustris</i> , Pen. . . . .		x		x		
<i>oviformis</i> , Cash . . . . .		x				
<i>penardi</i> , Hopk. . . . .		x	x			
<i>pristis</i> , Pen. . . . .		x	x	x		
<i>pulex</i> , Pen. . . . .						
<i>subæqualis</i> , Pen . . . . .		x	x			
<i>tuberculata</i> , Archer . . . . .			x			
<i>Euglypha alveolata</i> , Duj. . . . .		x	x	x		
<i>armata</i> , Wailes (10) . . . . .		x		x		
<i>ciliata</i> , Ehrenb. . . . .	x		x	x		

SPECIES.	1	2	3	4	5	6
	Dumfries.	Hebrides.	Orkneys.	Shetlands.	Skye.	Sutherland.
<i>Euglypha compressa</i> , Carter . . . . .		x		x	x	
<i>cristata</i> , Leidy . . . . .			x			
<i>var. major</i> , Wailes . . . . .			x			
<i>filifera</i> , Pen. . . . .				x		
<i>lævis</i> , Perty . . . . .	x	x		x		
<i>rotunda</i> , Wailes (10) . . . . .		x		x	x	
<i>strigosa</i> , Leidy . . . . .	x	x		x		
<i>Heleopera petricola</i> , Leidy . . . . .	x	x	x	x		
<i>var. amethysta</i> , Pen. . . . .		x				
<i>var. major</i> , Cash . . . . .			x	x		
<i>rosea</i> , Pen. . . . .			x			
<i>sordida</i> , Pen. . . . .		x				
<i>sylvatica</i> , Pen. . . . .		x		x	x	
<i>Hyalosphenia elegans</i> , Leidy . . . . .	x		x			
<i>ovalis</i> , <i>sp. nov.</i> (see p. 64) . . . . .	x					
<i>papilio</i> , Leidy . . . . .	x					
<i>sinuosa</i> , Cash . . . . .	x					
<i>subflava</i> , Cash . . . . .				x		
<i>Lesquerusia modesta</i> , Rhumb. . . . .		x	x		x	
<i>spiralis</i> , Bütsch. . . . .		x	x			
<i>Nebela americana</i> , Taranek . . . . .		x				
<i>carinata</i> (Archer), Leidy . . . . .	x	x				
<i>collaris</i> , Leidy . . . . .	x			x		
<i>dentistoma</i> , Pen. . . . .	x	x	x	x		x
<i>flabellulum</i> , Leidy . . . . .	x			x		
<i>marginata</i> , Pen. . . . .				x		x
<i>militaris</i> , Pen. . . . .				x		
<i>parvula</i> , Cash . . . . .	x			x		
<i>tenella</i> , Pen. . . . .	x					x
<i>tincta</i> (Leidy), Awer. . . . .	x	x	x	x		x
<i>tubulata</i> , Brown . . . . .	x	x				
<i>tubulosa</i> , Pen. . . . .				x		
<i>vitrea</i> , Pen. . . . .	x					
<i>Pamphagus granulatus</i> , F. E. Schulze, <i>sp.</i> . . . .		x				
<i>hyalinus</i> , Ehrenb. ? <i>sp.</i> . . . .		x		x		
<i>Phryganella hemispherica</i> , Pen. . . . .		x			x	x
<i>nidulus</i> , Pen. . . . .	x	x		x		
<i>paradoxa</i> , Pen. . . . .		x		x		x
<i>Placocysta spinosa</i> , Leidy . . . . .		x		x		
<i>Pontigulasia compressa</i> (Carter), Cash . . . . .		x	x	x		x
<i>Pseudochlamys patella</i> , Cl. et Lach. . . . .	x					
<i>Pseudodiffugia fascicularis</i> , Pen. . . . .		x				
<i>fulva</i> , Archer . . . . .		x				
<i>gracilis</i> , Schlumb. . . . .		x		x		
<i>Pyxidicula operculata</i> , Archer . . . . .		x				
<i>Quadrula symmetrica</i> , F. E. Schulze . . . . .		x	x			
<i>Sphenoderia dentata</i> , Pen. . . . .		x	x			
<i>fissirostris</i> , Pen. . . . .	x	x		x	x	
<i>lenta</i> , Schl. . . . .		x		x	x	x
<i>macrolepis</i> , Leidy . . . . .						x
<i>Trinema complanatum</i> , Pen. . . . .		x				
<i>enchelys</i> , Leidy . . . . .	x	x	x	x	x	
<i>lineare</i> , Pen. . . . .	x	x			x	

The lists of Rhizopoda here given, together with those of J. M. Brown (*Ann. Scot. Nat. Hist.*, October 1911), enable a general idea to be obtained of the distribution of the Rhizopoda over the western portions of Scotland and the adjoining islands; these lists are very similar, showing a general and fairly uniform distribution of species over the whole area, wherever suitable habitats are to be found. A few of the rarer may be restricted to certain areas, but these areas are, as far as can be judged from existing records, scattered over the British Isles. There is no evidence of any group of species being peculiar to the Atlantic seaboard.

In the islands individuals of the species recorded were generally numerous and often above the usual size.

*Arcella artocrea*, Leidy.

Found only from Lewis. Not common in Great Britain, but plentiful in the United States.

*Arcella hemispherica*, Perty.

Generally distributed over Great Britain; it is classed by Cash and Hopkinson (3) as a form of *A. vulgaris*. It is recorded from Loch Ness (Penard).

*Assulina seminulum*, Leidy.

This species was found in large, fine specimens. At Dumfries the size varied from 77-100  $\mu$  in length; in the Shetlands 100  $\mu$  long was an average size; in the Hebrides it was less common.

Var. *scandinavica*, Penard.

In the Shetlands this variety was plentiful, generally colourless and transparent, with regularly arranged oval scales; the size varied from 100-120  $\mu$  long (6, 10).

*Bullinula indica*, Penard.

From Dumfries measuring about 190 by 160  $\mu$  with an aperture 65 by 10  $\mu$ . This is larger than the average size of British specimens (9, 10).

*Campascus minutus*, Penard.

Only one individual was found, from N. Uist, Hebrides; length, 57  $\mu$ ; breadth, 36  $\mu$ ; thickness, 25  $\mu$ ; aperture, 12  $\mu$ ; collar, 16  $\mu$ . It has only been recorded previously from Loch Ness and the Swiss Lakes (Penard) (7).

*Cryptodifflugia sacculus*, Penard.

This species was not uncommon in the Shetlands and Hebrides, and was also found from Sutherland. Length, 21-32  $\mu$ ; breadth, 15-26  $\mu$ ; neck, 9-16  $\mu$  (6, 10).

*Cyphoderia trochus*, var. *amphoralis*, Wailes.

This species has been recently described (10); it has the form of *C. ampulla*, but the test is composed of imbricated scales and not of discs placed side by side. It is one of the commonest species of *Cyphoderia* in the British Isles.

The individuals seen were of medium size, 100-120  $\mu$  long.

*Cyphoderia ampulla* (Ehrenb.), Leidy.

The specimens found were above the average size as a rule, several from Loch Kirbister, Orkneys, ranging between 130-171  $\mu$  in length (10).

*C. ampulla*, var. *vitrea*, Wailes (10).

Two small specimens of this variety were seen, one each from Neugles Water, Shetlands, and Loch Kirbister, Orkneys; length, 87  $\mu$  and 60  $\mu$ ; breadth, 35  $\mu$  and 33  $\mu$ ; aperture, 13  $\mu$  and 10  $\mu$ . It is characterised by having a clear transparent test with no visible markings.

*Difflugia oviformis*, Cash (3).

These were generally under the size given by Cash, being 75-90  $\mu$  long; but this is, I think, the most usual size. In some of the gatherings they were not uncommon. This species occurs in India and the United States (10).

*Difflugia subequalis*, Penard (8).

A number of Difflugiae were found, which although not typical could only be referred to this species. Penard in his description of this species (*Revue Suisse de Zool.*, 1910, p. 932) states that the diameter generally exceeds the length, owing to the large aperture; the young individuals are light in colour, becoming brown with age. The ones I found were about equal in diameter and length, owing to the aperture being somewhat smaller than in the type, and the colour was never brown. Length, 68-84  $\mu$ ; diameter 68-80  $\mu$ ; aperture, 42-60  $\mu$ .

*Euglypha cristata*, var. *major*, Wailes (10).

*E. cristata* was found only from Loch Kirbister, Orkneys; in addition to the small typical individuals large spineless forms were found; similar ones were subsequently found on Inishbofin, Ireland,

and named var. *major*; on Inishbofin some of these were furnished with either one or two long spines very different from the tuft of spines borne by *E. cristata*, Leidy. Length, 70-76  $\mu$ ; diameter, 20  $\mu$ ; aperture, 10  $\mu$ . Similar individuals (but smaller, 65  $\mu$  long) occur in the United States.

*Hyalosphenia ovalis*, sp. nov., fig. 1.

*Description*.—Test large, pyriform compressed; crown furnished with two to twelve pores and bordered by a keel-like ridge; sides near aperture similarly compressed. Plasma and pseudopoda normal.

*Dimensions*.—Length, 153-177  $\mu$ . Breadth, 130-140  $\mu$ . Aperture, 50-56  $\mu$ .

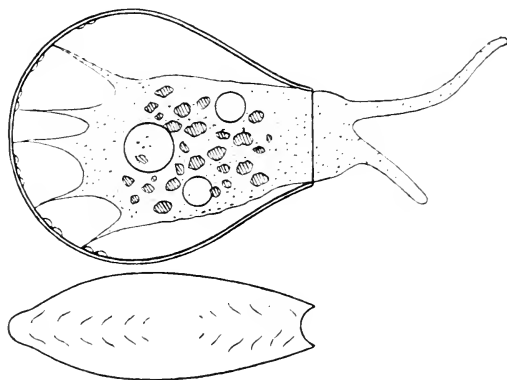


FIG. 1.

*Habitat*.—Sphagnum.

*Distribution*.—Dumfries, Scotland. Kerry, Ireland.

*Distinguishing features*.—This species only resembles *H. papilio*, but is easily distinguished by its much larger size, pyriform outline in broad view, and by the keel-like ridge in narrow view.

*Pseudodiffugia fascicularis*, Penard.

One or two individuals were found in material from near Tarbert, Hebrides, about 32  $\mu$  long. It occurs in Bedfordshire, and was found in the Clare Island district, Ireland (6).

*Sphenoderia macrolepis*, Leidy.

This species is rare in Great Britain. I have seen a few individuals (some active) from Isle of Wight; Haldon Moor,



Devon; Bettwys-y-coed, N. Wales; Clare Island district and Kerry, Ireland. It was found at Stranraer (Wigtownshire) by J. M. Brown (1) (2).

First described by Leidy from the United States, but it is not at all common there. I found only a few specimens in numerous gatherings of sphagnum from New Jersey and Long Island, N.Y.

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## NOTES.

**The presence of Functional Teeth in the Upper Jaw of the Sperm Whale.**—It seems to be generally agreed that one of the characteristics of the Family Physeteridæ is the presence of functional teeth only in the lower jaw, and "the total absence of any functional teeth in the upper jaw," but it is well known that in the latter there occur teeth embedded in the gums which do not reach the surface. During the whaling season of 1911 nineteen Sperm Whales (*Physeter macrocephalus*), all of them bulls, were captured by the Bunaveneader Whaling Company, in the vicinity of Rockall. While on a short visit to Bunaveneader in September, I had the opportunity of examining six of these specimens at the whaling station, and in one I was surprised to

find, visible in the upper jaw, a row of small teeth. The teeth protruded above the level of the gum for rather less than half an inch, and exhibited in plan an almost square section lying close to one of the cavities into which a tooth of the lower jaw had fitted. Seen in elevation the teeth showed a flat crown, slightly hollowed in the middle. The exposed part of the tooth was quite unlike the sharp tips of the rudimentary maxillary teeth of the Sperm Whale described and figured by Sir William Turner in *Ann. Scot. Nat. Hist.*, 1904, p. 7., pl. i.; and the fact that the crown was flattened and polished, apparently by friction, indicates that in this case the maxillary teeth were functional. That the use of such teeth is not to be considered altogether abnormal is shown by a statement made to me by Mr Carl F. Herlofson, that he had on previous occasions observed teeth protruding from the upper jaw of Sperm Whales.—A. J. H. EDWARDS, Royal Scottish Museum.

**Greater Wheatear in Argyll.**—In the *Ann. Scot. Nat. Hist.* for July last, page 137, it is stated that the Greenland or Greater Wheatear (*Saxicola ananthe leucorrhœa*) was recorded for the first time in 1910, from Argyll. As I reported in the migration schedules their appearance in Mull both in the spring and autumn for some years back, the statement needs correction. I am certain, also, that I mentioned a habit this variety has of perching on high trees, and I *now* find that Booth in his "Rough Notes" has drawn attention to this peculiarity. In their passage northwards through Mull they were always observed by me in pairs (male and female). They pass southwards through Iona in September in considerable numbers.—D. MACDONALD, Glasgow.

**The Shore-Lark and other Birds on the Haddingtonshire Coast.**—Though records of the Shore-Lark (*Otocorys alpestris*) in Scotland have not now the novelty they once had, it may, nevertheless, be worth mentioning that on 14th November last (1911) I met with a party of eight on the coast, about two miles west of North Berwick. They were close up to the foot of the sandhills, running about in search of food among withered tufts of the prickly saltwort. At first they were rather shy, flying off along the beach for a couple of hundred yards or so while one was still at a safe distance; but they soon became less timid, allowing me to watch them time and again within forty to fifty yards. They were very silent birds, and only once could I say that I heard a note come from any of them. They were subsequently met with in the same place twice in December and once in January.

Great numbers of Snow-Buntings arrived on the coast about the same time. On the 16th November, Mr D. Bruce, Dunbar, took me to see a flock of 500 or 600 on a stubble-field near there; and the same day I met with a flock of 20 to 30 at the mouth of the Tyne, with which I believe there was a Lapland Bunting, but the weather was very stormy at the time, the birds being in consequence very restless and difficult to observe properly. A small gull on the sands was probably a Little Gull, and a Greenshank flew twice past me.—WILLIAM EVANS, Edinburgh.

**Continental Race of the Redbreast in East Ross.**—It may be of interest to record that on the 16th September 1911 I secured four continental Robins (*Erithacus rubecula rubecula*) by the shore, to the south of Tarbatness Lighthouse. The coast just here faces due east: the robins (all males) were flitting about the rocks and débris by the shore at the foot of the cliffs, and were distinctly wild. Weather fine; wind light, west.—ANNIE C. JACKSON, Swordale.

**Honey-Buzzard reported from Wigtownshire.**—I regret to say that I have been misinformed about the Honey-Buzzard reported by me in the January number, page 15, as having been taken at Dunragit. I did not see the bird, but, having inquired about certain features thereof, they seemed to me to indicate *Pernis apivorus*. It is now in the Zoological Gardens of London, whence W. Seth-Smith reports—"It was only after it had been put out into an aviary that I saw that it was merely a pale variety of the Common Buzzard." The Common Buzzard breeds regularly in the Galloway Hills.—HERBERT MAXWELL, Monreith.

**Bittern at Oban.**—It may interest the readers of the *Scottish Naturalist* to learn that a Bittern (*Botaurus stellaris*) was found dead on the 17th January, on the Railway Pier here, probably having flown against some obstruction which caused its death.—CECIL H. BISSHOPP, Oban.

**Occurrence of the Black-necked Grebe on the Cromarty Firth.**—On 2nd January 1911 a Black-necked Grebe (*Podiceps nigricollis*) was shot in the Cromarty Firth, and the skin came into my possession. Unfortunately the sex of the bird was not determined by the skinner. I had seen the grebe cruising about a day or two before, but at such a distance from the shore that rendered identification impossible. The weather at the time was open, and the prevailing winds west, north-west to north.—ANNIE C. JACKSON, Swordale.

**Tadpole-fish in Largo Bay, Firth of Forth.**—On 3rd January 1912 we picked up a Tadpole-fish (*Raniceps raninus* = *trifurcatus*), lying on the sands in Largo Bay. This species does not seem to be very common in the Firth of Forth. Writing in 1838, Parnell records it from “the neighbourhood of Alloa” (*Fishes of the Firth of Forth*, p. 361), and Mr W. Evans notes one from South Queensferry in 1884, and another from North Berwick in 1908 (*Proc. Roy. Phys. Soc.*, vol. xvii., p. 58). We sent our specimen to Mr Eagle Clarke, who confirmed our identification.—LEONORA JEFFREY RINTOUL and EVELYN V. BAXTER.

**What is the *Cellularia bassani* of Montagu?**—Having been asked this question on several occasions recently, I am induced to publish the following jottings on the subject, made three or four years ago.

In 1808, Montagu described under the name *Cellularia bassani* a small parasite which he found in the subcutaneous cellular membrane of gannets (*Pelecanus (Sula) bassanus*) captured, one gathers, in the English Channel. The description, with figures, was published in the *Memoirs of the Wernerian Nat. Hist. Society*, vol. i. (1811), p. 191. Apparently this organism has seldom been seen since its discovery. Dr R. G. Cunningham, in his well-known treatise on the Gannet (*Ibis* for 1886), states that though he had looked for it with care, he had not succeeded in meeting with it. Mr J. H. Gurney, however, informs me he has found it, but only in one instance—on a gannet from Ailsa Craig—out of six or seven birds examined. Since becoming interested in the subject, I have but once had an opportunity of looking for the creature, and then unsuccessfully. As a generic name, *Cellularia*, it should here be mentioned, was given by Pallas in 1766 to a genus of marine Polyzoa, thus barring its use in the case of the gannet parasite.

An organism very similar to Montagu's, known as *Hypoderas*, or *Hypodectes columbe*, from the domestic pigeon, has been studied by C. Robertson (*Quart. Journ. Micr. Soc.*, 1866, p. 201), Mégnin (*Journ. Anat. et Physiol.*, 1877 and 1879), and others. Robertson alludes to the close resemblance of Montagu's *Cellularia bassani* to this, and any one who compares the figures of the two must be struck by their similarity. Mégnin found *Hypodectes columbe* to be a hypopial stage of an Analgesid or bird mite, *Pterolichus* (now *Falculifer*) *rostratus*, Buchholz. Now, the only Analgesid that appears to have been recorded from the gannet is *Freyana* (subgen. *Michaelia*) *caput-medusa*, Trouessart (see new edition of Naumann's *Naturgeschichte der Vögel Mitteleuropas*, and Canestrini's Sarcoptidæ

in *Das Tierreich*). It seems, therefore, highly probable that Montagu's *Cellularia bassani*—a name which, by the way, one looks for in vain in Canestrini's work—is a hypopial stage of this mite. Probably the best time to look for the hypopus would be the gannet's moulting season, this subcutaneous stage of the mite being possibly a provision against being thrown off with the feathers.—  
WILLIAM EVANS, Edinburgh.

**The Common Spoon-Worm, *Echiurus pallasii*, on the coast of Aberdeenshire.**—The damage caused amongst littoral marine organisms by the recent storm brings to mind similar devastation caused some years ago by a strong and continuous north-easterly gale. After the storm I visited, on the 19th November 1905, the exposed stretch of sand which lies to the north of Donmouth in Aberdeenshire, and amongst much sea-wrack at high-tide mark, I was surprised to find small, flattened, ochre-yellow bodies wriggling upon the sand. These turned out to be the spoon-like proboscides of specimens of the Gephyrean worm *Echiurus pallasii*, Guérin Méneville, which lay strewn in hundreds, or more probably thousands, upon the lower reaches of the beach. The "worm" apparently lives in abundance in the soft sand of Aberdeen Bay about low-tide mark, although disturbance by the storm was required to reveal its presence. The species occurs in the North Sea, the English Channel, the Sound, North Atlantic, and in Christiania Fjord, but Scottish records are woefully sparse. Dr Thomas Scott has found it in the stomachs of fishes caught by trawl-net in the Firth of Forth, and has occasionally taken it in St Andrews Bay; and Prof. W. C. McIntosh records that it is "abundant amongst the débris, on the West Sands [of St Andrews] after storms," the place where Prof. Edward Forbes found the first British specimen in 1840. The Aberdeen specimen before me, which, preserved in alcohol, is of a yellow ochre colour much paler than it originally was, differs from typical specimens in possessing eight bristles in each of the two rings, one more than is normal in the posterior ring.—JAMES RITCHIE, Royal Scottish Museum.

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## BOOK NOTICES.

A NATURALIST ON DESERT ISLANDS, by Percy R. Lowe, B.A., M.B.  
London: Witherby & Co. Price 7s. 6d.

Books relating to the exploration of little-known islands have a charm of their own, more especially to those interested in natural history. Dr Lowe gives us in this welcome volume a graphic

account of his visits to a number of islands in the Caribbean Sea and Gulf of Mexico, and proves himself to be an accurate observer, possessed of wide sympathies and a facile pen. He tells us much regarding the various forms of life, from rats, birds, and land-crabs to the living glories observable amid the coral reefs. The fishes of the seas traversed also come in for much notice, and many remarkable and rare species were captured. The volume well deserves a place in the library of those interested in travel and natural history, and is well and abundantly illustrated.

THE HOME-LIFE OF THE OSPREY, PHOTOGRAPHED AND DESCRIBED,  
by Clinton G. Abbott, B.A., with thirty-two Mounted Plates.  
London: Witherby & Co. Price 6s. net.

The home-life of the Osprey has a great, but now, alas, melancholy interest for Scottish naturalists. Mr Abbott's wonderful pictures have been taken in America, where some of the haunts of the bird are very different from those we were once familiar with in Scotland. There we find nests (depicted) on the seashore, and even on telegraph poles by the side of a railway! The pictures give us all that is claimed for them, namely, peeps into the *vie intime* of this fine bird from the egg to the flight of the full-fledged young; and there are also a number of pictures of the birds in various attitudes of flight, alighting on the nest, feeding the young, etc. The letter-press is suited to the pictures, and is of much merit.—G. G.-M.

THE LIFE AND LOVE OF THE INSECT, by J. H. Fabre. Translated  
by A. T. de Mattos. London: Adam & Charles Black,  
1911. Price 5s. net.

This charming book reads more like a fairy tale than a series of scientific essays. Written in a fascinating style, the work deserves to be read for the sake of its literary merit alone, but when the habits of the insects described are also taken into consideration, the eighteen chapters form an altogether delightful volume. The first four, on the Sacred Beetle, and the two last, on the Languedocian Scorpion, appear to us the most interesting, but they are all full of charm. The language throughout is poetical and beautiful, with a strong personal element, while the absence of technicalities renders the book singularly attractive. We can cordially recommend it to our readers.

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## GLEANINGS.

Edward Meyrick, in the *Ent. Mo. Mag.* for February (pp. 32-36), contributes a paper which raises an important question. He draws attention to a large number of specific names proposed by an American lepidopterist for new species of *Tortricina*—names of so absurd a construction that our present author renames them all! Now which names are to be accepted? We cordially agree with everything that Mr Meyrick says, yet under the strict rules of present-day nomenclature we fear that the earlier names must stand. To realise their absurdity the lists given in the present paper must be consulted. We do think that some check ought to be put upon the vagaries of the species-describer, when he endeavours to be *too* original. If the example of this American be followed there can be no limit to the use of gibberish, and the choice of names for new species will become a farce, to say nothing of the difficulty of remembering arbitrary and meaningless combinations of letters. Against such a method of christening quite reasonable arguments might be advanced in support of the use of *numerals*. *Papilio* 1245 or *Carabus* 379, if the species be numbered in the order of discovery, would certainly tell us *something*, whereas such names as *Eucosma womonana*, *rovana*, and *kohana* (and so on *ad. lib.*), can only serve as a butt for ridicule.

In *The Field* for 6th January (p. 49) appears an interesting article on "The Scottish Wild Cat," from the pen of R. I. Pocock, the able superintendent of the Zoological Gardens, London. Portraits are given of the Scottish Cat, and of the Burmese Jungle Cat, with which our native species is compared. Reference is made to a young female recently purchased for the Gardens from an Inverness-shire gamekeeper. The correct scientific name of this interesting Scottish animal is stated to be *Felis sylvestris*, since it has been clearly shown that the name of *catus* was applied by Linnæus in the first instance to the domestic blotched or marbled tabby.

From *British Birds* (vol. v.), we note the following:—A specimen of the American form of the Peregrine (*Falco peregrinus anatum*), new to Britain, was caught on 28th September 1910, in nets used for catching Plover, at Humberstone on the Lincolnshire coast, and is recorded by Mr Caton Haigh (p. 219). A bird which was shot near Market Bosworth, Leicestershire, by Mr Whitaker, on 31st October 1891, also belongs to this form. A male Bulwer's Petrel (*Bulweria bulweri*)—a very rare wanderer to our coasts—was picked up on the shore at Pevensy, Sussex, during a gale on 24th October 1911 (recorded by H. W. Ford-Lindsay, p. 198). Several other Slender-billed Nutterackers (*Nucifraga macrorhynchus*) are recorded (pp. 191 and 225). A male Collared Flycatcher (*Muscicapa collaris*) was shot at Udimore Lane, near Winchelsea, on 12th May 1911, and another at the same place next day (J. B. Nichols, p. 238). H. W. Ford-Lindsay records (p. 247) six Ferruginous Ducks (*Fuligula nyroca*) from Crowhurst, and (p. 253) a Little Dusky Shearwater (*Puffinus godmani*) picked up dead on the shore near St Leonards-on-Sea. A Madeiran Fork-tailed Petrel (*Oceanodroma castro*) is reported by P. W. Munn (p. 252) as picked up dead on the beach at Milford, Hampshire.

An interesting paper on the first stages of *Sitaris muralis*, Forst., and *Meteocus paradoxus*, L., accompanied by three instructive photographic plates, is given by Dr T. A. Chapman in the *Ent. Mo. Mag.* for February (pp. 29-32). Interest in

these curious beetles has been recently revived by the discovery of *S. muralis* in some abundance at Oxford.

Thirty-four species of Coleoptera, including *Lesteva luctuosa*, Fauv. (new to Britain), are recorded from the Isle of Eigg, by H. St J. K. Donisthorpe, in the *Entomologist's Record* for January (pp. 13-14).

G. C. Champion, in the *Ent. Mo. Mag.* (February, p. 44), calls attention to a new species of *Omalium* described recently by G. Luze under the name of *grandiloqua*, from Scottish specimens taken by Norman H. Joy. Hitherto this beetle has been known to British Coleopterists as *O. brevicorne*, Er.

Norman H. Joy describes (*Ent. Mo. Mag.*, February, p. 44), a new variety of *Bledius arenarius* under the name of *fergussoni*. The specimens were taken by Anderson Fergusson, at Knoweside, Ayrshire.

Students of our British Wasps will find an interesting account of some observations on *Vespa germanica* by Marion Black-Hawkins in the *Zoologist* for December (pp. 457-463). The observations covered the period from 10th July to 7th September of the past summer, and many interesting facts relative to the feeding of the larvæ by the workers are recorded.

"Myrmecophilous Notes for 1911" is the title of an interesting paper by H. St J. K. Donisthorpe, which commences in the January number of the *Entomologist's Record* (pp. 4-10). The author's observations for the past year are summarised, and include numerous Scottish records. *Myrmica sulcinodis*, *M. lævinodis*, *M. scabrinodis*, *M. lobicornis*, *Leptothorax acervorum*, *Lasius flavus*, *Formica fusca*, *F. rufa* and its varieties *alpina* and *pratensis*, *F. sanguinea*, and *F. exsecta* are also mentioned in this instalment of the paper as having been taken in Scottish localities, notably Loch Rannoch, Aviemore, Nethy Bridge, and Tobermory.

The Caddis-Fly *Limnophilus subcentralis*, Brauer, is recorded by J. J. F. X. King (*Ent. Mo. Mag.*, 1911, p. 46), from Aviemore, Kinardochie Loch, (Perthshire), Loch Awe, and Nethy Bridge. Both sexes were taken in the last-mentioned locality during last August.

E. W. Sexton (*Proc. Zool. Soc.*, 1911, pp. 561-594, and pls. xvii.-xix.) gives a full account of the known species of the Amphipod Genus *Leptocheirus*, with careful descriptions, drawings of details, and full bibliography. Three species are recorded from British waters, of which one, *L. pectinatus*, is recorded for Shetland.

*Pisidium lilljeborgi*, Clessin, is recorded by J. R. le B. Tomlin (*Journal of Conchology*, January 1912, p. 273) from the Isle of Skye. This record is an addition to the fauna of the island and vice-county.

In an interesting paper in *Trans. Biol. Soc. Liverpool*, vol. xxv., 1911, Prof. W. A. Herdman and W. Riddell show that, notwithstanding the proximity of the two areas, there are considerable differences between the floating organisms of the Irish Sea and those of the west coast of Scotland. This is seen especially in the lengthening out of the diatom spring period, which reaches its maximum of fertility in May in the Irish Sea, but continues until July in western Scottish waters. Differences also occur in distribution, for on our west coast the animal plankton differs much from area to area at the same time of year, and yet year after year each locality appears to exhibit at any definite season a constancy in the character of its floating fauna.





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## ON THE STORM OF JANUARY, 1912, IN THE BAY OF ST ANDREWS.

By Prof. W. C. M<sup>U</sup>INTOSH, F.R.S.

THE recent storm, with a south-east wind, on the East Coast was fully felt in the Bay of St Andrews from the 16th January onward, and the vast masses of organisms, living and dead, thrown on the west sands formed a source of deep interest for a week. The debris extended from the Club to the Eden, and in some places was nearly knee-deep, with a breadth from high-water mark seawards here and there of a hundred yards. The mass was chiefly composed of the empty tubes of the common Terebellid (*Lanice conchilega*), and vast numbers of the common heart urchin filled with sand, intermingled throughout its entire extent with numerous bivalve and univalve shells, the former, however, being the most conspicuous, and including thousands of *Cyprina*, *Lutraria*, *Mya truncata*, *Cardium cclinatum*, swarms of *Venus exoleta*, *V. lineata*, *V. fasciata*, *Lucinopsis undata*, *Tellina balthica*, *T. tennis*, *T. fabula*, *Donax vittatus*, *Macra solida* in great profusion, along with *M. subtruncata* and *M. stultorum*. The genus *Solen* was everywhere conspicuous, viz., *S. pellucidus*, *S. ensis*, and *S. siliqua*. The boring forms, such as *Zirphæa crispata* and *Saxicava*, were apparently absent. There were comparatively few *Anomia*, common cockles and mussels, *Psammobie*, *Scrobicularie*, and *Thracie*. The most conspicuous univalves were *Buccinum*, *Patella*, *Trochus cinerarius*, *Littorine*, *Natica catena*, and *N. alderi*,

*Aporrhais*, *Fusus antiquus*. No spawn of *Buccinum undatum* was visible.

A few examples of *Eledone cirrosa* represented the Cuttlefishes.

Mingled in great numbers with the debris, or stretched in hundreds on the sand, were swarms of *Ophioglypha lacertosa*, which forms a favourite food of the gulls. A few examples of *Solaster papposus*, *S. endeca*, and *Astropecten* also occurred; but *Asterias rubens* was not common, nor were there many examples of *Echinus esculentus*, and scarcely a Holothurian.

One of the most striking features was the great abundance of the gigantic annelid *Alitta virens* (the "rigger" of the fishermen), which literally would have filled carts, and as it was, the fishermen scooped them up with their hands and placed them in sacks for bait. This fine form is often three feet in length, and probably stretches more in life, and is beautifully tinted of an iridescent bluish green variegated with the red blood-vessels on the leaf-like dorsal cirri. The under surface is of a pinkish fawn colour, and the whole animal is at once graceful and lively in movement. It is an epitokous condition of a species which occurs in considerable numbers near the pole-rock at the southern limit of the west sands, yet it must abound in other parts of the bay if not beyond it, such as near the Bell Rock. These annelids make valuable bait for both round and flat fishes, just as *Nereis cultrifera* does in the Channel Islands and the southern shores. The men place the latter in porcelain vessels with sand, and thus preserve them for some days. *Alitta* was in greatest abundance beyond the salmon-stake nets and towards the Eden, and hundreds sheltered themselves by boring in the sand. In former years the epitokous examples were found somewhat later, viz., in April and May, so that the reproductive season, as in other annelids, extends over a considerable period. Besides the foregoing annelids, a few examples of *Lagis koreni*, *Chone infundibulum*, Polynoids, *Sigalion mathilde*, and *Nerine foliosa* were obtained.

Of other Polychæta, the lobworm (*Arenicola marina*), and *Nephtys*, the rag-worm, were abundant, so that they might

have been lifted with a fork for nearly a mile; and there were, besides, a few Terebellids (chiefly *Lanice*), and many examples of *Ophelia limacina*, the soft purplish pink of which is so easily noticed amongst the debris. It is occasionally stranded in thousands. Sea-mice (*Aphrodita aculeata*) were in profusion, though less abundant than after certain storms, which strew the beach with millions.

Spoon-worms (*Echiurus pallasii*) were in large numbers chiefly towards the Eden, and no form is more characteristic of St Andrews Bay; for though Pallas first found it on the beach at Ostend, recent investigators, even at Naples, have to apply to St Andrews for good examples. Swept from their haunts in the sand they lie inert on the beach, and the proboscis in many is absent. Ripe sperm filled the so-called anterior nephridia in many.

Polyzoa were poorly represented, scarcely a tuft of *Flustra* being seen, though *Membranipora* occurred on stones and shells. The same may be said of the Hydroids, which in some storms are so conspicuous.

The higher Crustacea were represented by many examples of *Carcinus*, and a few of *Cancer pagurus*, *Hyas araneus*, and *H. coarctatus*, swarms of *Portunus holsatus*, and a few specimens of *Portumnus variegatus* and *Corystes*. One or two young lobsters about six inches in length were also stranded.

The fishes were few in number, and therefore contrasted with the condition in other cases where numerous plaice, flounders, dabs and little soles, with haddocks, cod, green cod, weevers, rocklings, gurnards, sand-eels, an occasional conger, and other forms were present. A young weever a little over an inch, two "kelts," and a few common topknots were met with on the west sands.

The stranded forms on the beach brought many gulls, from the Herring-Gull to the Great Black-backed Gull, and all fed on the molluscs and starfishes. No Hooded Crows, however, joined them, as in a great storm in 1856. Numerous Little Auks were procured, both dead and alive, at various parts of the beach, along with a few Razorbills, Guillemots, Shags and Puffins; while Mergansers frequented the east rocks.

No Storm-Petrel was observed, though this bird has not infrequently been found on the beach after a storm.

The forms stranded by this storm differed considerably from those found on other occasions. Thus there was an almost entire absence on the west sands of masses of tangles, and Fuci clothed with *Obelia*, which occasionally form long banks on the beach, and as these were now and then removed by carts at night, one of the most striking features could not be seen, viz., the brilliant phosphorescent specks which gleam in the air as each fork carried its load to the cart, which by and by also glittered all over with the tiny points of light. The absence of the seaweeds further considerably affected the abundance of Hydroids, *Æolids*, and the phosphorescent Syllids. Moreover the masses of *Halichondria panicea* attached to the roots and stems of the tangles, or binding together mussels and other shells, were absent, and with them the Nudibranchs, such as *Doris tuberculata*, which feed on them. This sponge specially abounds in the estuary of the Tay, and the direction of the wind (S.E.) probably sufficed to strew the specimens elsewhere. *Chalina oculata* and other representatives of the Porifera were rare.

The foregoing account may be compared with that of an October storm on the same beach, as given in the Introduction to the *Marine Invertebrates and Fishes of St Andrews*.<sup>1</sup> In this case immense banks of tangles and Fuci occurred, and the abundance and variety of certain forms not entered in the present note indicate the divergent features of the respective storms.

One aspect of the vast plenitude of marine animals thus swept from their haunts to perish on the beach should not escape the attention of the observant naturalist. It was formerly stated that "the waste of marine life in such storms does not attract much notice; yet it is extraordinary and so constant, that it may be regarded to some extent as a check upon its uninterrupted development." It may again be emphasised in connection with the oft-repeated cry of the "impoverishment" of the sea by man as regards food-fishes.

<sup>1</sup> Pp. 2-4, 1874.

This waste of Invertebrates makes no impression on the resources of Nature in the sea, either as regards the species themselves or those which feed on them and their larvæ. As pointed out many years ago, these comparatively sedentary inhabitants at the bottom of the sea have as a rule pelagic larvæ which rise near the surface, undergo various changes, and by and by pass downward to the bottom to rejoin their parents or people new sites. Thus the smaller fishes seize them as they go upward, whilst those more advanced prey on them as they sink downward, the constant interchange especially proving beneficial to the young food-fishes. Just as the great losses of Invertebrates caused by storms are insignificant in the economy of Nature in the sea, so the inroads of man and his varied apparatus for the capture of the food-fishes do not lead to the extinction of any species—carried on, as his operations have been, from time immemorial. The larger forms may be thinned here and there and rendered wary by constant interference, but the countless swarms of young give no evidence of diminution, and by their growth fill the depleted ranks on a given area or spread the species to new sites. It is the closely interwoven chain between the diatom and the fish which enables even those species most eagerly sought to maintain their existence after centuries of pursuit by man; and such is fortunate, since there is as yet no reliable evidence that artificial hatching of marine fishes on British shores will produce results commensurate with the expenditure involved.

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#### THE LITTLE AUK VISITATION OF 1911-12.

ONCE more we have had a Little Auk winter—that is, one in which great numbers of this Arctic sea-bird have been tempest-driven to our shores, there to die in thousands from exhaustion and hunger. Not since the memorable visitation of 1894-95 have Little Auks occurred in this country in anything like such numbers, or over so wide

a range of localities, as during the past winter, especially in the second half of January. The "wreck" of seventeen years ago was very fully reported on, so far as Scotland was concerned, by Mr Eagle Clarke, in the *Annals of Scottish Natural History* for 1895; and it is hoped that Misses Rintoul and Baxter will be able to incorporate, in more or less detail, the records of this latest *Alle alle* disaster in their annual "Report on Scottish Ornithology." Meantime, the more important facts, culled from the numerous records that have been kindly sent in by correspondents in various parts of Scotland from Shetland to the Borders, may here be mentioned.

Of the successive steps by which the birds reached our shores from their Arctic breeding-haunts—possibly in Spitzbergen—we have no knowledge. Probably the species occurs every winter more or less abundantly in some part of the North Sea—off Shetland and Orkney, for instance, or even further south—and it only requires certain weather conditions to bring the birds within our ken. Of these, severe north-easterly and easterly gales, with which the pronounced visitations are invariably associated, undoubtedly play the chief rôle. Thus, in the present instance, we find that the bulk of the records occurred during and immediately after the fierce easterly gale of 15th to 18th January, which blew with great force on our whole North Sea frontage, bringing with it an unusually high sea. But, from the records, one may infer that adverse conditions had somewhere been encountered previous to that storm. As early as the middle of November, Little Auks were seen at Auskerry (Orkney) and Fair Isle, while in the Pentland Firth (about the Skerries, etc.), they are reported to have been present in "great numbers" from early in November till the January gale. The first half of December furnishes records from such widely separated localities as Lerwick (several obtained during first week); Lochmaddy, in the Outer Hebrides (one, received at Oban on 9th); Tarbatness, E. Ross (one on 12th); and Inchkeith, in the Firth of Forth (one on 3rd, and numbers on 8th and 17th, when some were washed ashore). Later in

the month these were supplemented by others from Isle of May (24th) and both sides of the Forth (Largo district, where two were got alive inland, and Gosford); Glencaple, Dumfriesshire (one shot on 26th); and Ardmaleish Point, Kyles of Bute (one about 28th). January opened with another record from "Clyde" (one seen between Fairlie and the Greater Cumbrae on the 4th), and a few more derelicts in "Forth" (Largo Bay and Dunbar coast, 3rd to 13th).

As stated above, the gale of the middle of January was the prelude to a great increase of records, mainly of course from localities along the east coast, where, during the ensuing fortnight, Little Auks were very much in evidence, at first mostly alive, then chiefly lying dead on the beach; but not a few of the records are from inland localities, some of them far to the west and south-west, the birds in these instances having been carried by the wind virtually across Scotland before falling exhausted. From Shetland, Orkney, Golspie (E. Sutherland), Aberdeenshire and Kincardine coast, Montrose, St Andrews district, Firth of Forth and coast south to Berwickshire, came the same tale of disaster. At the Bell Rock, three or four hundred arrived on 19th January; "they seemed too tired," the lighthouse-keeper writes, "to rise out of the way of the heavy seas that were breaking, and were being tossed about in all fashions." In greatly diminished numbers they stayed till the end of the month. Many found their way into the Firth of Forth, to which a large proportion, indeed the great majority of the records, pertain. On the 18th—the last day of the gale—hundreds were seen about the May, and around the Bass diving close alongside the Rock; and during the next two or three days their presence was noted at various points along both sides of the Firth, particularly the south, as far west as Queensferry, beyond the Forth Bridge. Exhausted and dead examples immediately began to be washed ashore, each succeeding tide bringing in fresh victims, till on certain portions of the shore—notably the beach from North Berwick to Dirleton (where on the 26th the present writer counted forty-one all quite recently dead), the Longniddry section, Joppa to Leith, Granton to Cramond, and Dalmeny beach—they could be reckoned in

dozens. Passing over occurrences within a mile or two of the east coast, which were numerous, the following inland records (of single birds) due to the gale may be mentioned—they are, it will be observed, largely in the line of the Forth and Clyde connection;—Dalmuir, Dumbartonshire (17th January); Haddington, Ratho, and Kirkliston (18th); Hawick, Roxburghshire (18th); Johnstone, Renfrewshire (20th, on which day one was seen on the sea near Port William, Luce Bay, Wigtonshire); parish of Banchory, Kincardineshire (20th); River Leven, Dumbartonshire (about 21st); Dunipace and Milngavie, Stirlingshire (22nd); Mount Teviot, Roxburghshire (about 22nd); Murthly, Pitlochrie, and Blair Athol, Perthshire (all about 23rd); Dunfermline, W. Fife (24th); Lasswade, Midlothian (25th); Whauphill, Wigtownshire (27th); Loch Lomond (about same date); Motherwell, Lanarkshire (*Glas. Nat.*, iv., 63); and railway line between Edinburgh and Glasgow.

By February, which began it will be remembered during a short but severe spell of frost and snow, the majority of the birds had disappeared. Numbers, however, were flying about the Isle of May on the 2nd, and two days later many were seen in Largo Bay, while at Auskerry, Orkney, some were still passing on the 15th. Few recently dead birds were now met with, one of the latest being found on the 25th, on the shore west of Dysart, Fife. Three, nevertheless, were recorded from the West—from Muirkirk, Ayrshire, and Inversnaid, Loch Lomond (6th); and Cathcart, near Glasgow (8th), respectively.

The present visitation, though a notable one, does not appear to have been on quite so large a scale as that of 1894-95. Fewer records have come from the districts north of Forth and Clyde, south of which, however, they have extended further south-west in the direction of the Solway. As usual, all the birds examined, with the exception of one or two procured in December, were in a very emaciated condition, and in no case is food reported to have been found in the stomach. As regards plumage, there was little individual variation, but some birds, probably old males, had noticeably heavier bills than others.



England, of course, also shared in the visitation, records already published (*British Birds* for March) extending south from Northumberland to Kent and Sussex, and overland to Cheshire, Shropshire, Gloucester, and other western counties.

The storm told with disastrous effect on other sea-birds besides the Little Auks. Hundreds of Razorbills and Guillemots also lay scattered along the beaches, while numbers of Shags and Gulls (several species), some Puffins, and an occasional Diver (Red-, and Black-throated), Black Guillemot (Edenmouth), Oyster-catcher, etc., were in evidence.

SOME TREES IN WHICH THE GREAT SPOTTED  
WOODPECKER (*DENDROCOPUS MAJOR*,  
LINN.) HAS BORED OR NESTED IN  
SCOTLAND.

By the Rev. H. N. BONAR, F.Z.S., M.B.O.U.

DURING the last ten years I have had a good many opportunities of observing the nesting of the Great Spotted Woodpecker in Scotland, England, and Holland. In every case I have taken particular care to note the species of tree selected for boring into. I append a few notes concerning the trees in which I have either found the birds actually nesting, or have found borings which I had good reason to believe had been occupied in previous years. I count as "nests" those borings which the Woodpeckers have made and from which they have been ejected by Starlings. In seven or eight cases I have found newly finished borings occupied by Starlings. In one case I found four eggs of the Great Spotted Woodpecker lying broken at the foot of the tree, in the newly drilled boring of which was a Starling's nest. At present in Scotland this shameless bird is the great enemy of the Woodpecker.

In *no* case in this country have I ever found a nesting-boring in any but a dead tree or branch of a tree. But I suppose this must be accidental—for both in England and in Holland I have found nests in live trees. I have only twice in this country found a boring attempted in a growing tree, and in both cases (very curiously) the tree was an Oak where a fair-sized branch had been torn from the trunk by the wind, leaving a spot bare of bark—but in neither of these cases did the boring go any depth, though it was characteristically rounded in both cases. I therefore omit the Oak from my list of trees.

SYCAMORE (*Acer pseudo-platanus*).—I have only twice seen this tree used, but have heard of another one being found in my neighbourhood when this tree was felled.

GEAN (*Prunus avium*).—As this is not a very common woodland tree, it is not to be wondered at that I have only seen it once used.

ASH (*Fraxinus excelsior*).—This tree is pretty often bored, but not very often nested in. Ash wood when it rots goes so quickly to dust, that one can easily understand the birds desisting from boring when they find the walls crumbling away rapidly.

ELM (*Ulmus montana*, perhaps also *Ulmus campestris*).—Not very often used—perhaps its dead wood crumbles too much when bored—but I have only twice found nesting-holes in this species, which seems to be quite a suitable tree for the bird's requirements.

BIRCH (*Betula alba*).—A favourite tree. Its wood (in the year or two which elapse between its becoming dead and rotten) is easily bored and does not fly into dust, while the strong tough bark binds the whole stem together (even if it be inclined to crack) as hoops bind barrel-staves and keep them in their places. The Woodpecker seems sometimes to bore into this tree in the winter months just for the sheer joy of boring, as I once found two or three new "bores" close beside each other in February.

ALDER (*Alnus glutinosa*).—The first nesting-hole I ever found was in this species, but it is not a great favourite with the bird—probably because the Alder does not generally

grow where other trees are thick enough to give it cover.

HAZEL (*Corylus avellana*).—Very seldom does this tree grow a stem of a diameter sufficient to contain a bore. I only once found it used by Woodpeckers. They excavated a very symmetrical boring in a broken stump six or seven feet from the ground, but were evicted from their home by Starlings before they could breed.

BEECH (*Fagus sylvatica*).—This tree is a decided favourite with the bird. But as dead branches of the Beech generally occur at a considerable height from the ground, the nest often escapes notice till the young birds attract attention by their ceaseless calling.

SILVER FIR (*Abies pectinata*).—Not commonly used. I have not seen more than two instances myself, though I have heard of others.

SCOTS PINE (*Pinus sylvestris*).—In my experience the commonest tree for this bird to bore and nest in. In this tree, the dead wood suitable for boring in is generally even higher up than in the case of the Beech, and so it is very difficult to get a sight of the nest. I do not assert that this tree is the Woodpecker's favourite, but as there are so many more Scotch Firs in the south of Scotland than any other tree, there are far more nesting-sites offered by this species.

Let me add in conclusion, that I have only known two instances of this Woodpecker going back to the exact same nesting-hole the next year, though it will return to the same tree again and again, provided it can get wood enough in a condition fit for boring.

In the above, I have only drawn from my own experience in Scotland. I could have added other trees had I quoted what others have told me—and had I given my own experience outside Scotland.

THE SANDWICH TERN (*STERNA CANTIACA*)  
IN "DEE": GENERAL STATUS AND FIRST  
NESTING RECORD.

By A LANDSBOROUGH THOMSON, M.A., M.B.O.U.

WHILE publishing what appears to be the first record of the breeding of the Sandwich Tern (*Sterna cantiaca*) within the faunal area of "Dee," I take the opportunity of discussing the question of the general status of the species in the district, apart from this single isolated event. This is the more necessary owing to the incompleteness of the only published information on the subject. In his *Vertebrate Fauna of "Dee"* (1903, p. 180), the late Mr George Sim described the Sandwich Tern as "an irregular visitor": he records that "In 1864, numbers appeared in the end of July and beginning of August about the mouth of the Don, when 12 specimens were obtained, mostly young birds. Again, in 1866, from the 15th July onwards, for about ten days, a number appeared about the same place." Between 1866 and 1903 he had "not seen or heard of any others"! The only other local records I know of are Thomas Edward's statement, "observed a pair this summer, 1854," and a note by the Rev. William Serle in the *Annals of Scottish Natural History* (1906, p. 239), to the effect that he had a single record for the neighbourhood of Peterhead (no date), and that on 27th July 1906 he saw "quite a fair-sized flock" at the Loch of Strathbeg (which is close to the sea, near Rattray Head), which he suspected to have bred in the vicinity.

But during the past few years we have come to know the Sandwich Tern as a regular spring and autumn visitor in small numbers to the coast near Aberdeen. We have even a number of summer records, culminating in the finding of a nest and egg at a local colony of Common Terns and Black-headed Gulls on 11th June 1910. The following is a summary of our records of the species since we first identified it in the autumn of 1907. Most of the observations were made by my friend Mr Lewis N. G. Ramsay, M.A.,

to whom I am therefore much indebted, or jointly by him and Mr Arthur G. Davidson or myself.

In the autumn of 1907, small parties or single birds were observed from 14th September to 5th October; in 1908, from 20th August to 27th September; and in 1910, from 31st August to 3rd September. In the spring of 1908, similar records relate to observations on 3rd and 13th May, and an adult was seen on 7th July; in 1909, on 29th May and 6th June; in 1910, on 5th and 14th May, and an egg found on 11th June; in 1911, one bird on 5th May.

These data will serve to show that the status of the Sandwich Tern in the "Dee" area is considerably different from what seems indicated by the few previously published notes on the subject already referred to.

With regard to the nest and egg found on the Sands of Forvie on 11th June 1910, some further details may be given. It was in the midst of a large nesting-colony of Common Terns and Black-headed Gulls, and on the date mentioned I came on the nest by chance. I showed it to Mr Davidson later in the day, and we of course left it undisturbed, contenting ourselves with a careful examination. But when Mr Davidson visited the place some days later the egg had gone, and no more evidence was obtained that summer. We left the record unpublished, in the hope that we should learn more in 1911. But in that year also no further sign of birds or nests was discovered at Forvie.

The birds, if not in very close attendance, might well have eluded observation among the screaming cloud of other species overhead, but in any case too much importance need not be attached to their absence when incubation had not begun. The record rests entirely on the identity of the egg, but of this I think there can be no doubt.

This nest, if such it could be called, consisted merely of a very few pieces of plant stems, and was on the bare sand in a hollow between two hummocks, agreeing entirely with the habits of *Sterna cantiaca*. The egg appeared to me to be a characteristic specimen of the creamy type, and it approximated to the average dimensions.

## SOME RECORDS OF COLEOPTERA FROM NORTHERN SCOTLAND.

By D. SHARP, M.A., F.R.S.

DURING his stay in the North of Scotland in the year 1911, Colonel Yerbury collected some species of Coleoptera. His attention was chiefly devoted to the Diptera, so that the beetles he met with do not give anything like an idea of the extent of the Coleopterous fauna of the spots he collected at. Yet as records from the North of Scotland are very scanty as regards Coleoptera, I think it is worth while publishing a complete list of those he sent to me.

The localities are Dingwall in May, Inchnadamph in June, Lochinver in July, and Nethy Bridge in September. The two localities in West Sutherland (Inchnadamph and Lochinver) are the most important, because knowledge of the entomology of that region is very limited. Nethy Bridge is better known; still even there Colonel Yerbury met with two species of great interest, viz., *Amphicyllis globus*, which is a very unexpected addition to the Scottish fauna, and *Leptura sanguinolenta*, which appears in Britain to occur only in Moray, where it is extremely rare.

*Notiophilus palustris* and *N. biguttatus*, Inchnadamph; *Carabus glabratus*, Nethy Bridge and Lochinver; *C. catenulatus*, Nethy Bridge; *Leistus rufescens*, *Nebria brevicollis* and *gyllenhali*, Inchnadamph; *Calathus cistcloides* and *melanocephalus*, Nethy Bridge; *Pterostichus niger*, Inchnadamph and Nethy Bridge; *P. nigrita*, Inchnadamph; *Amara aulica*, Inchnadamph and Nethy Bridge; *Harpalus latus*, *Patrobus clavipes*, and *Trechus obtusus*, Inchnadamph; *Bembidium paludosum* and *littorale*, Nethy Bridge; *B. guttula*, Dingwall.

*Colymbetes fuscus*, Nethy Bridge; *Anacæna globulus*, Inchnadamph; *Limnebius truncatellus*, Dingwall; *Sphæridium scarabæoides*, Inchnadamph; *Cercyon hæmorrhoidale* and *laterale*, Nethy Bridge.

*Alcochara lanuginosa*, *Homalota fungi*, *Bolitobius atricapillus*, and *Tachyporus hypnorum*, Dingwall; *Tachinus proximus* and *pallipes*, Nethy Bridge; *T. rufipes*, Dingwall

and Inchnadamph; *T. laticollis* and *marginellus*, Inchnadamph; *Quedionuchus lævigatus*, Nethy Bridge; *Quedius fuliginosus*, *Staphylinus erythropterus*, *Philonthus intermedius* and *finetarius*, Inchnadamph; *P. varians*, Nethy Bridge; *Othius fulvipennis*, Inchnadamph; *Stenus oculatus*, Nethy Bridge; *Oxytelus sculpturatus* and *Lesteva bicolor*, Inchnadamph; *Omaliium rivulare*, Dingwall; *Anthobium minutum*, Inchnadamph, and *A. torquatum*, Dingwall.

*Amphicyllis globus*, Nethy Bridge; *Choleva tristis*, *Necrophorus humator*, Inchnadamph, and *N. mortuorum*, Nethy Bridge; *Silpha atrata*, *rugosa*, *nigrita*, and *thoracica*, Nethy Bridge; *Hister succicola*, Nethy Bridge; *Omosita discoidea*, Dingwall; *O. depressa*, Nethy Bridge; *Brachypterus urticae*, Inchnadamph; *Meligethes æneus* and *picipes*, Dingwall, and *M. viridescens*, Inchnadamph; *Elmis æneus*, Inchnadamph.

*Aphodius finetarius*, *ater*, *lapponum*, *rufipes*, *depressus* var. *niger*, all from Inchnadamph.

*Elater nigrinus*, Nethy Bridge; *Cryptohypnus riparius*, Inchnadamph; *Melanotus rufipes*, Nethy Bridge; *Athous niger*, Inchnadamph; *A. hæmorrhoidalis*, Dingwall; *Corymbites pectinicornis*, *cupreus*, *tessellatus*, and *quercus*, all from Inchnadamph; *Dolopius marginatus*, Inchnadamph and Nethy Bridge.

*Helodes minuta*, Dingwall; *H. marginata*, Dingwall and Nethy Bridge; *Cyphon variabilis*, Inchnadamph; *Telephorus paludosus* and *pallidus*, Inchnadamph; *T. limbatus*, Inchnadamph and Dingwall; *Malthodes marginatus*, Inchnadamph; *Clerus formicarius*, Nethy Bridge; *Otiorrhynchus maurus*, Nethy Bridge; *O. picipes*, Inchnadamph; *Phyllobius argentatus*, var., Inchnadamph; *Barynotus schoenherri*, *Polydrusus cervinus*, *Pissodes pini* and *Hylobius abietis*, all from Nethy Bridge; *Orchestes fagi*, var.?, Dingwall (this is a very strange example, but I can refer it to no other species); *Ceuthorrhynchus contractus* and *troglydites*, Dingwall; *C. ericæ*, Inchnadamph and Nethy Bridge; *Caliodes quadrimaculatus*, Dingwall; *Apion spencei*, Nethy Bridge; *A. ervi*, Dingwall; *A. flavipes*, Dingwall and Nethy Bridge; *Pityophthorus bidens*, Dingwall; *Myelophilus piniperda*, Nethy Bridge.

*Asemum striatum*, *Leptura sanguinolenta*, *Acanthocinus ædilis*, Nethy Bridge; *Donacia obscura*, Lochinver; *D. sericea*, Inchnadamph; *D. comari*, Inchnadamph and Lochinver; *Gonioctena litura*, Nethy Bridge; *Gastrophysa raphani* and *Phyllodecta vittellinæ*, Inchnadamph; *Calvia 14-guttata* and *Coccinella 10-punctata*, Nethy Bridge.

In addition to the above, Colonel Yerbury sent from Nethy Bridge a single specimen of a species of *Galerucella*. This marks a considerable extension to the north of the range of this genus in Scotland. The specimen is so peculiar that I must reserve notice of it till a more favourable opportunity.

## NOTES.

**Otters in Wigtownshire.**—On the afternoon of the 26th January last, while watching Wildfowl along the shores of the Castle Loch, lying hid among thick heather, I noticed something diving near the other side. Turning my binoculars in the direction indicated, I saw to my surprise a family party of Otters, seemingly composed of two adults and four half-grown young. They were proceeding down the loch in single file; first one would come to the surface, then dive, its long tail waving as it went down, and each would go through the same manœuvre, close on the heels of the one in front, till they looked more like a sea-serpent than anything else. Now and again all would come to the surface together, performing many gambols. Thus they proceeded down the loch, till they were lost to view behind an island.—J. G. GORDON, Corsemalzie.

**Rooks and Lapwings.**—During spring and summer cycling trips on Aberdeenshire roads, I have observed that Rooks and Lapwings are seldom to be seen together on the same field. If one sees a field, however large, with Rooks on it, one need not look for Lapwings there. I have also frequently seen a Rook attacked by Lapwings, while flying over the field appropriated by the latter. Until last summer I believed that this antipathy of Lapwings to Rooks had to do with the protection of their eggs and food supply only; that it is of a more intense and intimate nature may be inferred from the following incident:—On 1st July 1911, I was cycling into Aberdeen from Newburgh, and had reached a turn



of the road  $4\frac{1}{2}$  miles from the city, at 8.30 A.M., when suddenly I came upon a Rook flying low across the road with a struggling object in its claws. It was being vehemently attacked by two Lapwings, whose onslaught combined with my sudden appearance caused the Rook to drop the object on the road just in front of my wheel. I quickly dismounted, and found the creature to be a young Lapwing (quills fully half-grown), which was somewhat dazed, but was able to run to the side of the road after regaining its legs. I caught the little bird, which soon recovered from its fright, and applied an Aberdeen University migration ring to one of its legs. As five or six Rooks were seated on a paling on the distant side of the field from which the young bird had been lifted, I carried it some distance along the road before liberating it in an adjoining field, the parent Lapwings meantime being interested observers, and evidently approving of the sudden and interesting turn of events.—A. RUDOLF GALLOWAY.

**Migration of Fieldfares.**—Living as I do in Dumfriesshire, it is but seldom that I am witness of a marked migration of birds. On 7th November 1911, while standing near some thorn-bushes, continuous flocks of Fieldfares (*Turdus pilaris*) came from the south-east, perched on the bushes for a few seconds, and then went off again to the north-west and out of my sight. This went on for close on two hours, and I could not estimate the number of birds. It should also be remembered that flocks may have been coming and going before two o'clock, when I arrived at my point of vantage, and after four o'clock, when I left it.—HUGH S. GLADSTONE, Thornhill, Dumfriesshire.

**Rock-pipit on the Clyde Estuary.**—During visits to Cardross in November last, and in February of the present year, I noticed Rock-pipits (*Anthus obscurus*) present on the shore in fair numbers. Though the species is mentioned in the Fauna of Clyde as common on the shores of the area, the fact of its being present in numbers as far up the Clyde estuary is, perhaps, worthy of mention.—GEORGE STOUT, Glasgow.

**White Wagtails on Migration in East Ross.**—Last autumn numerous Pied Wagtails, adults and young, frequented the shore and low-lying lands of the peninsula on the point of which stands Tarbatness Lighthouse. I shot some of the young Wagtails, as I rather hoped to procure *Motacilla alba alba* on migration, and some of the birds seemed distinctly lighter on the back than the others. Two such were obtained on the coast to the south of the lighthouse on 16th September 1911, but not from the parties of

Pieds already mentioned. They have been identified as true *Motacilla alba alba*.—ANNIE C. JACKSON, Swordale.

**Tengmalm's Owl in Shetland.**—I had brought to me a Tengmalm's Owl (*Nyctala tengmalmi*), on the 23rd of January, which had been captured alive in a barn at the north end of the island of Unst. It had been injured, but I managed to keep it alive until the 19th of February. This is the third example of this visitor from the forests of Northern Europe that I have examined since coming here thirteen years ago. I have presented the specimen to the Royal Scottish Museum.—T. EDMONSTON SAXBY, Balta Sound, Unst, Shetland.

**A note on the Gannet.**—On 13th August 1911, while watching Gannets (*Sula bassana*) diving in Largo Bay, I twice saw one of these birds come to the surface with a large fish held crosswise in its beak. It had quite a struggle before it succeeded in gulping down its prey. The second time, my stepmother, Mrs Baxter, also saw the occurrence; it was the same bird both times. I have watched many hundreds of Gannets diving, but never before saw one bring a fish to the surface after the dive.—EVELYN V. BAXTER, Largo.

**Solamosse Geese.**—Under this heading, on pp. 76, 77, of the *Annals of Scottish Natural History*, 1911, Mr J. H. Gurney speculates as to the species of birds sent by Lord Crainston (or Cranston) to Lord William Howard, of Naworth Castle, in 1623 and 1633. I hazard the guess that these birds were Solan Geese (*i.e.* Gannets); and my guess is arrived at for the following reasons:—Although there is no evidence to prove that John, second Lord Cranstoun, who lived within the periods named (1623-1633) possessed any landed property outside the counties of Roxburgh and Berwick, and although he is not known to have been any connection of the families to whom the Bass Rock then belonged, it is quite probable that his lordship was aware of the gastronomic value of young Gannets. May we suppose that, having purchased some of these tasty morsels in the Edinburgh market, or, having himself been given some by an acquaintance, my Lord Cranstoun, with commendable generosity, sent them to his English friend Lord William Howard, of Naworth Castle in Cumberland? On their arrival there, they would duly be entered in the Household Book; where probably a slip of some clerk's pen described them as "Solamosse geese," or "Sollemgeese." The slip would be rendered the more likely, if the penman who made the entry was familiar with the name Solway Moss but not with the words Solan Geese. Hearing

the Gannets called Solan Geese by the man or "boyes" who brought them from Lord Cranstoun, the clerk, at least so I suppose, entered them under the name which to his ear nearest approached the term Solan Geese. Indeed, the clerk seems to have made a better shot at the words in 1633 than in 1623—if it was the same clerk. It must be noted that both presents of birds (whatever they were) arrived in August. This, as Mr J. H. Gurney points out, "would be about the time for taking them [Gannets] at the Bass Rock." It is, I think, very unlikely that Lord Cranstoun would take the trouble to send Lord William Howard domestic geese; and, as Mr Gurney again states, "wild geese would hardly have been obtainable so early in the autumn as August."

I am now able to give references for the spellings of the word Solway quoted by Mr Gurney. These in no case refer to the Solway Firth, but to Solway Moss, the field of the historic battle of 1543. Sollan Mosse and Solanmoss both appear thus spelt, with the arm of the sea spelt Solway Fyrth, in the map entitled "The Stewartrie of Annandail," in Blaeu's Atlas, 1654 (Amsterdam). Solway Moss is described as "originally Solom Moss," in the prospectus of the sale (1910) of portion of the Netherby estate in Cumberland. Whence this spelling was obtained by the compilers of the prospectus I do not know.—HUGH S. GLADSTONE, Capenoch, Thornhill.

**Occurrences of Smews in the Forth and Moray Areas and in Shetland.**—(1) On 27th January I obtained a female of this uncommon species at Aberlady Bay. It was diving in the estuary, and its gullet contained six small specimens of a Goby (*Gobius minutus*). No other birds of this species were noticed. On measurement it was found to be rather smaller than the size given by Howard Saunders for the female, viz., length, 15 inches; wing, 7½ inches. The toes were pale greenish grey; webs blackish, with a tinge of olive; bill lead colour, with terminal portion much lighter.—KENNETH C. CROSBIE, Edinburgh.

(2) During the last week of January Mr Mackintosh, game-keeper on the Dunearn estate at Dava, shot a female Smew.—ALEX. MACKENZIE, Inverness.

(3) A female Smew (*Mergus albellus*) was shot at Bressay, Shetland, on 31st January.—GEORGE W. RUSSELL, Lerwick.

**Smews and Red-necked Grebes in the Firth of Forth.**—In 1895, when the Little Auks visited the Firth of Forth in considerable numbers, there was also an influx of Smews (*Mergus albellus*) and of Red-necked Grebes (*Podiceps griseigena*). Very few of either of these birds have been observed since; but with the

appearance in the estuary of Little Auks during this winter, both these species have again been observed. Five Smews have to my knowledge been seen or obtained in January and February, and one Red-necked Grebe in February. I have no doubt others were present.—WM. EAGLE CLARKE.

**Movements of Ringed Woodcocks.**—A Woodcock, ringed "B.Q. 1911," near Langholm, Dumfriesshire, in the spring of 1911, is recorded in the *Field* of 24th February 1912, as shot near Berehaven, Co. Cork, Ireland. That is nearly four hundred miles south-west of place of ringing. In the same periodical of 10th February 1912, a Woodcock, ringed "B.2. 1911," is reported as shot near Instow, N. Devon. The letter Q. bears, in some type, a resemblance to the numeral 2, so that this bird was probably another of those marked near Langholm. If so, this would be about three hundred miles south-south-west of place of ringing. I am informed that over fifty Woodcocks were thus ringed last spring in the above-mentioned locality, and that not one so marked was shot there in the following shooting-season, when a bag of nearly two hundred Woodcock was obtained.—HUGH S. GLADSTONE, Thornhill, Dumfriesshire.

**Black-tailed Godwits in Moray.**—By the Cromarty Firth, on 13th September 1911, I had an excellent view of two Black-tailed Godwits (*Limosa belgica*), birds of the year. They stood dozing at the end of a long promontory, apparently awaiting the turn of the tide and the uncovering of the mud flats.

On 30th September I was again by the shore, and came upon a bird of the same species feeding with one or two Red-shanks by a brackish pool near the shore.—ANNIE C. JACKSON, Swordale.

**Early appearance of the Common Tern on the Clyde.**—Whilst on a short visit to Cardross with my friend D. W. Wotherpoon, on 24th February, I was surprised to see three Common Terns (*Sterna fluviatilis*). Believing that their appearance was very unusual so early in the season, I informed Mr Eagle Clarke, who tells me that, so far as he is aware, this is the earliest recorded date for the spring arrival of this species in the British Isles.—GEORGE STOUT, Glasgow.

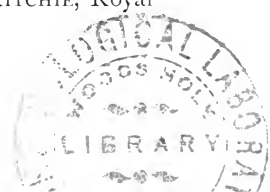
**Small Tortoise-shell Butterfly hibernating in Shetland.**—A specimen of the Small Tortoise-shell Butterfly (*Vanessa urticae*, L.) was caught in the lobby window of my house here this morning, 8th January. The weather in Shetland for some weeks past has been extremely mild, and I have pulled Auricula and other spring flowers in fairly good flower, but I did not think Butterflies would venture out quite so early.—R. B. KENNER, Lerwick.

[The occurrence of this species of Butterfly in Shetland is interesting, as it has not to our knowledge hitherto been recorded from these islands. We have seen the specimen, and are responsible for the identification.—EDS.]

**Hemiptera-Heteroptera from St Kilda.**—Among some moss, kindly collected for me by Mr Eagle Clarke at St Kilda last September, I found the following Heteroptera (one example of each), namely: *Orthostira parvula*, Fall. (brachypterous form), and *Salda saltatoria*, Linn. So far as I am aware, the only Heteropteron hitherto recorded from St Kilda is the common "water-clearer," *Velia currens* (Waterston, *Ann. Scot. Nat. Hist.*, 1906, p. 152).

In the moss there were also several specimens of the curious *Orthezia cataphracta* (one of the *Coccidae*, a family belonging to another division of the Hemiptera); but this has already been recorded more than once from St Kilda.—WILLIAM EVANS.

**The Thorny Lobster, *Palinurus vulgaris*, in the Outer Hebrides.**—Common on the south-west of England, the Thorny Lobster rapidly decreases in numbers northwards, until it all but dies out on the north of Scotland. The scarcity of this striking creature towards the northern limit of its range on the west of Scotland is well shown by the fact that observers so skilled as Prof. W. C. McIntosh and Dr Thomas Scott failed to find any trace of it during their stay on the Outer Hebrides, and that the only specimen previously known to me from these islands is a small male in the collections of the Royal Scottish Museum, captured in North Uist about 1888. Since this record was published in 1910 in my account of the distribution of the Thorny Lobster in British Waters (*Proc. Roy. Phys. Soc.*, vol. xviii., pp. 68-71), three additional examples from the Outer Hebrides have come to my notice. The first of these is a fine, large specimen in the possession of Mr Harvie-Brown, obtained several years ago at Shillay—the lighthouse island of the Monach Isles, west of North Uist. This is the most westerly Scottish locality at which the species has been found. The second specimen, examined by me in the Scottish Oceanographical Laboratory, is now in the Museum of St Benedict's Abbey, Fort Augustus. It had been received by Rev. Odo Blundell from Barra, about 8th June 1911. The third specimen, a female, was forwarded to the Royal Scottish Museum on 1st February 1912, having been taken by Mr Angus Ross outside Finsbay Loch, on the east of South Harris. The rarity of the Thorny Lobster in this area is once more emphasised by the fact that the fisherman who found and forwarded the specimen "had never seen one of the kind before."—JAMES RITCHIE, Royal Scottish Museum.



## BOOK NOTICES.

THE MIGRATION OF BIRDS, by T. A. Coward. Cambridge University Press (The Cambridge Manuals of Science and Literature). Price 1s.

This is another of the useful little Manuals of Science and Literature which are being issued by the Cambridge University Press. Mr Coward has had to condense a great deal into a very small space, and we congratulate him on the success which has crowned his efforts. The book bears evidence of much knowledge of the literature dealing with the most engrossing subject of Bird-migration, and the author has presented this knowledge to the general reader in a manner which is calculated to afford him the maximum of instruction in the minimum of space. The student of migration could not do better than begin his studies by the perusal of this book.—E. V. B. and L. J. R.

THE OPEN BOOK OF NATURE, by Rev. Charles A. Dall. London: Adam & Charles Black. Price 3s. 6d. net.

This well-written, clearly printed, and beautifully illustrated volume is intended to stimulate the study of Nature in young people, and with this aim in view should prove a success. It consists of a series of eleven chapters, treating of elementary geology, fossils, and field flowers, for the most part interestingly treated. Animal life, however, receives but scant attention, while some of the pages devoted to botany may, we fear, prove somewhat uninviting to the young reader. The four chapters dealing with "A Ramble in May" are the most attractive, and might with advantage have been placed earlier in the book. Since the volume is adorned with no fewer than sixty-two pages of illustrations, all of much merit, and sixteen being in colour, it forms an attractive gift-book, and can be recommended. We have noticed only one misprint, viz., "Cordata" for "Chordata," on p. 79.

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## GLEANINGS.

THE NEW (BELL-PETTIGREW) NATURAL HISTORY MUSEUM OF THE UNIVERSITY OF ST ANDREWS.—In connection with the remarks made in the February issue of the *Scottish Naturalist*, it may be mentioned that the late Mr Robert Walker, librarian and quæstor, was appointed Curator of the Museum in 1879, and filled the office till he died in 1881. Thereafter the late Prof. Pettigrew held the post till the session 1883-4, when the present director was appointed.

In *The Field* for 10th February 1912 (p. 251), H. W. Robinson records an Otter weighing 32 lbs. The animal was shot by Don. Maclean at Coulin, Kinlochewe, and recorded by him in the *Scotsman* dated 31st January.

In the *Manchester Memoirs* (vol. 56, 1912), Lionel W. Adams brings forward additional evidence to show that the parent generation of the Common and the Lesser Shrew suffers annual extinction. The chart of head and body measurements is especially interesting, as it clearly indicates that individuals reach their full size in the summer, and then altogether disappear. Observations on habits prove how insatiable is the appetite of the Shrew, for of all the creatures offered as food, a Wasp was the only living thing absolutely rejected.

From *British Birds* (March 1912), we note the following:—A Ferruginous Duck (*Fuligula nyroca*), female, was procured off Tacket Wood, on the Kingsbridge estuary, South Devon, on 27th January 1912 (E. A. S. Elliot, p. 280). On p. 281 J. H. Gurney records a Little Bustard (*Otis tetrax*) shot at Strumshaw, near Norwich, on 4th January, three days after the Kincardineshire one (*Scot. Nat.*, 1912, p. 44).

Richard Elmhirst publishes, in the January number of the *Zoologist* (pp. 15-20), some "Notes from the Millport Marine Biological Station." The article, which bears the sub-title "Observations on the Behaviour of Fish," deals with the shyness of recently captured specimens of various species, the presence in the Millport district of large shoals of young Herrings during the autumn months, and the changes of colour in fishes generally under the influence of various conditions.

H. St. J. K. Donisthorpe, in the *Entomologist's Record* for February (pp. 34-40), continues his interesting "Myrmecophilous Notes for 1911." Many observations, too numerous to be detailed here, were made in Scotland.

In the *Ent. Mo. Mag.* for March (pp. 56-59), is published a further instalment of the valuable paper by the late G. H. Verrall, on "Another Hundred New British Species of Diptera." The following Scottish records are of interest: *Gymnopternus brevicornis*, Staeg., Nethy Bridge; *Chrysotus varians*, Kow., Rannoch; *Porphyrops fracta*, Lw., Nethy Bridge and Brodie; and *Thrypticus divisus*, Strobl, Nairn.

*Syntenna alpicola*, Strobl, a new British fly of the Family *Mycetophilidae*, is recorded by F. Jenkinson from near Forres (*Ent. Mo. Mag.*, March 1912, p. 67.)

The genus *Hybos* (Diptera—Family *Empidæ*) has hitherto been only imperfectly understood by British workers. A short but useful paper is given by A. E. J. Carter in the *Ent. Mo. Mag.* for March (pp. 59-60), with a table pointing out the differences between our three recorded species, viz., *femoratus*, Müll., *culiciformis*, Fab., and *grossipes*, L. The last mentioned appears to be the rarest of the three, but is recorded from Perthshire and (in a footnote by J. E. Collin) Lochinver, Nethy Bridge, and Spey Bridge.

A new British flea, *Palaeopsylla kohauti*, Dampf, is interesting from the fact that it "has so far been regarded as an Eastern insect, the most western point at which it had been previously secured being Wels in Lower Austria." The three

specimens recorded by N. Charles Rothschild in the *Ent. Mo. Mag.* for March (p. 67), were taken at Ballindalloch from a Mole.

James J. F. X. King, in the *Ent. Mo. Mag.* for March (p. 66), contributes a note on *Agrion hastulatum*, Charp., at Aviemore. Many specimens of both sexes were captured last July, thus showing that this recent addition to the British list of Dragon-flies is well established in Scotland.

The Rev. James Waterston continues his interesting work on parasitic Insects, and records (*Ent. Mo. Mag.*, March 1912, pp. 61-63) two Mallophaga taken from the Snipe at Northmavine, Shetland. Their names are *Nirmus truncatus* and *Docophorus nirmoides*, var. *major*. The same author records (*tom. cit.*, p. 64) *Hæmatopinus vituli*, L., on a white calf in the same locality.

The possibilities of detailed marine zoological investigation on the west coast of Scotland are indicated in an interesting paper by Prof. J. Graham Kerr on "Loch Sween," in the February number of the *Glasgow Naturalist* (vol. iv., No. 2, pp. 33-48, pls. iii. and iv.). During several summers observations have been made on the organic life of the loch, with the result that general impressions have been gained of the bottom-fauna, and especially of the plankton. The paper is accompanied by excellent figures of larval forms of Brittle-stars, a Holothurian, and Molluscs, which, since some are unidentified, emphasise the need for further study of life-histories in suitable laboratories. The paper as a whole furnishes a strong appeal for the intensive study of marine life on our west coast.

B. Lindsay, in the *Ann. and Mag. Nat. Hist.* for March 1912 (pp. 369-374), contributes a paper "On the Boring Mollusca of St Andrews," accompanied by a plate. The main object of the article is to settle the question as to the means by which boring Molluscs perform their work, *i.e.*, whether by the aid of an acid secretion or by purely mechanical means. Three types of Mollusca were investigated, *viz.*, *Zirphæa* (*Pholas*) *crispata*, *Saxicava rugosa*, and *Tapes pullastra*. The last-mentioned species is stated to be incapable of boring or even of enlarging an existing burrow. *Zirphæa*, on the other hand, is regarded as the most highly specialised of the Pholadid borers, and its method of working is described in detail and humorously referred to as "a combination of a nutmeg-grater and a vacuum-cleaner."

In the *Journal of the Royal Microscopical Society* for February 1912 appears (pp. 9-27) an important paper by the Rev. Hilderic Friend, on "British Enchytræids." All the species of the principal genus *Fridericia* known to inhabit the British Isles are described, and records given of the localities in which they have been found. The following six species are noted for Scotland: *lobifera*, *striata*, *magna*, *bretscheri*, *michaelseni*, and *glandulosa*.





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## THE FULMAR: ITS PAST AND PRESENT DISTRIBUTION AS A BREEDING SPECIES IN THE BRITISH ISLES.<sup>1</sup>

By J. A. HARVIE-BROWN, LL.D., F.R.S.E.

### PLATE IV.

IN the following account of the now numerous British colonies of the Fulmar (*Fulmarus glacialis*), we begin with those in Shetland, follow the geographical sequence south to the north coast of the mainland of Scotland, then west to the Outer Hebrides, and end with the recently established colony on the coast of Ireland. But before proceeding to the details of the survey, we desire to recall two important facts in the history of this arctic and sub-arctic bird: first, that the nearest breeding-haunts north of Shetland are in the Faroes, where the species established itself so comparatively recently as about 1839; and secondly, that the St Kilda colony, which dates back at least to the times of our earliest writers some two hundred and fifty years ago, was for long an isolated southern outpost, and the only one within the British area. In our series of Vertebrate Faunas of Scotland the status of the Fulmar in the several areas was fully treated of down to 1904, the date of the volume on *North-west Highlands and Skye*, and to that point our present notes cannot avoid being largely a repetition of what we

<sup>1</sup> This paper forms part of an account of the past and present status of the Fulmar throughout its entire range, which we have recently drawn up. The introduction and the extra-British portion will, it is hoped, be published shortly through another channel.—J. A. H.-B.

have before published. But in a comprehensive treatment of the subject this is perhaps excusable.

#### SHETLAND.

Records regarding the Fulmar in Shetland are negative as to the nesting of the species previous to 1878. But it is true that writers down to Saxby's time (he died in 1871) spoke of it as occurring at a distance from land of some ten to twenty or twenty-five miles, during about one month in summer—say from the end of May till the end of June or beginning of July. Birds were seen usually west and north of Shetland, and they generally approached the fishing-boats from the north or north-east, and retired towards the same direction. Further, adults were spoken of as scarce up to about the year 1871.<sup>1</sup>

They, however, established their first colony in Foula at a date comparatively early (as comparing with the dates at other Scottish localities), viz., in or prior to 1878—*auct.* J. T. Garriock, who first recorded their establishment, by about a dozen pairs, in June of that year (*Zool.*, 1879, p. 380).

The following year about twenty pairs took up stations. A stranded whale which the first comers followed up, is said to have been the immediate attraction to them; but the same story has been told of birds at other places. In any case, such advents can hardly be considered as primary or sole causes of their taking up quarters, but that they are very likely auxiliary causes there cannot be much doubt, and we consider that they may in many instances be accepted as such.

Foula, it may here be mentioned, is distant from Suderoe, Faroes, about one hundred and fifty-four miles, and from St Kilda, two hundred and forty-four.

In 1887 A. H. Evans and Powys found no more than eight pairs on the lower cliffs of East Haevdi (in Foula), and as many more on the 800-foot precipices to the westward, "and this after they examined them all with the greatest care, both from above and below." All of these sites "were

<sup>1</sup> By adults, Saxby understood birds "with the pure white head and under parts."

quite at the top of the cliffs and protected by the overhanging summit"—(see also later on under Handa). The first occupants almost invariably select the most inaccessible places. Hence very likely later arrivals, or younger birds bred there, are driven off by the older or parent birds to search for similar safe sites elsewhere—a wise provision of Nature to provide for the establishment of the race "over-seas," as in the case of even human emigrants, who leave Britain to take up homes in foreign lands or establish new dominions.

A second colony, with little doubt an overflow from Foula, about 1891 reached and possessed the Horn of Papa, off Papa Stour, opposite to Foula. Here the nests were again selected under overhanging cliff-tops, and in the most secure situations. But little increase took place by 1895, when A. H. Evans visited the place. It seems possible that some accounts become exaggerated in passing from one observer to another, but we believe the truer explanation of such differences may lie in the simple fact—as already stated—that newer arrivals, or younger birds, get driven off because the safer sites are all or nearly all already taken up.

In due course other colonisations took place at Calder's Geo, Eshaness (Mainland), in 1896, where a pair was seen in 1895—*auct.* Thomas Thomason, crofter at Priesthoulland; and at Hermaness (Unst), by 1897—*auct.* O. A. J. Lee, who that year counted about eleven pairs at Humla Stack, twenty-eight on Flouravoug, five on Neap, and thirteen on Tonga. In 1897 R. Godfrey saw Fulmars on the following three localities at Saxavord (Unst)—namely, Leerawick, the north face, and Ruska Kame. They were also reported on the Ramna Stacks, at the extreme north of Mainland; and at Noup of Noss, on the east, near Lerwick, they were found breeding in June 1898 (R. Godfrey, *Ann. Scot. Nat. Hist.*, 1899, p. 53). At Fitful Head, in the south of Mainland, a pair or two were first seen in 1900, and in 1905 there were about thirty pairs nesting (N. B. Kinnear, *ibid.*, 1905, p. 246). On Whalsey and Yell they were breeding in 1906 (J. S. Tulloch, *ibid.*, 1906, p. 240). To Isle of Uyea, north-west point of Mainland, they are reported to have come in 1902

from Foula, then to the Point of Fethaland, and then to the Isle of Gruney (R. C. Haldane). In *British Birds* for December last, Thos. Ground states that he saw six or eight pairs on Noup o' Norby, Sandness, west coast of Shetland, in June 1901.

#### FAIR ISLE.

In sequence of geographical position towards the south we must now say a few words regarding Fair Isle, our "Scottish Heligoland," as regards migrants.

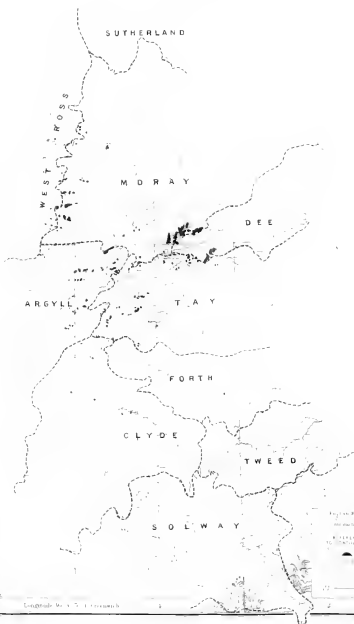
The exact date when the first Fulmars visited and took up home in Fair Isle is, so far as I am aware, uncertain. However, that accomplished fact only dates back some three or four years from 1905, say to 1901 or 1902, in the latter of which a few of the birds, but no nests, were observed. In 1903 about a dozen pairs were nesting at the north-west end of the island, and some probably also at the Sheep Craig. Since then other suitable places have been occupied (Eagle Clarke, *Ann. Scot. Nat. Hist.*, 1906, p. 79); and in 1907 birds were noted to have appeared at the stations there even as early in the season as 17th January (*ibid.*, 1907, p. 80).

#### ORKNEY.

So long ago as 1837, Robert Dunn gave a clear account of the status of the Fulmar in Shetland and Orkney. He tells us that the Fulmar was an occasional visitor to the Shetland Isles "during the winter in stormy weather," and he was "not aware of its having been seen in Orkney."<sup>1</sup>

Now, about this time, as has been mentioned above, Fulmars had made first colonisation of Faroe, but Shetland (Foula) was not tenanted until 1878, or after forty years had elapsed. It may be useful to remember this, and so compare the more rapid advances which have succeeded in Britain, especially if we still consider that St Kilda has exercised any influence at all upon their extension. I mention it here to keep further argument, either way, before our readers.

<sup>1</sup> *The Ornithologists' Guide to the Islands of Orkney and Shetland*, by Robert Dunn, Animal Preserver, Hull (London: Richard Taylor, etc., 1837), p. 115.



MAP OF SCOTLAND  
1891-1901



The earliest positive record of Fulmars breeding in Orkney appears to be that of the late James Tomison, who observed them nesting at Hoy Head in 1900, in 1901 about thirty to forty nests, and in 1902 over fifty (*Ann. Scot. Nat. Hist.*, 1904, p. 94). But there is some evidence that they were there a few years earlier, for Mr Ground tells us (*British Birds*, 1911, p. 198) that in May 1896 he found a dead Fulmar at Stromness containing "a fully-shelled egg ready for extrusion," and was informed at the time that a few pairs had established themselves on Hoy.<sup>1</sup> According to E. B. Dunlop (*Ann. Scot. Nat. Hist.*, 1911, p. 246) there were hundreds of pairs breeding last year between Kame and the Old Man of Hoy; they have also greatly increased further south on the west coast of the island, and have now put in an appearance (three pairs) at the south end. Strangely enough, A. H. Evans when visiting the Hoy cliffs the same season in a motor-launch did not see a trace of the birds there from below.

On 8th June 1901, a number of Fulmars were seen building nests in Westray (*Ann. Scot. Nat. Hist.*, 1902, p. 199), and during the summer of 1907 several pairs were observed frequenting the cliffs between Stromness and Bay of Skail (J. Walpole-Bond, *Country Life*, 7th December 1907). Lastly, there is the statement over the initials "M. S." in the *Scotsman* of 22nd July 1911, that six or eight pairs were nesting that summer on the cliffs of Deerness (east side of Mainland), and also on Copinshay.

As regards Stack and Skerry<sup>2</sup> there is not much to relate. In July 1889, Harvie-Brown saw one solitary Fulmar circling round the Stack—the Orkney home of the Gannet—evidently taking a careful survey of its position and "bold-to" aspect, with perhaps a view to future occupancy. This bird had the usual grey mantle, but with slightly darker markings on the back—probably indicating youth.

During the spring of 1901, and again in 1902, one or two

<sup>1</sup> The year 1891 has been several times cited in error as the date of their first nesting in Hoy (cf. *British Birds*, March 1912, p. 287).

<sup>2</sup> Frequently, but as we have elsewhere shown, erroneously called Sule Skerry.—J. A. H.-B.

birds at a time were frequently seen about Skerry, on which the lighthouse stands (Tomison, *Ann. Scot. Nat. Hist.*, 1904, p. 94), and on 2nd February 1909 one was killed at the lantern (*ibid.*, 1910, p. 211).

(*To be continued.*)

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## NOTES ON THE PLUMAGE OF THE FULMAR PETREL.

By WM. EAGLE CLARKE.

THOUGH the Fulmar Petrel (*Fulmarus glacialis*) has been known as a native of the British Isles for over two hundred years, yet there seems to be a singular dearth of information regarding its first plumage. This, strange to say, is not described in most of the numerous histories of British birds, nor in the monograph of the Tubinares of Salvin (*British Museum Catalogue of Birds*, vol. xxv.), nor the recent great work by Godman, and only inadequately in one or two works.

During my visits to St Kilda in the autumns of 1910 and 1911, I was able to secure several specimens which were just able to fly, some of them with a small amount of nestling down still adhering to the lower part of the abdomen.

In these young birds the grey upper plumage is decidedly *paler* and more uniform in tint than that of the adults, while their heads, necks, and under surface are *pure* white, and silky in appearance—in the older birds these white parts have a yellowish hue.

The young birds have the mantle, scapulars, and wings (except the primaries and secondaries) of a delicate silvery grey, each feather having a whitish margin. The lower back and tail are paler grey, the feathers of the latter having white tips. The outer webs of the primaries and secondaries are dark slate-grey. The feet are livid white, and the bill is rather paler in its varied colours than in the adult. Both young and old have a dusky patch of hair-like feathers in



front of the eye. This description also applies to specimens captured off Fitful Head, Shetland, in May.

In the adults some of the feathers of the mantle and scapulars are edged with ashy brown, as are also some of the outer webs of the wing coverts—a feature seldom mentioned in descriptions. These brown markings are, however, somewhat irregularly distributed, and impart a mottled appearance to the upper plumage. The white portions of the plumage are not pure white, as is generally stated, but have a yellow cast, as already mentioned. The following is a detailed description of the complicated coloration of the bill taken a few moments after death. *Upper mandible*.—Nasal tubes light bluish grey with black freckles, orifice black; culmen plate greenish brown, brownish horn-colour at its apical hook; upper maxillary plate light bluish grey; lower maxillary plate pale horn-colour. *Under mandible*.—Ventral plate pale greenish horn-colour; dorsal plate pinkish olive at base, passing to slate colour at apex; terminal plate horn-colour. Feet pale greenish grey, the webs lighter. Irides dark hazel. This description of the adult plumage is taken from specimens procured at St Kilda in September, and at Fair Isle in April and May.

The Fulmar is either a dimorphic species, or there are two races of it, a pale and a dark form. The dark bird is said to predominate on the north coast of Iceland and in Greenland, and to breed there in incredible numbers. The Duchess of Bedford, however, informs me that none of these dark birds were observed among the great numbers of Fulmars which came under her notice at Grimsey, an island off the north coast of Iceland, in July 1910. This form has been detected in small numbers among the vast throng of Fulmars which are such a marked feature in the bird-life of St Kilda, and several have been snared on the breeding-ledges at different times in recent years;—one was observed among the nesting Fulmars at Soay in the summer of 1911. It is well known to the St Kildans, who designate it the "Blue Fulmar," on account of its being "blue all over," including the bill. These dark Fulmars have been erroneously regarded by some authors as immature birds.

Entirely white birds also occur, but these may be cases of albinism. I got one pure white young bird, which had been captured at St Kilda in August 1910, but I was unable to ascertain whether the eyes of this example were those characteristic of an albino, or of the normal type. The feet of this specimen were pale pink.

At St Kilda the birds begin to leave soon after the young are able to fly. They are to be seen in thousands sailing along the faces of the cliffs, and alighting on their ledges, down to the middle of September. After this their numbers fall off, and practically all have moved out to sea by the end of the month. They return, however, after four or five weeks' absence, and are present all the winter. The object in seeking the main is, in my opinion, to go through the process of moulting there. None of the examples secured by me in September show signs of moulting, but a bird obtained in the first week of November exhibits unmistakable traces of having just passed through its change of plumage.

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#### A LIST OF THE ANTS (*HETEROGYNA* OR *FORMICIDÆ*) OF THE FORTH AREA.

By WILLIAM EVANS, F.R.S.E.

THERE is a growing tendency among those who work at the British Fauna from the distributional standpoint to adopt the Watsonian system of counties and vice-counties so long employed by the botanists. The section of our fauna that has been most thoroughly worked on these lines is the Land and Freshwater Mollusca; and, as regards Scotland, there are Mr Balfour Brown's recent papers on the Water-beetles, and my list of the Dragon-flies. Now there is promised shortly the distribution of the British Ants on the same lines, by Mr Horace Donisthorpe, and it is in connection with his work that the following records for the counties falling within the Forth drainage area have been put together. They are for the most part based on specimens collected by me ten to fifteen years ago, and form part of the

data for a comprehensive account of the Aculeate Hymenoptera of the district which I have for some time had in hand. In general, localised records will not, I understand from Mr Donisthorpe, be given in his paper, but only a list of the counties and vice-counties in which each species is known to have occurred. Unfortunately it not infrequently happens that a county is partly in one drainage area and partly in another. Thus, while the corner of Berwickshire north of St Abb's Head lighthouse is in "Forth," all the rest of the county is in "Tweed." Similarly, fractions of Peeblesshire at Portmore Loch and Carlops are in "Forth." On the other hand, a corner of Midlothian (Edinburgh) has to be conceded by "Forth" to "Tweed." Then, Stirlingshire falls to be divided between "Forth" and "Clyde," and Fife between "Forth" and "Tay." In the following list the Watsonian numbers therefore signify in these instances only the portions of the counties lying within the boundary-line of "Forth."

Reckoning as species—which some authorities consider they are—the five forms covered by the old name *Myrmica rubra* (L.), it will be seen that we have eleven species of Ants in the Forth area. The "hill" Ant (*Formica rufa*) occurs only in the western or Perthshire, that is to say, the Highland section of the valley, and one or two others appear to be very local. The rest are all common and widely distributed, *Formica fusca* and *Myrmica ruginodis* having been taken in each of the eight comital divisions. *Lasius umbratus* race *mixtus* is as yet somewhat of a puzzle to me; I have so far met with it only in company with, or in the neighbourhood of *L. flavus*, a fact which seems to stand in need of explanation.

As an introduced species *Monomorium pharaonis* (L.) has on several occasions made its appearance in Edinburgh hotels, and a number of other foreign Ants occur in hot-houses, but these form no part of our fauna.

#### LIST OF SPECIES, WITH LOCALITIES.

*Note.*—81 = Berwickshire, 82 = Haddington, 83 = Edinburgh, 84 = Linlithgow, 85 = Fife and Kinross, 86 = Stirling, 87 = S.W. Perth and Clackmannan, 78 = Peebles.

#### FORMICA RUFa, *Linn.*

87. Aberfoyle and Loch Ard side, Pass of Leny, Trossachs, and

Brig o' Turk. I have a specimen from Cambusmore, on the east side of Callander, but have not seen a nest there.

FORMICA FUSCA, *Latr.*

81. Pease Dean and St Abb's Head.
82. Longniddry, North Berwick, Dunbar, Lammermuirs above Garvald, Kidlaw, Fidra Island, etc.
83. Salisbury Crags and Arthur Seat, Blackford Hill, Comiston, Polton, Inveresk, Pathhead, Gorebridge, Bonaly Hill and Glencorse Reservoir (Pentlands), Newpark, etc.
84. South Queensferry, Binny Craig, Bo'ness, Craigiehall, etc.
85. North Queensferry and Inverkeithing, Oakley and Saline, Aberdour, Kinghorn, Thornton, Kilconquhar, Markinch, Mawcarse, Blair Adam, etc.
86. Denny Hills, Manuel, Avonbridge.
87. Culross, Dollar, Ochils above Menstrie, Aberfoyle, Callander, and Ben Ledi, etc.
78. Near Carlops, Peeblesshire.

LASIUS UMBRATUS, *Nyl.*

82. Luffness Links, ♀, Sept. 1893 (W. Evans, *Ent. Mo. Mag.*, 1900, p. 265).
83. Race *mixtus*, Nyl.: banks of South Esk, Dalkeith Park, 2 ♀ ♀ taken along with several of the next species, 23rd Sept. 1903, from a big swarm.
85. Same race: Isle of May, ♀, Sept. 1888 (confirmed by E. Saunders), ♀ ♀ and ♂ ♂ (two nests of latter), 1910 and 1911. Recorded from the May by P. H. Grimshaw (*Ann. Scot. Nat. Hist.*, 1908, p. 90). *Cf.* also note by Donisthorpe—who has kindly identified some of my specimens—in *Ent. Rev.*, 1911.

LASIUS FLAVUS, *De G.*

81. Cockburnspath (J. Hardy), St Abb's Head.
82. Railway bank at Dunbar, Gullane, Fidra Island.
83. Arthur Seat and Salisbury Crags, banks of the South Esk in Dalkeith Park, Glencorse Reservoir and Torduff (Pentlands). Dalmahoy Hills.
84. South Queensferry, Dalmeny Park.
85. North Queensferry, Inverkeithing, St Davids, Aberdour, Burntisland, Kinghorn, Elie, Isle of May (Sept. 1888 onwards).
87. Ochils above Castle Campbell and Menstrie, Aberfoyle, Balquhiddel, Abbey Craig.
78. Portmore Loch.

LASIUS NIGER, *Linn.*

81. Cockburnspath.
82. Longniddry, Luffness, Gullane and Dirleton Links, Tynninghame, Dunbar.
83. Morningside, Craigentenny Meadows, Musselburgh Links and Levenhall Quarry, Dalhousie.
84. Kirkliston (S. E. Brock), Craigiehall.
85. Pettycur, Kinross, Isle of May.
87. Bridge of Allan, Pass of Leny.

LEPTOTHORAX ACERVORUM, *Fab.*

82. Saltoun.
83. Salisbury Crags, Polton, Ravensnook near Penicuik, Bavelaw, Ravelrig-toll Moss, Kirknewton, Newpark, Torduff (Pentlands).
84. Rocks at foot of Binny Craig.
85. Thornton, Blair Adam.
86. Near Falkirk.
87. Roman Camp, etc., near Callander; Keltie Glen, Aberfoyle.
78. Macbiehill, Peeblesshire; but this is in "Tweed."

The following are by some looked upon as "races" of a single species, *Myrmica rubra*, (Linn.) :—

MYRMICA SULCINODIS, *Nyl.*

83. Bavelaw Moss near Balerno, ♀, June 1899.

MYRMICA LEVINODIS, *Nyl.*

82. Dunbar, several ♀ ♀, July 1900.
85. Isle of May, ♀ ♀ from nest, July 1897.

MYRMICA RUGINODIS, *Nyl.*

81. St Abb's Head.
82. Ormiston, Luffness, Dunbar, Castle Moffat, Lammerlaw, etc.
83. Salisbury Crags, Braid Hills, Pathhead near Dalkeith, Tynehead, Gorebridge, Gladhouse, Glencorse and summit of Caerketton (Pentlands), Bonaly, Bavelaw, Dalmahoy Hills, Selms Moor, Newpark, etc.
84. Ecclesmachan, Bo'ness, Torphichen Hills.
85. North Queensferry, Aberdour, Kinghorn, Thornton, West Wemyss, Largo, Crail, Isle of May, Markinch, Lomond Hills, Leslie, Blair Adam, Cleish Hills, Saline, Oakley, Charlestown.
86. Denny, Manuel, Avonbridge.

87. Culross, Forest Mill, Dollar, Menstrie Glen, Aberfoyle, Callander, Ben Ledi, Balquhidder.  
78. Portmore Loch and Carlops.

MYRMICA SCABRINODIS, *Nyl.*

82. Luffness Links, ♂ ♀, Aug. 1896.  
83. Dalmahoy Hills, ♀ ♀ and ♀ ♀ in nest, April 1899.  
84. Dalmeny Park.  
85. St Davids, June, 1900; North Queensferry, several nests, April 1905; West Wemyss, nests common under stones, April 1906; Isle of May, 1910 and 1911.  
86. Near Manuel, two nests, March 1912.  
87. Castle Campbell near Dollar, ♀ ♀, July 1902; Aberfoyle, ♂, Sept. 1907.

MYRMICA LOBICORNIS, *Nyl.*

82. North Berwick, ♀ ♀, Aug. 1897.  
83. Near Inveresk, nest, May 1900.  
85. Kinghorn, ♀ ♀, May 1900.  
87. Callander, ♀, April 1900.

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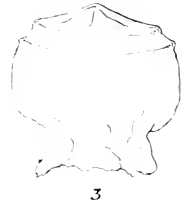
FURTHER CONTRIBUTIONS TO OUR KNOWLEDGE OF THE RHIZOPODA AND HELIOZOA OF SCOTLAND.

By JAMES MEIKLE BROWN, B.Sc., F.L.S.

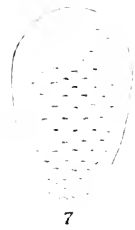
## PLATE V.

SINCE my previous communication dealing with the Rhizopoda and Heliozoa (*Ann. Scot. Nat. Hist.*, October 1911), I have had the opportunity of examining a large quantity of material very kindly supplied to me by Mr Wm. Evans, to whom I wish to express my indebtedness and thanks for his generosity. The material consisted of bundles of ground moss, some very wet, collected by Mr Evans himself in the Isle of May and on the Bass Rock, on the east coast of Scotland; and some further similar material gathered by Mr Eagle Clarke in St Kilda, off the west coast.

No sphagnum was included in any of the samples



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submitted; and seeing, as I learn from Mr Evans, this does not occur at all on either the Isle of May or on the Bass, their Rhizopod fauna should prove particularly interesting, as we shall be dealing with moss-dwellers as distinct from sphagnum-dwellers. Sphagnum does, however, occur in St Kilda, but was absent from the material examined, and several typical sphagnum types of Rhizopod were present in small numbers (e.g., *Nebela tubulata*, *Sphenoderia fissirostris*, *Placocysta jurassica*). As previously pointed out, it is now well known, thanks especially to the work of Greeff and of Dr Penard, that certain species of Rhizopod occur in the drier mosses, and not elsewhere; and that these species are generally somewhat peculiar in structure in adaptation to their comparatively dry habitat. Many of the species found in these situations, however, also occur elsewhere, but they frequently exhibit a less robust build and show more irregularity of form in the drier habitat (*see* Pl. V., Figs. 9 and 15); while others again seem to reach their maximum development in the ground mosses. This I believe to be true for *Sphenoderia dentata* and *Trinema enchelys*. There always occur in material of this type numbers of obscure and small forms of Rhizopod life which are determined with great difficulty, and as special attention does not seem to have been given to them in this country, it is not surprising that undescribed species should be found on careful search; but in the absence of a knowledge of their life-history, one feels some doubts as to the advisability of adding new species to the already lengthening list. It is only after continued observation on large numbers of individuals obtained from widely separated localities, that two new species are here described.

*CORYCIA RADIATA*, n. sp. (Pl. V., Figs. 1-4).—This species has the general characters of the genus, the protoplasmic body being enclosed in a sac-like envelope or test, provided with a widely open ventral aperture. It differs from *C. flava*, apart from its small size, especially in the characters of the dorsal region of the envelope. As in that species, the test may be supposed to consist of two regions, an upper or dorsal (posterior) portion, rigid, of fixed outline, formed

of a transparent and colourless chitinoid membrane, passing gradually into a lower ventral (anterior) portion, consisting of a much more delicate, thin, transparent pellicle, very deformable, always exhibiting foldings and wrinklins; it may be widely open below, and again may completely close the "mouth" of the test by infolding, while sometimes it seems to be partially introverted. Seen from above, the test is circular in outline. The dorsal (posterior) face is margined by two concentric circular ridges, appearing as circles (Pl. V., Figs. 1-4); and from its central point, seven (sometimes eight) ridges (lines) radiate towards the margin. Side view shows that the dorsal region or fundus instead of having the form of a rounded dome (as in *C. flava*) is much flattened, and only slightly raised towards the centre, generally giving it a low conical form, from the apex of which the seven or eight radial ridges originate. The circular and radial ridges are produced by a slight thickening and elevation of the substance of the test, and may be compared with the rampart of *C. penardi* and the horns of *C. coronata*, and their presence naturally adds rigidity to this part of the envelope. They are invariably present, and give a very distinctive appearance even to the empty envelope (Pl. V., Fig. 3).

From the outer and more ventral transverse ridge the lateral margins of the envelope descend in a more or less regular curve, bulging slightly at first, then narrowing, and pass gradually into the ventral wrinkled region.

No foreign matter occurs on any part of the test.

The protoplasmic body does not nearly fill the envelope, and no epipodes were observed. In the resting state, it has the form of a rounded or oval mass of greyish protoplasm, containing numerous granules and small food-bodies, and enclosing one or more vacuoles. The nucleus is small and not always conspicuous. Sometimes the body extends and protrudes partially through the aperture of the test as an irregular mass, but no pseudopodia were seen. The inner body of such extended individuals was highly vacuolated. Movement is very sluggish.

*Size*.—Small; varying from 24-30  $\mu$  in diameter.

*Locality*.—Ground moss. Ecclesall (Sheffield), 1910; Bass Rock and Isle of May, 1911; St Kilda, 1911; Dore (Derbyshire), Surrey, 1911.

EUGLYPHA DENTICULATA, n. sp. (Pl. V., Figs. 5-11).—In broad view the test is ovoid (oviform), bluntly rounded posteriorly, broadest about one-third the length from the posterior end, from which point the lateral margins descend, narrowing very slightly at first, then more abruptly, to the borders of the much-contracted mouth. The test is compressed laterally to about one-half the width, giving an elliptical outline to both dorsal and narrow side views. No spines are present, and the test is transparent and colourless.

The surface appearance is very characteristic. The plates, which are small and numerous, are elongated with obtusely rounded ends, and arranged in regular rows alternately placed, and so disposed that considerable overlapping is produced from end to end, and only very slight from side to side (Pl. V., Fig. 11). The imbricated end-portions stand out very prominently, while the lateral margins are indistinctly seen, and this gives on superficial examination a scalariform appearance to the surface of the test (Pl. V., Figs. 6 and 7).

The mouth is elliptical, obscure, and much contracted, and the outline of the end-plates not easily seen. Towards the mouth the arrangement of the plates becomes less regular, and the aperture itself is bordered by several (eight or nine) rather irregularly arranged pointed plates, not always of equal size, producing an unevenly denticulate appearance.

The protoplasm is normal, and practically fills the test. The posterior portion is clear, containing the distinctly seen nucleus. The middle portion contains granules and food bodies, while the anterior region is hyaline, and in the active animal projects through the mouth aperture as a clear mass, from which arise numerous delicate elongate pseudopodia.

*Size*.—Length, from 43 to 48  $\mu$ ; breadth, from 23 to 28  $\mu$ . The proportions are slightly variable, and irregularly formed specimens (Fig. 9) are occasionally seen.

*Locality*.—Ground moss. Aberfoyle, 1910; Duddon

(Lancashire), 1910; Isle of May, 1911; St Kilda, 1911; Surrey, 1911.

The species is readily recognised by its compressed oval outline, contracted denticulate mouth, and surface appearance. It is difficult to say to what species it is most closely related.

## TABLE OF SPECIES FOUND.

## I. RHIZOPODA.

LIST OF SPECIES.	Bass Rock.	Isle of May.	St. Kilda.
<i>Amœba proteus</i> , Pallas . . . . .		×	
<i>limax</i> , Dujardin . . . . .		×	×
<i>verrucosa</i> , Ehrenb. . . . .	×	×	
<i>striata</i> , Penard . . . . .		×	
<i>Dactylosphærium radiosum</i> (Ehrenb.), Bütschli . . . . .		×	
<i>Corycia radiata</i> , n. sp. . . . .	×		×
<i>Pseudochlamys patella</i> , Clap. et. Lach. . . . .		×	
<i>Arcella arenaria</i> , Greeff . . . . .	×		
<i>Centropyxis aculeata</i> (Ehrenb.), Stein . . . . .		×	
<i>Diffugia globulus</i> , Ehrenb. . . . .	×		×
<i>constricta</i> (Ehrenb.), Leidy . . . . .	×	×	×
<i>lucida</i> , Penard . . . . .		×	
<i>Cryptodiffugia oviformis</i> , Penard . . . . .		×	×
<i>Nebela collaris</i> (Ehrenb.), Leidy . . . . .		×	×
<i>tincta</i> (Leidy), Awerintz . . . . .		×	×
<i>lageniformis</i> , Penard . . . . .	×	×	×
<i>militaris</i> , Penard . . . . .			×
<i>tubulata</i> , Brown . . . . .			×
<i>bigibbosa</i> , Penard . . . . .			×
<i>dentistoma</i> , Penard . . . . .		×	×
<i>Quadrula symmetrica</i> (Wallich), Schulze . . . . .		×	×
<i>irregularis</i> , Archer . . . . .		×	
<i>Heleopera sylvatica</i> , Penard . . . . .		×	
<i>petricola</i> , Leidy . . . . .		×	
<i>rosea</i> , Penard . . . . .			×
<i>Capsellina timida</i> , Brown . . . . .			×
<i>Euglypha ciliata</i> (Ehrenb.), Leidy . . . . .		×	×
<i>strigosa</i> (Ehrenb.) Leidy . . . . .		×	×
<i>compressa</i> , Carter . . . . .	×	×	×
<i>filifera</i> , Penard . . . . .		×	×
<i>bryophila</i> , Brown . . . . .		×	
<i>lævis</i> , Perty . . . . .		×	×
<i>denticulata</i> , n. sp. . . . .		×	×
<i>Placocysta jurasica</i> , Penard . . . . .			×
<i>Assulina muscorum</i> , Greeff . . . . .	×	×	×
<i>Cyphoderia ampulla</i> (Ehrenb.), Leidy . . . . .			×
<i>Sphenoderia fissirostris</i> , Penard . . . . .			×
<i>dentata</i> , Penard . . . . .	×	×	×
<i>Trinema enchelys</i> (Ehrenb.), Leidy . . . . .	×	×	×
<i>var. galeata</i> , Penard . . . . .		×	×
<i>lineare</i> , Penard . . . . .	×	×	×
<i>complanatum</i> , Penard . . . . .		×	×
<i>Corythion dubium</i> , Taran'k . . . . .	×	×	×
<i>pulchellum</i> , Penard . . . . .	×	×	×

## 2. HELIOZOA.

Heliozoa are never abundant in the drier moss collections, but in some of the wetter tufts (probably originally submerged) from the Isle of May, the following were identified:—

*Actinophrys sol*, Ehrenb.

*Acanthocystis erinaceus*, Penard, with rather longer spines than Dr Penard's figure shows.<sup>1</sup>

*Acanthocystis pertyana*, Archer.

*Pompholyxophrys ovuligera*, Penard.

GENERAL REMARKS.—Numerous small *Amœbæ* or amœbulæ occurred, but without showing characters sufficiently distinctive to refer them to particular species.

A noticeable feature was the almost complete absence of Diffugiæ, no species being at all common, and most of those one expects in moss being quite absent.<sup>2</sup> Similarly the only *Nebela* at all plentiful was *N. tincta*. In the St Kilda material, a few empty tests of *N. militaris* and *N. tubulata* were found, and these were probably stray specimens from sphagnum.

The abundance of *Sphenoderia dentata* in an active condition in the Isle of May and St Kilda material was noticeable. It was present under two forms—the ordinary elliptical type (Fig. 12), and a second smaller (33  $\mu$ ) more rounded variety (Fig. 13), with plates much more distinctly imbricated (Fig. 14), and generally heavier looking. Many individuals were charged with discs, preparatory to reproduction (as in the specimen shown in Fig. 13).

*Capsellina timida*, previously described from Sheffield and Cumberland, was present in the St Kilda moss in numbers, and was quite typical. The animals also contained comparatively large food-bodies, confirming my previous observations on this point.<sup>3</sup>

*Heleopera sylvatica*, a rather uncommon species, occurred in the Isle of May in very small numbers, and showed the

<sup>1</sup> *Les Heliozoaires d'eau douce*, p. 268.

<sup>2</sup> One individual only of *D. lucida* was observed.

<sup>3</sup> *Journ. Linnean Soc. Zool.*, xxxii., p. 80.

characteristic colourless test, covered with almost circular discs, and without foreign matter.

Individuals of species of *Trinema* were very common and of large size. The variety *T. enchelys* var. *galeata*, noted by Dr Penard as occurring in moss, was plentiful.

#### DESCRIPTION OF PLATE V.

FIGS. 1-4. *Corycia radiata*, n. sp.

Fig. 1. Side view of an active individual,  $\times 740$ , St Kilda. Fig. 2. Do.,  $\times 740$ , Isle of May. Fig. 3. Empty test,  $\times 740$ , Isle of May. Fig. 4. Dorsal view of empty test,  $\times 740$ , St Kilda.

FIGS. 5-11. *Euglypha denticulata*, n. sp.

Fig. 5. Active individual,  $\times 740$ , St Kilda. Fig. 6. Do.,  $\times 330$ . Figs. 7 and 8. Empty test in broad and narrow view,  $\times 540$ , Isle of May. Fig. 9. Individual with irregular test,  $\times 540$ , Isle of May. Fig. 10. Mouth scales,  $\times 980$ . Fig. 11. Body scales,  $\times 980$ .

FIGS. 12-14. *Sphenoderia dentata*, Penard.

Fig. 12. Typical form,  $\times 360$ , Isle of May. Fig. 13. Rounder variety,  $\times 360$ , Isle of May. Fig. 14. Body scales of previous individual, highly mag. Fig. 15. *Trinema enchelys* (Ehrenb.), Leidy, irregular test, Isle of May.

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## NOTES.

### REPORT ON SCOTTISH ORNITHOLOGY AND BIRD-MIGRATION FOR 1911, by Misses Rintoul and Baxter.

Owing to the voluminous nature of the data acquired for the preparation of this Report, and the general interest taken in the subject, the Editors beg to intimate that it has been decided to issue the Report as a separate publication at an early date. Particulars will be given in the June number of *The Scottish Naturalist*.

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**The Killer, or Grampus, in the Solway.**—On 6th February 1912, a Killer (*Orcinus orca*, Fabricius) was stranded on the Blackshaw Bank, Caerlaverock, Dumfriesshire. When found the animal was already dead. The contents of its stomach included many Golden Plovers and a few Lapwings, Mallards, and Gulls. I had great difficulty in deciding as to the species to which this Cetacean belonged, as it

had been disposed of as soon as possible to the Dundas Chemical Company, who immediately cut it up and boiled it down. Though recorded in the *Dumfries and Galloway Standard* of 17th February 1912, as a "Pilot Whale," I managed to obtain a description of it, and also a tooth, which enabled my friend, Mr R. Lydekker, to confirm my opinion that it was a Killer. Such conflicting evidence was forthcoming as regards its measurements that I should be sorry to say more than that the specimen must certainly have been a very large one.—HUGH S. GLADSTONE.

**The Greater Wheatear in Midlothian.**—On 9th May 1911, my daughter and I watched for some time a beautiful male of the large race of Wheatear (*Saxicola oenanthe leucorrhoea*) at the cairn on the summit of South Black Hill, Pentlands. There was no mistaking it, its large size, and altogether more "distinguished" appearance as compared with the other Wheatears we saw in the course of our walk across the hills, being very striking. On the morning of the same day Greater Wheatears were observed on migration at the Isle of May, by Misses Baxter and Rintoul (*ante*, p. 54). I have recorded this race from East Lothian in autumn (*Ann. Scot. Nat. Hist.*, 1910, p. 55), but the present record is the first for Midlothian.—WILLIAM EVANS.

**Barn Owls in Berwickshire.**—The Barn Owl (*Strix flammea*), which is now a scarce bird in Scotland generally, is an increasing species in the Merse of Berwickshire. About twenty years ago its numbers were reduced to a low ebb, but of late years it has become fairly plentiful in suitable districts. The local bird-stuffers unfortunately get a good many to preserve during the season, and about the beginning of this year one of the craft in Duns had seven or eight on hand at one time. Most of the birds, however, had been picked up dead, or in a moribund state, and were in an emaciated condition. They were all light-coloured, white-breasted birds.—T. G. LAIDLAW, Duns.

[A similar increase has been observed in Haddingtonshire.—EDS.]

**Brent Goose in Peeblesshire.**—As it is quite exceptional to find the Brent Goose (*Branta bernicla*) away from the sea, or the saltings on the coast, it may be of interest to record the occurrence of a specimen in Peeblesshire, about twenty miles inland, in February last. The bird, when first seen, was frequenting some grass fields on a farm near West Linton, but on an attempt being made to stalk it, it proved to be very wary, and left the neighbourhood. A day or two later it was shot on the meadows at Drochil, about four miles from the place where it was first observed.

The bird was a ♂, in very good condition and plumage.—  
T. G. LAIDLAW, DUNS.

**The "Display" of the Goosander.**—A number of Goosanders (*Mergus merganser*) winter regularly in Linlithgow Loch, seldom arriving before early November, and departing for the most part in March and April, by which time all, or nearly all, are paired off. As in some other ducks, the so-called "nuptial performance" in the present species is apparent long previous to the breeding-season, commencing in November immediately after the arrival of the birds, although more frequent and fully developed in later weeks. Of the various attitudes and actions shown by the drakes under the influence of sexual emotion, the following are the most striking:—

- (1) Whilst swimming rapidly in company with one or more females, the male with great suddenness and rapidity stretches his head and neck perpendicularly upwards to their fullest extent, the bill gaping; and thence with equal abruptness assuming his ordinary demeanour.
- (2) The second performance bears considerable resemblance to one of the Mallard's, the bird raising the fore part of the body in the water, and simultaneously curving the neck so that the bill is directed in towards the breast.
- (3) At intervals, while swimming, the drake executes a spasmodic movement with the feet, a jet of water being thrown upwards—the action having the effect of propelling him forward a foot or two with a sudden jerk. These three performances are gone through in no fixed order, and all are not always to be seen on the same occasion. The only audible vocal accompaniment consists of a low, soft, croaking note, continuously emitted. Elevation of the head-feathers in the form of a crest, slight bowings and head-tossings, are amongst the other actions shown during "display." Initiation by one particular bird is frequently the signal for other drakes to hurry to the spot, the more distant ones rising on the wing in their haste to participate, until a little band is collected, the individuals swimming to and fro in close company. Rivalry is not greatly in evidence, but occasionally a bird will lunge out with his powerful bill at a neighbour, or even pursue him over the surface of the water for a short distance; the females sometimes repel the unwelcome advances of a male in a similar way. While more distinctive of the drake, "display" in the Goosander, as in the case of the Mallard, is not peculiar to that sex, but it appears to be infrequent in the female; I have only observed actions 2 and 3 in the latter.—S. E. BROCK, Kirkliston.

**Smew in Elginshire.**—It may interest the readers of the

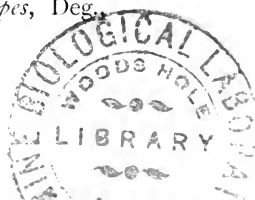


*Scottish Naturalist* to know that a brown-headed Smew was shot on Loch-an-dorb, near Dava, by Mr Mackintosh, gamekeeper to Capt. Ewen I. Brodie of Lethen, proprietor of Duncarn Shootings, Nairnshire, on the 7th February last. I saw the bird in this town after being stuffed, and think, from its being of a larger size than the immature male I have in my collection, it was an adult female.—RICHARD H. W. LEACH, Inverness.

**Early Appearance of the Common Tern on the Clyde.**—I read with interest Mr George Stout's note on this subject in the April number of the *Scottish Naturalist*. I may add that on 1st February my wife, my niece, and myself saw two or three Terns on the wing in Kildalloig Bay, between Davaar Island and Davaar Point, where a considerable stretch of sand is exposed at low water. Again on the 4th we saw a small flock of ten or eleven. I have no doubt of their being Terns, as we were well acquainted with them at Pentland Skerries.—J. R. LAURENCE, Davaar Lighthouse.

**Additional records of Scottish Stratiomyidæ, etc.**—In a paper by the Rev. James Waterston and the present writer (*Ann. Scot. Nat. Hist.*, 1909, p. 91) forty species of Diptera belonging to the families Stratiomyidæ and Asilidæ were recorded from various localities in Scotland. I have now some additional records to make from the Blairgowrie district of Perthshire. Two species of special interest have to be mentioned: (1) *Stratiomys furcata*, Fab., ♂, 2nd June 1911. This is the only occasion on which I have seen a *Stratiomys* alive, and I have no note of any Scottish record for this species beyond the old one (1837) cited by Mr Grimshaw under the name of *S. riparia*, Mg. (*Ann. Scot. Nat. Hist.*, 1903, p. 160). According to Verrall (*British Flies*, vol. v.), *S. riparia*, Mg., is now considered a variety of *furcata*. (2) *Bombylius caescens*, Mik. I have a good series taken in June and July during the last three years. This interesting fly is fond of hovering over sandy places on the hottest days of summer.

Blairgowrie is an additional locality for the following species:—*Sargus flavipes*, Mg., ♀, 23rd August 1910; *Chloromyia formosa*, Scop., ♂, 16th June 1911; *Microchrysa flavicornis*, Mg., ♂, 11th June 1911; *Beris geniculata*, Curt., ♂, 16th June 1911; *Hematopota crassicornis*, Whlbg., 2 ♂♂, 21st July 1909; *Tabanus sudeticus*, Zlr., ♀, 11th July 1910; *Thereva nobilitata*, Fab., ♂ ♀, 16th June 1910; *Dysmachus trigonus*, Mg., ♂ ♀, not rare, June 1910-11, taken with a large ♀ Spilogaster as prey; *Dioctria rufipes*, Deg., several taken 2nd and 4th June 1911.



In view of the comparative scarcity of these Diptera, it is interesting to note that, with the exception of *S. flavipes* and *H. crassicornis*, they all occurred on quite a small piece of rough ground lying just outside the town.—A. E. J. CARTER, Blairgowrie.

**Marionina sphagnetorum** (Vejd.), from St Kilda.—In some ground moss, collected by Mr Eagle Clarke at St Kilda last September, I found an example of this small Oligochæte, an addition to the recorded fauna of the island. *Lumbricus rubellus* also occurred in the moss, but this earthworm has already been recorded from St Kilda (*Ann. Scot. Nat. Hist.*, 1906, p. 84).—WILLIAM EVANS.

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## BOOK NOTICES.

DISTRIBUTION AND ORIGIN OF LIFE IN AMERICA, by Robert Francis Scharff, Ph.D., B.Sc., pp. xvi + 497, 21 Maps. London: Constable & Co., 1911. Price 10s. 6d. net.

This volume is an important contribution to the science of Zoogeography. It is founded upon the "Swiney Lectures on Geology" delivered by the author in 1908, but in issuing them in book form, Dr Scharff has taken the opportunity to rewrite and considerably extend his studies. The very full bibliography given at the end of the book proves the author to be thoroughly acquainted with the literature of this fascinating subject, and the views propounded, though far from orthodox, bear evidence of extensive reading and much careful thought. One of the main points insisted on in the series of fifteen chapters, each of which treats of a distinct portion of the New World, is the former existence of land connections between America and Europe, by way of the present Atlantic Ocean. One of these joined Scotland and Labrador by way of Greenland and Iceland, while another connected the Mediterranean Region directly with the West Indies. A great variety of evidence is brought forward in support of the author's contentions, and it is interesting to note his argument that the importance of "accidental" dispersal has been much overrated in the past. The conditions which led to and prevailed in the so-called "Ice Age" or "Glacial Epoch" are also discussed in an interesting and convincing manner. The volume is worthy of careful study by all who are interested in the problems with which it deals, while its exceedingly moderate price, clearly printed text,

and wealth of illustrative maps, render it accessible and attractive to all classes of readers.

EARTHWORMS AND THEIR ALLIES, by Frank E. Beddard, pp. vi+150. Cambridge: at the University Press, 1912. Price 1s.

Earthworms, owing to their terrestrial habit and comparatively limited powers of locomotion, are peculiarly fitted for throwing light on the problems of geographical distribution, and this addition to the Cambridge Manuals of Science and Literature views them from this standpoint. The early portion of the volume describes in detail a representative primitive species, and from this are deduced those families and genera which are supposed to have succeeded it in time. But the major portion is devoted to the distribution of earthworms, their frequency, their occurrence in continental areas and oceanic islands, and to those facts which bear directly thereupon, their habits, their power of movement and migration, and the natural obstacles which may check their dispersal. These themes are treated in an original and suggestive manner. On p. 5, line 14, read *is* for "are"; p. 13, line 18, *sperms* for "sperm"; in fig. 4, the ventralmost pair of setæ described as absent are clearly shown; in the index it is absurd to add after "Structure," "(see Anatomy)," when there is only a single reference—to p. 1.—J. R.

## GLEANINGS.

Professor C. J. Patten, in an interesting paper in the *Irish Naturalist* (March 1912, pp. 49-51), records the addition of three birds to the Irish list. While at the Tuskar Rock Lighthouse, he procured two Reed Warblers (*Acrocephalus streperus*), from a party of five on 19th September. On 12th September he obtained a Wagtail, which he believes to be *Motacilla flava flava*, and on the 5th October a Skylark, which he is of opinion is *Alauda arvensis cantarella*.

Further reports of the occurrence of Little Auks in various parts of England and Ireland are published in the April number of *British Birds* (p. 309). In the same magazine (p. 312) there is an interesting list of marked birds that have recently been "recovered"; among them there are several Scottish records, including a Blackbird, a Starling, and a Lapwing ringed in the West of Scotland and recovered in Ireland, a Greenfinch ringed near Glasgow and recovered near Aberdeen, and a Lapwing ringed in Peeblesshire and recovered at St Hilaire de Riez, France.

In the *Proceedings of the Zoological Society of London* (1912, Part I., pp. 8-22) appear two interesting papers, by Bruce F. Cummings and G. A. Boulenger respectively. The first is entitled "Distant Orientation in Amphibia"; and the

second, "Some Remarks on the Habits of British Frogs and Toads." Mr Cummings' observations and experiments were made with the Crested and Palmated Newts. The paper deals with the "homing faculty" of these lowly Vertebrates, and the conclusions arrived at are that the instinct is poorly developed, and that they are aided in their search for water (for breeding purposes) by their decided propensity to walk downhill. Mr Boulenger's contribution deals with the migrations during the breeding season of the Common Frog, Natterjack Toad, and Common Toad, and strongly recommends the last-mentioned as the most suitable Batrachian upon which to found future investigations.

In a note by G. C. Champion (*Ent. Mo. Mag.*, April 1912, p. 89) we learn that *Carabus hookeri*, a beetle described by Nodier in 1821, from specimens obtained in the neighbourhood of Ben Lomond, has been ascertained by P. Lesne to be undoubtedly *C. nitens*, Linn.

In the continuation of J. R. le B. Tomlin and W. E. Sharpe's paper, "Notes on the British Species of Longitarsus (a genus of Coleoptera)," which appears in the April number of the *Entomologist's Monthly Magazine* (pp. 73-76), a black variety of *L. suturellus*, Duft, is recorded from Coatbridge (G. Brown), and *L. senecionis*, Bris., is stated to have been taken as far north as Forres.

In the *Entomologist's Record* for March (p. 71), H. St J. K. Donisthorpe records *Catops montivagus*, Heer, as a new British beetle. A single specimen was taken by him at Nethy Bridge on 27th June last.

At a meeting of the Lancashire and Cheshire Entomological Society held on 20th November, 1911 (vide *Entomologist's Record*, March 1912, p. 80), R. Tait exhibited a fine series of Lepidoptera taken by him at Braemar, and including *Plusia interrogationis*, *Dasydia obfuscaria*, *Ctenonympha tiphon*, *Anthrocera exulans*, *Nemeophila plantaginis* (with var. *hospita*), *Cidaria populata*, *C. immanata*, *Coremia munitata*, *Larentia cecsiata*, and *Halia brunneata*.

W. J. Lucas contributes to the April number of the *Entomologist* (pp. 114-117) a paper on "British Orthoptera in 1911." Many Scottish records (too numerous to quote) are given, while an interesting plate, showing the Mole Cricket (*Gryllotalpa gryllotalpa*), with wings spread and closed, and the Grasshopper *Meconema thalassinum* in the act of ovipositing.

At a meeting of the Linnean Society of London, held on 21st March, Dr John Mastin sent for exhibition under the microscope two slides of Polycistina, prepared from a patch of these organisms found floating off the coast of Whitby, Yorkshire, in September last. The interest of the exhibition was enhanced by the fact that the forms were identical with those usually found off the West Indies and neighbouring coasts, and do not appear to have been previously observed in British waters. A stormy sea and heavy wind had prevailed a few days before this remarkable discovery.



# The Scottish Naturalist

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THE FULMAR: ITS PAST AND PRESENT DISTRIBUTION AS A BREEDING SPECIES IN THE BRITISH ISLES.

By J. A. HARVIE-BROWN, LL.D., F.R.S.E.

(Continued from p. 102.)

Also, in July 1902, Mr Thos. Tait of Inverurie saw about a dozen pairs in all flying close about the high cliffs of Clomore, and reported the same to Harvie-Brown. This was noted at the time in the *Ann. Scot. Nat. Hist.*, 1902, p. 253, and again referred to in the *Fauna of the North-west Highlands and Skye*, 1904, p. 360.

In 1901 and 1902, however, Harvie-Brown failed to see or hear of any Fulmars at Cape Wrath, and was assured that there were none there by the lightkeeper; but in 1904,

<sup>1</sup> Vide *Vertebrate Fauna of Sutherland, &c.*, 1887, p. 169.

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(Concluded from p. 102.)

### NORTH COAST OF THE MAINLAND OF SCOTLAND.

Still following the geographical sequence from north to south, we now take up the occupation of the north coast of Scotland.

On 19th and 30th June 1897, Mr W. Eagle Clarke, when on board the lighthouse s.s. *Pharos*, saw several Fulmars flying in company with other rock-birds to the east of Cape Wrath, as recorded by him in *Ann. Scot. Nat. Hist.* for that year, p. 254. This refers with little doubt to the 600-foot cliffs of Clomore, which extend for a stretch of some three miles between Cearvaig Bay and Garbh Island—the former eyrie-holding site of the White-tailed Eagles, of which one of the old birds of the pair was shot by John Colquhoun.<sup>1</sup>

Also, in July 1902, Mr Thos. Tait of Inverurie saw about a dozen pairs in all flying close about the high cliffs of Clomore, and reported the same to Harvie-Brown. This was noted at the time in the *Ann. Scot. Nat. Hist.*, 1902, p. 253, and again referred to in the *Fauna of the North-west Highlands and Skye*, 1904, p. 360.

In 1901 and 1902, however, Harvie-Brown failed to see or hear of any Fulmars at Cape Wrath, and was assured that there were none there by the lightkeeper; but in 1904,

<sup>1</sup> Vide *Vertebrate Fauna of Sutherland, &c.*, 1887, p. 169.

when rowing round the bases of the great Clomore Cliffs, several birds were seen by him to be occupying the grassy ledges high up in the precipices between Cearvaig Bay and



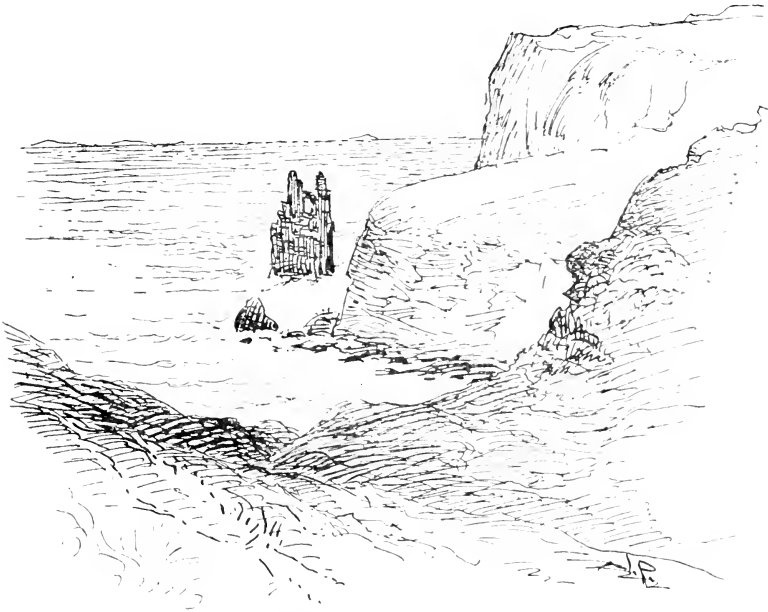
*Clomore—Garbh Island in the distance.*

Garbh Island. We give two views here of this part of the coast, to distinguish it from Cape Wrath, which is three miles further to the west of Cearvaig Bay.



Harking back a little in time ; on the 10th of July 1900,<sup>1</sup> Howard Saunders and Mr Henry Evans, when on board the s.y. *Aster*, saw Fulmars go up to the grassy slopes of "Cape Wrath" (recte=Clomore), vide *Ann. Scot. Nat. Hist.*, 1901, p. 50. Though actual proof is wanting, it may be safely considered that occupation of Clomore Cliffs took place about 1897, or even earlier.

The next fixed record for the north coast of Scotland is to the eastward, at Dunnet Head, in Caithness. Dunnet

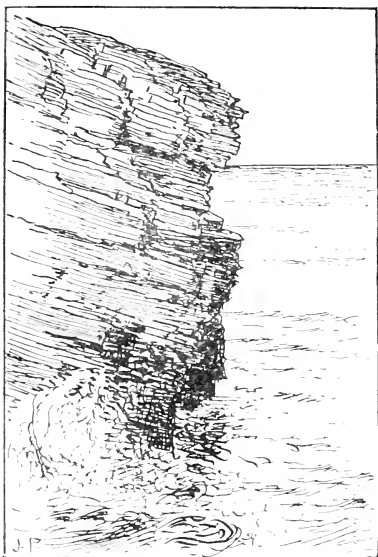


*Stack Clo-Kearvaig, Clomore.*

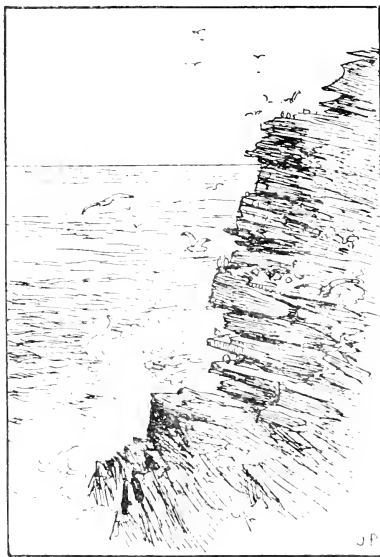
Head was colonised by the Fulmars as follows:—The first seen were three birds frequenting the cliffs below the lighthouse in 1900, in the month of May, and in February 1901 ten birds were counted. Every year since they have increased in numbers. They were seen nowhere but at these cliff-faces below the lighthouse till 1904. In that year there

<sup>1</sup> Not in 1898, as, by a slip, was entered in Harvie-Brown's *Fauna of the North-west Highlands and Skye*, p. 356—although in that year also (1898) Howard Saunders was on board Mr H. Evans' yacht at the same time that Prof. Newton was, and visited Handa.

were some about half a mile to the east of the Head; and one pair certainly nested about three miles to the west, on the Thurso side of the Head, in 1906. By that time there were as nearly as could be made out fifteen pairs below the lighthouse (nine pairs on the east side, and six pairs on the west side), evidently nesting. On 1st June 1905 a pair was seen hovering about Holborn Head, on the west side of Thurso Bay (J. A. H.-B., *Ann. Scot. Nat. Hist.*, 1907, p. 118).<sup>1</sup>



*Holborn Head.*



*Hoy.*

The diagram in the text showing the dip of the Caithness pavement to the west of Scrabster (Thurso) Bay—at Holborn Head and the Clett Rock—does *not* represent the strata of the cliffs of Dunnet Head to the *east* of Scrabster Bay, *because* at the latter higher cliffs there is a cap of much more friable “Hoy” sandstone (Heddle), which, running in horizontal ledges near the cliff-summit and disintegrating there, affords ample foothold, nesthold, and a luxuriant vegetable growth, affording excellent nesting-ground for the Fulmars, as they also do—or did?—for Cormorants.

<sup>1</sup> In the *Annals* for 1906, p. 204, it is stated that on 3rd June 1905 there were twenty-two pairs breeding at Dunnet.

## EAST CAITHNESS.

In 1911 we learn of their first advent or first occupancy of Berriedale Head, on the east coast of Caithness, where thirty to forty birds were observed nesting on 30th May (A. H. Meiklejohn, *British Birds*, v., 56), at the same time as they reached the east side of the Orkney Isles (*ante*, p. 101). The date is later than that of their arrival at Dunnet Head, and this makes it a little difficult to decide what was the direction of the advance. We leave the question open for the present. It remains for future observers to record any further advances southward should such occur.

## HANDA, WEST COAST OF SUTHERLAND.

We only summarise the account of this occupancy, which has been fully treated of in our volume upon the *North-west Highlands and Skye*. In that volume also is given a plate, showing the position of the first colony on the island. At first when the birds "came up from the sea" in 1902 there would be about one hundred—according to my informants,—but the numbers dwindled to about eleven pairs by the time of nesting.<sup>1</sup> This is the first reliable notice of their arrival at Handa.<sup>2</sup> In 1903 Harvie-Brown steamed round Handa, close in, within say half a mile of the cliffs; and a party from the yacht landed on the island and went all along the cliff top, and Mr Norrie took a series of fine photographs at most of the salient points. The same year one egg was procured for Harvie-Brown by the Mathesons and the keeper on the Scourie shootings, from the only ledge accessible at that time. Another was obtained from the same place for the late Prof. A. Newton, which is now in the collection at Cambridge. Yet another single egg was secured by a gentleman who had motored all the way from Liverpool,

<sup>1</sup> This appears frequently to occur; as is natural, the first pioneers are mostly composed of immature birds, and in greater numbers than those that finally take possession.

<sup>2</sup> In regard to W. Dunbar's statement, quoted in our *Vertebrate Fauna of Sutherland, etc.* (1887), from his MS. list of 1844, it is significant that he does not appear to have included the Fulmar in the list of Sutherland breeding-birds supplied to A. G. More (see *Ibis*, 1865).

and had with him a man from Stirlingshire, who was accustomed to rope-work.

The inaccessibility of the positions taken up by the earlier colonists is admirably represented by these Handa birds. Later, as we have before shown, more accessible places are of necessity occupied.

#### HEBRIDES.

RONA AND SULISGEIR.<sup>1</sup>—In 1886 Mr R. M. Barrington saw one Fulmar at North Rona. Harvie-Brown was there in 1885, when on a cruise in the yawl *Crusader*, and did not see one; but in 1887, when on a visit in his own yacht *Shiantelle*, he found quite a number frequenting the high cliff of the western Horn, and saw one sitting on a ledge; and in the same summer these birds were quite abundant around the isolated stack of Sulisgeir, or—as it is also named—North Barra. They were flying close round the stack, and very nearly alighting, though Harvie-Brown cannot remember seeing one actually do so. He shot one bird, and could easily have shot many.

The next account we have of the North Rona Fulmars is given by Her Grace the Duchess of Bedford, who paid two visits to the island, on 19th July and 25th August 1910. She described the sights she witnessed that year as in such extraordinary contrast to what Harvie-Brown had seen in 1887, that we believe it best to give both accounts for comparison.

We quote the following from our *Fauna of the Outer Hebrides*:—“On this occasion, being anxious to complete my previous survey of 1885, which was a very hurried and unsatisfactory one, I turned my back upon the Fork-tailed Petrels' end of the island, and struck away across the rich carpet of sea-pink and short sweet grass of the lower northern peninsula. The sea-pink, which grows in continuous profusion over the whole surface, filled the air with delicious fragrance, faint but sweet. The rich but short pasturage is strewn with scattered boulders, and in places these have been piled

<sup>1</sup> North Rona, lat. 59° 05' 54", long. 5° 52' 04". Sulisgeir or North Barra, lat. 59° 04' 26", long. 6° 14' 34".

together, no doubt by many previous generations of shepherds and crofters, and formed into many rough sheep-folds and shelters. . . . On the face of the north-west precipice or Horn of Ronay, where there is a considerable broken surface suitable for such birds nesting, I saw six or eight Fulmar Petrels skimming, as is their wont, close to and fro past the cliff-face and top. I saw one alight twice at the same place, about fifty yards west of the granite cliff before mentioned. On returning to this place in the afternoon . . . I saw them again, and several flew very close past where I was sitting . . . but they rarely flew *over the land*, almost always over the sea. It seemed quite evident that this part of the cliff is the only bit frequented by these birds." . . . Later, "my delight was great when I saw one Fulmar sitting, apparently on its nest." After dislodging her by throwing down a pebble or two, "my disappointment was as great as my previous delight, when I saw an empty nest," etc. (*Vertebrate Fauna of the Outer Hebrides*, 1888, p. xlvi.)

In striking contrast to these experiences are those of Her Grace when she visited the island in 1910. Referring to the above account, she writes, after quoting the sentence regarding the sweet scent of the sea-pinks, as follows:—"The sea-pink was in bloom at the time of my visit, but by no stretch of the imagination could I have detected its fragrance amidst the all-pervading stench of the nesting place of hundreds of Fulmars, Great and Lesser Black-backed Gulls and Herring Gulls, and his [H.-B.'s] remark probably bears eloquent testimony to the great increase in these birds since that time, an increase which may possibly be due to the island being now entirely uninhabited. The Fulmars occupy not only the cliffs, but all the old ruins and even the sloping ledges of rock." (*Ann. Scot. Nat. Hist.*, 1910, p. 212.)

This shows indeed a great change both as regards the population of birds and the disregard of choice in their nesting places.

FLANNAN ISLES.—The next locality in our geographical sequence is the Flannan Isles, which lie to the westward of the Lews.

In June 1881, several were seen by us close to these

islands, and they were certainly nesting there by 1902, when Mr Herbert Langton obtained two eggs and reported the fact to Harvie-Brown. Mr Eagle Clarke, when on Eilean Mor of that group for the purpose of studying migration in 1904, was informed that a few pairs of Fulmars had bred on the outer islands for several years; and there were two nests (the first) on Eilean Mor itself that year (*Ann. Scot. Nat. Hist.*, 1905, p. 86). The birds were reported as plentiful at the Flannans in April 1901 and 1902 (*ibid.*, 1902, p. 138, and 1903, p. 210).

SHIANT ISLES.—By 1910 the Fulmar had reached the Shiant Isles, as observed by Misses Baxter and Rintoul on 8th June from the deck of a yacht. They saw several pairs “fly up again and again to the ledges on the cliff (facing the north?), but it could not be ascertained if they were nesting,” though doubtless they were (*Ann. Scot. Nat. Hist.*, 1911, p. 144). In 1903, when Harvie-Brown, while on a cruise on the yacht *Amaranth*, was at the north side of these islands, *he saw not one*, though he kept a special eye open for the vision.

ST KILDA.—We need not refer to the history and status of the Fulmars on the St Kilda group of islands, except to say that the chronological accounts of their presence and abundance there take us back some two hundred and fifty years. Nor does it seem necessary to do more than mention the long isolation of this—the only—original British colony, from the greater populations of arctic and sub-arctic lands, though ample opportunity is thereby given for speculations of not uninteresting nature.

Of their decided and very marked increase at St Kilda, however, we wish just to say, that the fact seems perfectly established by the evidence of eye-witnesses, amongst whom particularly may be mentioned Mr Mackenzie of Dunvegan, Skye, who, in his capacity of factor to The MacLeod, has long been an annual visitor to the group. He speaks to the evident and considerable increase of the birds since the natives have in great measure ceased to utilise such large numbers for food, *i.e.*, since the place has been more regularly visited by the *s.s. Dunara Castle*, and other vessels of the west coast service, and by the trawlers and Norwegian

SHETLAND



ORKNEY

SUTHERLAND

OUTER-HEBRIDES

WEST-ROSS

MORAY

DEE

ARGYLL

TAY

FORTH

CLYDE

TWEED

SOLWAY

MAP OF SCOTLAND

BY J. H. COLE

DR. CAROLINE DUNN

ED. 1912

DEPARTMENT OF SCIENCE

OR

THE NATIONAL MUSEUM

Scale 1:100,000

1:100,000

1:100,000

1:100,000

1:100,000





whalers that use St Kilda Bay as a harbour of refuge, etc. The visits of the *Dunara Castle* date back to the year 1877. In 1879, when Harvie-Brown first visited St Kilda, and for years thereafter, a few Fulmars used to follow the *Dunara Castle* close up to the west entrance of the Sound of Harris till within view of the Island of Pabbay, when the birds seemed to shy the land, and sheered off and retraced their flight towards St Kilda.

BARRA HEAD, SOUTH ISLES OF BARRA.—With reference to the remarks in our Supplement to the "Fauna of the Outer Hebrides" (*Ann. Scot. Nat. Hist.*, 1903, p. 18) concerning R. Gray's statement that the Fulmar "formerly bred in the south isles of Barra, but has now entirely abandoned that locality, none having been seen there in the breeding season since 1844" (*Birds of W. Scotland*, 1871), we are now cognisant of what was doubtless his authority for the first part of the statement, viz., the old record of G. C. Atkinson, who was "informed" that a few bred on these islands (*Trans. Nat. Hist. Soc., Northumberland*, etc., 1832, p. 222).<sup>1</sup> J. Wolley's suggestion, in his paper on the Birds of the Faroe Islands (*Contributions to Ornithology*, 1850, p. 115), that perhaps "Bara and Rona, two rocks far to the north of Cape Wrath and the Lewes," were meant, does not seem to help matters.<sup>2</sup> As regards the authority for the latter part of Gray's statement, we are still in ignorance. On a review of the evidence, we see no reason to alter our opinion that the whole statement is open to doubt, and should be placed in square brackets.

Be the above as it may, there is now a colony of Fulmars established at Barra Head. The first pair was seen by the lighthouse-keeper in 1899, but it was not till 1902 that he actually saw eggs, though nesting may have taken place before that year without his knowing. There were from eight to twelve pairs breeding in 1906 (N. B. Kinnear, *Ann. Scot. Nat. Hist.*, 1907, p. 85).

<sup>1</sup> Cf. also the first editions of Hewitson and Yarrell.

<sup>2</sup> In justice, however, to Wolley, reference should be made to Prof. Newton's remarks when reprinting Wolley's account in the *Ootheca Wolleyana*.

With the fine cliffs of the south isles of Barra (Barra Head, Mingulay, etc.), in full view of St Kilda, it is the more remarkable that the birds should not have come to nest there until in quite recent years. It would appear, however, that formerly they seldom extended their flight far in this direction. In 1884 Mr W. Donald, of the s.s. *Dunara Castle*, for the first time in his experience saw one bird at the "Hawes Bank," which lies to the south, or a point or two west of south, of Tiree, and in the fairway of the steamer route to Castlebay, Barra; but from that year forward he has reported seeing others over this same bank. It was here also that Mr R. Godfrey, when returning from St Kilda on the *Dunara Castle via* Barra Head in midsummer 1905, saw nine Fulmars. Records of summer occurrences inside the Outer Hebrides, once also so very unusual, are becoming more frequent, and as we have seen, some pairs have quite recently arrived at the Shiant Isles; but whether these pioneering birds came from the north by way of the Minch, or from the west and south *via* Barra Head, it is difficult to decide. On 25th July 1906 Mr J. Pedder saw one as far in as the Sound of Sleat, near Isle Ornsay, between Skye and the mainland (*Ann. Scot. Nat. Hist.*, 1906, p. 240).

#### IRELAND.

The fact—a most interesting one—of the extension of the breeding-range of the Fulmar southwards to Ireland was chronicled by Mr R. J. Ussher, in the *Irish Naturalist* for last year (p. 149). On 11th July 1911 he counted eighteen sitting birds on the ledges of a great sea-cliff on the northern coast of Mayo, and from a boatman he ascertained that they had come there some four years before, and were increasing. Later, he learned that a colony of about twenty birds had been seen on an Ulster cliff in May 1911. They were said to have first appeared at this second locality in 1910.

This completes our survey down to and including 1911. The data, though no doubt incomplete at many points, bear striking testimony to the rapid progress and widespread nature of the recent colonising effort of the Fulmar in

these islands. The probable cause or causes of the phenomenon, and whether the new settlers came from St Kilda or some station in the northern regions, or from both, are highly interesting questions which may be left for future discussion. Neither is it our intention to treat in this article of the autumn and winter range of the species. Allusion may, however, be made to abnormal visitations to, for instance, the North Sea. Whilst annually a certain number attend the fishing-fleets at the Dogger Banks and the North Sea generally, and come at times to within even ten or fifteen miles of the land, the years 1875 and 1879 witnessed their appearance in unusual numbers on our coast, or close to it, along with many Little Gulls, and off Heligoland along with Pomatorhine Skuas.

## APPENDIX.

Since the paper left my hands, the following further information has reached me:—

SHETLAND.—Mr Herbert W. Richmond informs me that in 1908, besides seeing Fulmars on Noss, where they were very much in evidence, and Unst, he saw them also on Bressay and Hascosay. In the last named they flew to and fro by a stack which stands near the low cliffs, 30 to 40 feet high. The island contains no cliffs but these low ones, and even these are of small extent. He “failed to see a nesting bird, but the seaward face was out of sight.”

ORKNEY.—In the last (May) number of *British Birds*, Mr W. J. Balfour Kirke states that he heard of Fulmars on the west coast of Mainland, Orkney, in 1908, and found a small colony to the north of Marwick Head in 1910. When writing of the Orkney colonies (*ante*, p. 101) we should have mentioned that “scores” of birds were seen about the Black Craig, near Stromness, on 5th March 1904, by Mr H. W. Robinson (*ibid.*, January 1912). This is no proof, however, that they nested there that year.

HEBRIDES.—From the Barra Head lighthouse-keeper, my friend Dr J. MacRury has ascertained that although only three eggs were got there last summer, twenty to thirty birds were

seen flying about the rocks, and it is probable the majority of these nested. None has yet been seen about the Mingulay cliffs. Mr W. Donald writes me (*in lit.*, 8th February 1912), that three years ago he saw one bird between the "Dutchman's Cap" and Bunessen, near Staffa.

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## ON SOME SCOTTISH SPECIES OF *MYMARIDÆ*.

By P. CAMERON.

THE species of *Mymaridæ* are the pygmies of the order Hymenoptera. They are exceedingly minute, and are thus difficult to collect unless one paid special attention to them. All are parasites in the eggs of other insects, and are consequently of economic importance, as, in many cases, they are very useful in keeping down the numbers of injurious caterpillars. Probably no order of insects is free from their attacks. One species, *Caraphractus cinctus*, Hal. (*Polynema natans*), enters the water, using its wings as swimming organs, and oviposits in the eggs of a dragon-fly, *Calopteryx virgo*.

The systematic position of the group is a debatable one. The Rev. T. A. Marshall, in his Entomological Society's Catalogue, places them at the end of the *Proctotrypidæ* as the *Mymaridæ*, and enumerates twelve genera and thirty-six British species, a number that has been considerably added to since its publication. Other writers exclude them from the *Proctotrypidæ*, and treat them as a tribe or subfamily of the *Chalcididæ*, or as a separate Family. Ashmead, in his great work on the genera of the *Chalcididæ*, regards them as a Family of his Super-family *Chalcidoidea*, and splits them up into two subfamilies, as I have indicated in my list.

Not having paid much attention to these atoms, my list of the Scotch species I have collected is a short one. Nevertheless it includes four species new to the British Fauna.

## MYMARINÆ.

## MYMARINI.

1. *Polynema ovulorum*, L. Loch Libo, Clober, Bishopton, Manuel.
2. *P. albitarse*, Kieffer. Mugdock. Mr H. St J. Donisthorpe informs me that he has this species from Rannoch, where it was found in the nests of *Formica rufa*, the nests of which are such conspicuous objects in the Black Wood of Rannoch. *Lagynodes pallidus*, Boh., is another species of *Proctotrypidæ*, which is a parasite, or, at least, a resident in the nests of our big Red Ant.
3. *P. ruficollis*, Kief. Thornhill, Dumfriesshire.
4. *P. longicauda*, Kief. Ballantrae, Ayrshire.

## GONATOCERINÆ.

## OCTONINI.

1. *Ooctonus atroclavatus*, Kief. Clober.

THE BRITISH SPECIES OF THE DIPTEROUS  
GENUS *FANNIA*, ROB. DSV.

By J. R. MALLOCH.

THE want of reliable descriptions of species in English in many families of insects is one of the principal reasons why there are so few students of these families; and even when one understands German and French, it is not always easy to obtain the books upon the group one is interested in. I therefore purpose in the following pages to give a description of the species in the genus *Fannia*, R. D., which is better known as *Homalomyia*, Bouché. The generic name *Fannia* has precedence over *Homalomyia* by four years, and is adopted in the *Katalog der Paläarktischen Dipteren*, 1907. However much one regrets a change of this nature, the rule of priority must be regarded, and unless good and sufficient

grounds existed I have no doubt such a change would not be adopted. The most exhaustive and reliable work on the family is that of Herr Stein in *Berlin. Ent. Zeit.*, 1895. The only work of late years in English is that in Meade's *Anthomyidæ*, 1897, but the descriptions are very short and sometimes confusing, while one or two species may be met with which are not included in that paper. The generic characters may be briefly tabulated as follows:—

Head in ♂, owing to the unprojecting frons and epistome, and the large size of the eyes, which occupy almost the whole side of the head, almost hemispherical; in the ♀ this is not so noticeable, but the species of the genus may be recognised by the peculiar bristling of the frons, the crossed frontal bristles are absent, and there are in addition to the usual fronto-orbital row of bristles, two upper and outer fronto-orbital bristles, one almost in line with the front ocellus, in the middle of the orbit pointing backward, and one nearly half-way down towards the antennæ, pointing outwards over the eye; antennæ of moderate length; arista pubescent or bare. The abdomen in the ♂ is nearly always flattened elongate-elliptical in shape, and somewhat rounded at the apex, consists of five segments, of which the first is the shortest, the second generally shorter than the third, which is equal to the fourth, and the fifth somewhat longer than the fourth; in the ♀ the abdomen is not so noticeably flattened, and is much more pointed at the apex. The neuration of the wings is peculiar in having the sixth vein shortened, and the seventh sharply bent up round the end of the sixth. Calyptra equal, or slightly unequal. Mid tibiæ in the ♂ of nearly all the species thickened on the apical half on the ventral side, and clothed on at least the thickened part with distinct pubescence. The leg-bristles present on practically all the species of both sexes are confined, with the exception of the long hair-like bristle at the base of the mid femora on the ventral surface, to the tibia, as follows: fore tibia with a preapical bristle, mid tibia with one antero-dorsal and one postero-dorsal bristle, situated generally at about one-third from the tip, and one dorsal (preapical) bristle nearer the tip; hind tibia with two dorsal bristles, a large one near the middle

and the preapical one, smaller, near the tip, one antero-dorsal bristle about the middle, and one antero-ventral bristle. The expressions used to designate the surfaces of the leg areas were introduced by Mr P. H. Grimshaw, and are arrived at by considering the leg as placed at right angles to the body. It will be unnecessary to mention the bristles enumerated above in the description of every species, but when their position or number departs from the usual rule, note is made of this fact. The wings of the ♀ are not so pointed as in the ♂, the third and fourth veins are not so distinctly convergent, and although the wings may be browned in the ♂, they are nearly always clear in the ♀. In most cases the descriptions in this paper have been taken from British specimens, but I have been unable to obtain examples of *Kowarzii*, Verr., *umbrosa*, Stn., *glaucescens*, Ztt., *parva*, Stn., and the doubtful *vesparia*, Mde.

I have to thank Mr A. E. J. Carter for the loan of a number of specimens of the genus to assist me in drawing up descriptions, and Messrs J. J. F. X. King and A. Ross for much assistance in various ways.

I have not adopted the character used by Stein to separate the groups in his table by means of the size of the calyptra, because I find that with set specimens it is impossible for a beginner in the study of the group to say with certainty to which section a specimen belongs. In fact, I find that when the calyptra are said to be equal in size, the under scale is generally the smaller. I have therefore adopted a new system, which may or may not have other advantages, but I hope that in keeping clear of what I consider a disadvantage I have not added others.

In this group, as in others, one finds occasionally specimens that refuse to work out by the tables given for the known species. This is more often the case with females where the bristling of the legs, etc., is taken as the guide. There are several specimens of this kind before me just now which illustrate this fact. It is quite possible, nay probable, that they belong to undescribed species. I prefer, however, to allow them to remain in their present condition of uncertainty, to making a new species from a female that

may belong either to a known species described from the male, or be only a peculiarly bristled specimen of a known species.

TABLE OF SPECIES (MALES).

- 1 (8). Legs with at least the hind tibia translucent yellow,  
(Sometimes indistinct.)
- 2 (5). Mid coxa with a strong, downward directed thorn.
- 3 (4). Mid and hind femora and tibiæ pale. 1 *hamata*, Macq.
- 4 (3). Mid and hind femora black. 2 *fuscula*, Fln.
- 5 (2). Mid coxa without a thorn.
- 6 (7). Abdomen partly translucent yellow. 3 *pretiosa*, Schin.
- 7 (6). Abdomen black. 4 *pallitibia*, Rnd.
- 8 (1). Legs all black, or at most the knees yellow.
- 9 (14). Mid coxa with a strong thorn.
- 10 (13). Fore tibia with a prominent tuft of hairs at the apex.
- 11 (12). Mid tibia with a distinct tubercle, fore tarsi normal.  
5 *manicata*, Mg.
- 12 (11). Mid tibia only gradually thickened, fore tarsi dilated.  
6 *monilis*, Hal.
- 13 (10). Fore tibia without a tuft of bristles, mid tibia with a  
tubercle.
- 13a (13b). Mid tibia tuberculate, hind tibia not remarkably haired.  
7 *scalaris*, Fab.
- 13b (13a). Mid tibia without a distinct tubercle, hind tibia ciliated  
with long hairs. 7a *ciliata*, Stn.
- 14 (9). Mid coxa without a thorn.
- 15 (18). Abdomen partly translucent yellow at the base, sometimes  
indistinct in *canicularis*.
- 16 (17). Thorax grey-brown, mid tibia with extremely short  
pubescence. 8 *canicularis*, L.
- 17 (16). Thorax black-brown, mid tibia with longer pubescence.  
9 *difficilis*, Stn.
- 18 (15). Abdomen black, without yellow markings.
- 19 (20). Hind femora bent, swollen before the tip, and long haired  
ventrally. 10 *carteri*, n. n.<sup>1</sup> (= *femorata*, Mall.)
- 20 (19). Hind femora not remarkably bent or swollen, or bare on  
one side.

<sup>1</sup> Since the publication of the description of *F. femorata* (*Ent. Mo. Mag.*, 1909), I find that the name is preoccupied in the genus by a species described by Loew in 1861 belonging to the North American fauna, and alter that of my species to *carteri* in honour of Mr A. E. J. Carter, the discoverer of the insect.



- 21 (26). Mid metatarsus with a thorn on the ventral surface near the base.
- 22 (23). Whole ventral surface of hind tibia with long hairs.  
11 *armata*, Mg.
- 23 (22). Hind tibia not remarkably haired.
- 24 (25). Squamæ and halteres black; small species, 3 to 4 mm.  
12 *ærea*, Ztt.
- 25 (24). Squamæ and halteres almost brownish; larger species, 4½ to 5 mm.  
13 *umbrosa*, Stn.
- 26 (21). Mid metatarsus without a thorn.
- 27 (30). Mid tibia ventral surface with a tubercle.
- 28 (29). Mid femora bare at base on ventral surface.  
14 *vesparia*, Mde.
- 29 (28). Mid femora on ventral surface bristled to the base.  
15 *coracina*, Lw.
- 30 (27). Mid tibia without a tubercle, almost the apical half thickened.
- 31 (32). Hind femora with a fasciculus of hairs on the postero-ventral surface near the tip.  
16 *kozarsii*, Verr.
- 32 (31). Hind femora without a fasciculus at this part, either bare, or with a few bristles.
- 33 (34). Apical third of mid tibia distinctly but not greatly thickened ventrally.  
17 *verrallii*, Stn.
- 34 (33). Mid tibia either quite straight or with more than apical third thickened.
- 35 (40). Mid tibia with more than one antero-dorsal bristle.
- 36 (37). Calyptra black, halteres yellow; dull black species.  
18 *nigra*, Mall.
- 37 (36). Calyptra pale yellowish.
- 38 (39). Shining blue-black species; hind femora with postero-ventral surface bare.  
19 *carbonaria*, Mg.
- 39 (38). Black species; basal one-third of hind femora, postero-ventral surface, bristled.  
20 *polychæta*, Stn.
- 40 (35). Mid tibia with only one antero-dorsal bristle.<sup>1</sup>
- 41 (42). Hind tibia without the preapical bristle, mid femora with three strong bristles on the antero-ventral surface besides the ordinary bristles.  
21 *sociella*, Ztt.
- 42 (41). Preapical bristle present on hind tibia.
- 43 (44). Genitalia remarkably large and strong.  
22 *glaucescens*, Ztt.
- 44 (43). Genitalia not exceptionally large.

<sup>1</sup> *Sociella*, Ztt., has several bristles near the apex on this side, but these may be considered as apical.

- 45 (48). Hind tibia with rows of hairs.  
 46 (47). Larger, grey-brown species; pubescence on mid tibia very short. 23 *incisurata*, Ztt.  
 47 (46). Smaller, black species; pubescence looser, becoming longer towards the tip. 24 *mutica*, Ztt.  
 48 (45). Hind tibia not remarkably haired.  
 49 (50). Small matt-black species; last abdominal segment with two small shining knobs on the ventral surface. 25 *parva*, Stn.  
 50 (49). Rather larger, somewhat shining species; last abdominal segment normal.  
 51 (54). Calyptra pale, not brownish or black.  
 52 (53). Knees broadly yellow; fore tibia with an extra bristle. 26 *genualis*, Stn.  
 53 (52). Knees not conspicuously yellow; fore tibia normal. 27 *similis*, Stn.  
 54 (51). Calyptra dark brownish.<sup>1</sup>  
 55 (56). Hind femora with a row of bristles increasing in length from middle to tip. 28 *postica*, Stn.  
 56 (55). Hind femora with about three long bristles at the tip. 29 *serena*, Flh.

## TABLE OF FEMALES.

- 1 (8). Legs with at least the hind tibia translucent yellow.  
 2 (5). Femora and tibia almost entirely yellow.  
 3 (4). Scutellum partly yellow; small species, 4 to 5 mm. 3 *pretiosa*, Schin.  
 4 (3). Scutellum unicolorous grey; large species, 8 to 10 mm. 1 *hamata*, Macq.  
 5 (2). Femora black or brown.  
 6 (7). Hind tibia with three or four antero-ventral bristles. 2 *fuscula*, Flh.  
 7 (6). Hind tibia with one antero-ventral bristle. 4 *pallitibia*, Rnd.  
 8 (1). Legs with at most the knees yellow.  
 9 (16). Mid tibia with a ventral bristle.  
 10 (11). Orbits shining black, entirely undusted. 19 *carbonaria*, Mg.  
 11 (10). Orbits always with distinct dusting.  
 12 (13). Mid tibia with three antero-dorsal, one antero-ventral, and one postero-ventral bristle. 20 *polycheta*, Stn.

<sup>1</sup> *Postica*, Stn., has sometimes the calyptra yellow, but the armature of hind femora is distinct.

- 13 (12). Mid tibia with one antero-dorsal bristle.
- 14 (15). Legs all black, hind tibia with an antero-dorsal row of short bristles. 15 *coracina*, Lw.
- 15 (14). Legs with the knees distinctly yellow; fore tibia two-bristled. 26 *genualis*, Stn.
- 16 (9). Mid tibia without a ventral bristle.
- 17 (20). Base of abdomen translucent yellow, or thorax distinctly three-striped.
- 18 (19). Thorax three-striped, fore knees yellow, hind tibia with two antero-ventral bristles. 8 *canicularis*, L.
- 19 (18). Thorax uniform black-grey; fore knees black, hind tibia with one antero-ventral bristle. 9 *difficilis*, Stn.
- 20 (17). Abdomen never translucent yellow at base, dorsum never three-striped.
- 21 (24). Fore tibia with a small bristle in addition to the preapical one.
- 22 (23). Mid femora with the basal, long, ventral bristle present. 7 *scalaris*, F.
- 23 (22). Mid femora without the ventral bristle. 23 *incisurata*, Ztt.

(To be continued.)

## NOTES.

**Supposed Blue-headed Wagtail in "Dee."** — It seems advisable to publish a contradiction of an inaccurate record which was unfortunately printed in the *Aberdeen Daily Journal* for 23rd April 1912, in case the inaccuracy should find its way into scientific writings. The note in question states that a pair of Blue-headed Wagtails (*Motacilla flava*) had been observed at Durris, Kincardineshire, on the evening of 19th April, and further that the male had been shot and sent to Marischal College, University of Aberdeen, for identification. The specimen had indeed been sent to me, but proved to be an adult male Wheatear (*Saxicola oenanthe*)! It was unfortunate that a correspondent had already communicated the supposed record to the paper in question. The mistake apparently arose from the correspondent's attempt to determine the species from an inaccurate verbal description of the specimen.—A. LANDSBOROUGH THOMSON, Aberdeen.

### **Early Occurrence of the Swallow in Delting, Shetland.**

—On 30th March I received from Miss L. Moodie, Brae, a

specimen of the Common Swallow (*Hirundo rustica*, Linn.), so recently dead that a Liotheid parasite was still to be found moving over the skin of the lower neck. Miss Moodie *in lit.* remarked: "We caught this little bird the other day and put it in a cage, but it soon died." The actual date of capture was 27th March. This must surely be an early date for Shetland. The bird in question appeared to be not quite moulted. One or two pale feathers amongst the warm chestnut throat plumage came off with little handling.—JAMES WATERSTON, The Manse, Ollaberry, Shetland.

**Size of Immature Smew Drake.**—Concerning the note of the occurrence of a Smew in Elginshire, I think from the fact that the specimen was larger than an immature male in your correspondent's collection points to its also being an immature male, rather than an adult female, the immature males in the Mergansers and Diving Ducks proper always being larger than the adult females, and not smaller, as your correspondent states. Comparisons between stuffed specimens are, of course, no guide.—H. W. ROBINSON, Lancaster.

[The indication of size certainly points, as Mr Robinson says, to the specimen being a male.—EDS.]

**Smew in Wigtownshire.**—The Smew has been but seldom noticed in our county, but on the 12th April I watched an immature specimen for some time on the Castle Loch (Mochrum), a loch situated amid the moors some two miles from Luce Bay. Several times the Smew tried to join a party of seventeen Golden-eyes feeding near, but each time one of the latter rushed out and put it to flight. Two adult Drakes among them took no part in the affray.—J. G. GORDON, Corsemalzie.

**Smew on Duddingston Loch.**—An adult ♂ example of the Smew (*Mergus albellus*) was observed on Duddingston Loch by Mr John Currie on 11th February last. The loch was frozen over at the time, and the Smew was feeding in a hole in the ice along with Tufted Duck, Mallard, Moorhen, and Coot. Mr Currie watched the bird through his glasses for some considerable time, and observed that in diving it kept under water much longer than the Tufted Duck, one of the most expert of our diving ducks.

Most of the Smews recorded in the last issue of *The Scottish Naturalist* were females, and were either seen or obtained on the coast, so that it is interesting to be able to record the occurrence of a male bird away from the shore, and in the immediate vicinity of Edinburgh.—HUGH MACKAY, Edinburgh.

**Little Auk : a Correction.**—Mr J. G. Gordon, of Corsemalzie, Whauphill, informs us that the Little Auk recorded in the April number of the magazine (p. 80) as from Whauphill, Wigtownshire, was sent to him from North Berwick.—EDS.

**Three Hemiptera-Heteroptera new to the Scottish list, from the Forth Area.**—Since the publication of a number of my records of Hemiptera (Plant-bugs) in the *Ann. Scot. Nat. Hist.* for 1900 and 1901, I have taken in the Forth Area the following species, which so far as I am aware have not been recorded from Scotland:—

*Ischnorhynchus geminatus*, Fieb. — Abundant on bell-heather (*Erica cinerea*) in an open space in Boltonmoor Wood, Haddingtonshire, 30th July 1904.

*Coranus subapterus* (De G.).—Two taken on a bare spot on the edge of a heathy wood between Thornton and West Wemyss, Fife, 12th July 1901. No locality north of Norfolk is given for this species in Saunders' *Heteroptera of the British Isles*. Mr Saunders was shown one of my specimens.

*Allodapus rufescens* (Burm.).—On 23rd August 1902, I found a brachypterous example of this rare species in a nest of *Formica fusca*, at Balquhiddy, south-west Perthshire. Saunders gives no locality for it north of Yorkshire, and from Mr E. A. Butler I learn that, though its association with Ants has been recorded on the Continent, it does not seem to have been previously taken in their company in this country.—WILLIAM EVANS.

**Freshwater Rhizopoda from the Hebrides, etc.**—In the notes on this subject published in the number for March this year, I overlooked an important contribution by Prof. G. S. West, F.Z.S., to the Journal of the Linnean Society (*Zoology*), vol. xxix., 1905, entitled "Observations on Freshwater Rhizopoda, with some Remarks on their Classification," in which is given a list of thirty-one species from various localities in the Hebrides. For the benefit of those unable to refer to the original, appended is a list of the fifteen species found by Prof. West which are not included in my records from those islands:—*Nuclearia conspicua*, G. S. West; *Vampyrella lateritia*, *Amaba proteus*, *A. verrucosa*, *Pelomyxa palustris*, *Dactylosphaerium radiosum*, *Cochliopodium bilimbosum*, *Cyphoderia ampulla*, *Diffugia corona*, *D. Solowetzskii*, *Englypha ciliata*, *E. cristata* (length, 65 to 104  $\mu$ ); *Hyalosphenia platystoma*, G. S. West; *Nebela collaris*, *N. flabellulum*. This makes the number of species



recorded from the Hebrides eighty in all.—G. H. WAILES, New York.

[Other eleven species will be found in Mr J. M. Brown's St Kilda list, published in the May number of this magazine.—Eds.]

**Xantho hydrophilus, a rare Scottish Crab, in the Outer Hebrides.**—A fine male specimen of *Xantho hydrophilus* (Herbst) (*X. rivulosus*, auct.) has been forwarded for identification by John Anderson, Esq., M.A., of Stornoway. It was "found alive on the beach at Stornoway during the summer of 1909." The carapace is normal in colour—a rich yellow tinged with burnt sienna and red, in a tortoise-shell pattern—but the pincers, which are usually "brown, sometimes but little darker than the rest of the shell," are bluish black, exactly like those of *Xantho incisus*, a near relative. *Xantho hydrophilus* frequents rocky shores, where it is to be found under stones, or crouching in rocky clefts between tidemarks. It is a southern form, commonest in British waters on the borders of the English Channel, but exceedingly rare in Scotland. A solitary example was captured at the mouth of the Clyde estuary in 1899, by the Fishery Board's cruiser *Garland* (Scott, *Brit. Ass. Handbook*, Glasgow, 1901, p. 328); and one young specimen was dredged in 1867, near the Island of Balta in the Shetlands (Norman, *Brit. Ass. Reports*, Norwich, 1869, p. 263). Carrington and Lovett, in their "Notes and Observations on British Stalk-eyed Crustacea," say, indefinitely, that this species "has been recorded from the Shetlands and Hebrides" (*Zoologist*, 1881, p. 457), but I have been unable to trace any definite record from the latter islands.—JAMES RITCHIE, Royal Scottish Museum.

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## BOOK NOTICE.

SEA FISHERIES: THEIR TREASURES AND TOILERS, by Marcel A. Hérubel. Translated by Bernard Miall. Pp. 366. London: T. Fisher Unwin. Price 10s. 6d. net.

No nation has wider interests at stake in sea fisheries than has the people of Britain, with its 100,000 sea-going fishermen, and its enormous sea-harvest, averaging 958,000 tons, worth £10,120,000 a season. Yet we must go to France for an up-to-date and comprehensive account of sea fisheries in their modern developments.

Professor Hérubel naturally lays emphasis on the French aspect of the subject, but his study is so wide that it becomes invaluable

to the general inquirer after fishery information. The fish themselves are viewed in the light of their own habits, as creatures aggregated on definite fishing-grounds determined by definite physical conditions. Inquiry is made as to the impoverishment of the North Sea through natural and human agencies, and special condemnation is levelled at the inshore fisher and shrimper, "who devastates the breeding and spawning grounds, kills the fry and the young fish, and makes a desert everywhere." But, on the other hand, some satisfaction is to be found in the success of such experiments as those of transplanting fish from one ground to another more productive, and of "herding" them in artificial fish-ponds, for thus the natural yield is greatly increased. The second part of the volume contains the author's opinions on fishing in its human aspect: as the determinant of coast population, and as a mere trade with wide and complicated economic relations. Here the wages of the fishermen are discussed, as well as markets, modes of selling, and profits.

Valuable information is to be gathered from every page, and author and translator have combined to make a subject of great difficulty and complexity, clear and attractive. This English translation is to be welcomed, not only for its own sake, but in the hope that it may stimulate some expert on this side of the Channel to discuss sea fisheries after a similar fashion, but from a British point of view.—J. R.

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## GLEANINGS.

A fine example of the Wild Cat was obtained on the Applecross estate, Ross-shire, in April last. From the record in the *Field* of 13th April (p. 744) we learn that the animal, the sex of which is not stated, weighed over 15 lb., measured 40½ inches in length and 14 inches in height.

In the *Field* of 13th April 1912 (p. 744) appears a paragraph by "A. R.," which states that the Capercaillie is greatly on the increase in the Beaulieu district of Inverness-shire and the neighbouring part of Ross-shire. The birds were introduced at Guisachan, and are now fairly plentiful over a large area.

W. J. Balfour Kirke contributes a note to the May number of *British Birds* (p. 338) on "Fulmars breeding in Orkney." A few birds were reported at Stromness in 1908, and a colony at Costa Head. In 1910 a small colony was found on the cliffs to the north of Marwick Head, which showed an increase in 1911.

More familiar names must be discarded! In the *Entomologist* for May (pp. 151-152) Herbert Champion points out that the Dragon-fly hitherto known as

*Sympetrum scoticum*, Donovan, must in future bear the name of *Sympetrum danae*, Sulzer. It appears that a meagre description, accompanied by a recognisable coloured figure, was given by Sulzer in his *Geschichte der Insecten* in 1776, thirty-five years prior to the publication of Donovan's figure in his *British Insects*. We have now, alas, no Dragon-fly with a name of Scottish extraction.

Then Prof. T. Hudson Beare draws attention (*Ent. Mo. Mag.*, May 1912, pp. 101-102) to certain changes which have been made in the latest Catalogue of the *Cerambycidae* (sub-family *Cerambycinae*), drawn up by Dr Chas. Aurivillius, and issued as Part 39 of the *Coleopterorum Catalogus*, published by W. Junk, Berlin. The Scottish species concerned in these changes are: *Callidium variabile*, L., which becomes *Phymatodes testaceum*, L.; *Rhagium inquisitor*, F., and *R. indagator*, Gyll., which are now called *R. mordax*, De G., and *R. inquisitor*, L. respectively; *Pachyta cerambyciformis*, Schrk., and *P. sexmaculata*, L., which are referred to the genus *Judolia*, Muls.; *Strangalia armata*, Herbst, which becomes *S. maculata*, Poda; and *Grammoptera tabacicolor*, De G., which is placed in the genus *Alosterna*, Muls.

Prof. T. Hudson Beare contributes to the *Ent. Record* for May (pp. 114-117) the first portion of his "Retrospect of a Coleopterist for 1911." This useful paper shows us that no fewer than twenty-five species in this Order of insects were added to the British list during the past year. Several of these were discovered in Scottish localities.

In the *Zoologist* for May 1912 (pp. 190-192) Richard Elmhirst publishes "Some Observations on the Glow-worm (*Lampyris noctiluca*, L.)." These observations were made in a marshy field near the Millport Marine Biological Station, and led the author to conclude that the females of this interesting beetle often take up and occupy a permanent position, that their mates may appear in swarms of several hundreds, and that the latter show a decided preference for red light, which is contrary to what we should expect.

In the *Ent. Mo. Mag.* for May (pp. 106-108) J. E. Collin describes three new species of the Dipterous genus *Heteroneura*. One of them (*H. caledonica*) is described from specimens taken by Col. Yerbury and C. G. Lamb at Nethy Bridge and Golspie, while a second (*A. verticalis*) has occurred at Nairn.

Dr John H. Wood continues (*Ent. Mo. Mag.*, May 1912, pp. 97-99) his "Notes on British Phora," and mentions *P. rufa* and *P. cubitalis* as Scottish species, both being found by J. R. Malloch, late of Bonhill.

The Rev. J. Waterston records (*Ent. Mo. Mag.*, May 1912, p. 116) the occurrence of the Pediculid parasite *Hematopinus ventricosus*, Denny, in Shetland. It is reported by the author as a very torpid creature, occurring on the rabbit, both on Mainland and on the islands in Yell Sound.

In the May number of the *Entomologist*, W. J. Lucas publishes (pp. 141-144) the first instalment of a paper entitled "British Odonata in 1911," in which is a useful summary of the records and occurrences of Dragon-flies in Britain during the past year. It is interesting to note that *Sympetrum fonscolombii*, the new Scottish species recorded by W. Evans (*Scot. Nat.*, 1912, pp. 12-14), has also been taken in the New Forest, in West Suffolk, and in Merionethshire.





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## ABERDEEN UNIVERSITY BIRD-MIGRATION INQUIRY: FIRST INTERIM REPORT (1909-12).

By A. LANDBOROUGH THOMSON, M.A., M.B.O.U.

### I. GENERAL AND INTRODUCTORY.

THE Aberdeen University Bird-Migration Inquiry was founded early in 1909, for the purpose of prosecuting study by means of the "marking method," which had proved so successful on the Continent, but was at that time unknown in the British Isles except on a very restricted scale. I have carried on the inquiry as a piece of research from the Natural History Department of the University, under the supervision of Professor J. Arthur Thomson, and with a grant from the Carnegie Trustees to cover the working expenses. My friends Mr James Ewing, M.A., B.Sc., and Mr Lewis N. G. Ramsay, M.A., have rendered invaluable assistance in the "headquarters" work of the Inquiry. We are also indebted to over two hundred ladies and gentlemen who have taken part in the actual "marking" of birds, as well as to the many correspondents who have kindly informed us of "reappearances." I should also like to express my thanks to Dr J. Thienemann, of the German Ornithological Society's observation-station at Rossitten, where I first learnt the details of the method in 1908, paying a second visit in 1910.

This First Interim Report includes details of all the records obtained by our Inquiry up to the time of writing, prefaced by an outline of our methods. A few of our earlier

records have already been published,<sup>1</sup> but all are repeated here. We make no attempt, at this early stage of the work, at drawing conclusions from the facts collected. We have also thought it would be premature to give statistics of the numbers of birds marked, or of the percentages of "re-appearances," as no such figures could be final.

## II. METHODS.

*Rings.*—In its essentials the method consists in marking a large number of birds in some way or other for the sake of the data afforded by the subsequent reappearance of a small proportion of these. The mark employed in our Inquiry is a small aluminium ring which fastens round the bird's foot, but is too light and neat to inconvenience it in any way. Each ring bears the address "ABERDEEN UNIVERSITY" (contracted to "ABERDEEN UNIV." on the smallest size), which ensures that anyone finding the bird will communicate with us. Each ring also bears an identification number, different, of course, in each case. A plain number (sometimes written in two lines) is used where possible, but on the smallest size the small space has necessitated the use of such numbers as "0798," and letter combinations like "299A." After a good deal of experimenting we have settled on the following seven sizes (named according to their approximate internal diameter measured in fractions of an inch), the first four for ordinary use, and the three largest for those markers who have special facilities for ringing sea-fowl, etc. The first three sizes are

<sup>1</sup> In a general paper on "The Possibilities of Bird-Marking," in the *Proceedings of the Royal Physical Society of Edinburgh*, vol. xviii., pp. 204-218, 1911 (reprinted in the *Aberdeen University Studies*), I included a brief account of our Inquiry and its methods, and a selection of our earlier results. A similar selection of results has also appeared in the magazine *British Birds*, vol. iii., p. 220; vol. v., pp. 98-102, 129. Some records have also been included in notes which I have contributed to *The British Bird Book*, edited by F. B. Kirkman, 1910-1912. Two records were mentioned by Mr Francis Gunnis, one of our co-operators, in the *Annals of Scottish Natural History*, 1911, p. 118. In addition to this, many records have reached us through the daily press or have received notice therein.

of the clasplless pattern—simply bands folded into a circle, the edges being merely pressed together. The other rings are provided with clasps such as are used at Rossitten—two unequal ends are left to project outwards side by side where the circle meets, and the one can be folded down over the other; the edges of these rings are also turned outwards as flanges. Some of our earlier rings do not conform to the above descriptions. The following is a list of the sizes with some of the kinds of birds for which they can be used :—

$\frac{1}{8}$ —Finches, Swallows, Tits, Robin, Lark, Sandpipers, Lesser Tern, etc.

$\frac{3}{16}$ —Thrushes, Starling, Lapwing, Snipe, etc.

$\frac{1}{4}$ —Woodcock, Jackdaw, Black-headed Gull, Kestrel, Teal, Stock-dove, etc.

$\frac{5}{16}$ —Rook, Crows, Owls, Wood-pigeon, Guillemot, Wigeon, etc.

$\frac{3}{8}$ —Herring-gull, Mallard, etc.

$\frac{1}{2}$ —Gannet, etc.

$\frac{5}{8}$ —Heron, etc.

(All our rings are made by Mr Samuel Drake, Halifax.)

*Scope.*—Up to the present time our Inquiry has not been limited to any particular species, but has extended to all British wild birds, whether supposed to be migratory or not. But it is probable that at an early date we shall concentrate our efforts on some of the more repaying species. A few of our rings have been used for birds liberated from captivity, hand-reared wild-duck, imported game-birds, and the like, but records obtained for such birds are kept apart from the general data of our Inquiry. The actual work of marking is undertaken by ladies and gentlemen scattered all over the British Isles, but living mainly in Scotland and notably in Aberdeenshire. Most of them rely chiefly on young birds found when still unable to fly, varied by occasional chance captures of adult birds. A few, however, engage systematically in bird-catching during the winter months: the chief means employed are simple clap-nets, automatic cage-traps, or other harmless appliances; or catching roosting

birds at night with the aid of bright lamps, or as migrants at the lighthouse lanterns.

*Routine.*—Early in the year each of our co-operators in the work of marking fills up and sends us an estimate of the additional quantities of rings of various sizes he expects to be able to use during the season. Rings are sent out by us accordingly, or at any other time that they are specially asked for. The numbers, sizes, and destinations of all rings issued are carefully noted by us, and all reappearances of marked birds are checked by these notes. Along with the rings we send out schedules on which the data about all birds marked are filled in. The following information is asked for, each item in a separate column: (1) Number on ring; (2) Species of bird; (3) Date of marking and release; (4) Locality of same; (5) How obtained (“as young,” etc.); (6) Sex and age so far as certain; and any other remarks, including bracketing together members of the same brood, etc., with word to that effect. The marker’s name is filled in at the top, and we give each schedule a reference number as it comes in.

Each schedule holds the data of seven or more marked birds, and is sent in as soon as it is complete, or when any record in it is a month old, whichever happens first. The data are transcribed into large ledgers, in which the entries are arranged according to the ring numbers. These ledgers are provided with five columns corresponding to those of the data schedules, with additional columns for the marker’s name, the schedule’s reference number, and also for the size of the ring. A final column is left blank for the purpose of entering a reference to the page in the separate book in which reappearance records are entered, each on a page of its own, as they come in.

*Reappearances.*—When one of our marked birds is reported to us as killed, or recaptured, the number on the ring is what we chiefly desire, along with a note of the locality and approximate date of the occurrence. When possible we get the ring, or ring and foot, sent to us that we may verify the number for ourselves. The identification of the species, when possible, is an additional check on the accuracy of

the number—a wrong number is fairly certain to be revealed by some inconsistency between the data of marking and of reappearance. If it is said that errors must occasionally escape detection, we may point out that in the long run no undue importance will ever be placed on a *single* exceptional record: our precautions, however, are redoubled in the case of records from abroad, or of any others which are of considerable individual interest. Incomplete or inaccurate records are excluded from our reports.

A large number of birds are naturally recorded from the places of their marking, and the interest of such records depends on the lapse of time and on the other circumstances of the case. All such records are, however, included in this report, with the exception of records of birds obtained at the locality of marking on the same day (or within the flightless period, in the case of young birds) under circumstances of no particular interest. Such records may, however, be noted among the data of marking (under "remarks") in case the bird reappears later: but if the bird is killed, or deprived of its ring, at this early stage, it is usually cancelled as if it had not been marked at all, although the ring, for fear of confusion, is not used again. In the case of ordinary "reappearances" also, the ring is not used again, but it is of course left on a bird which is captured and then liberated, for peculiar interest attaches to the second or third reappearance of a single bird, and we have indeed cases of a bird reappearing half a dozen times or more.

### III. DETAILS OF RESULTS.

As already stated, we give below details of all the "reappearances" notified to us up to the time of writing. These reappearances are classified under the headings of species, except that records dealing with hand-reared or imported birds and the like are kept apart ("Appendix").

Each record, or set of records about one bird, is headed by the number of the "case" (this being the number of the page in the "reappearance" record book already mentioned), the sex if known, and the number on the ring. Then under

the date of marking are given the locality and the other essential facts of the marking, followed by the marker's name in brackets. Under the date of subsequent reappearance are given the locality and the other essential facts of that event, followed by the informant's name; and further records, if any, are similarly set forth under their respective dates. If the ring was returned for verification the fact is noted after the informant's name, and other remarks are added in a few cases.

We begin with the non-passerine species, which give us fewer records, but most of them of considerable individual interest. The passerine birds afford many records which are of slight individual importance, but which will undoubtedly prove of value when the time comes to collect and correlate them.

GUILLEMOT (*Uria troille*, L.).

CASE 111, ring A.U. 11230:—

- 11th July 1910: marked as a newly hatched chick on the Dunbuy Rock, near Cruden Bay, Aberdeenshire, Scotland. (Mr L. N. G. Ramsay.)
- 29th Nov. 1910: shot in the harbour of Marstrand, about twelve miles north of Gothenburg, Sweden. (Dr L. A. Jägerskiöld: specimen preserved in Gothenburg Museum.)

HERRING-GULL (*Larus argentatus*, Pontopp.).

CASE 89, ring A.U. 10963:—

- 2nd July 1910: marked as a nestling on Hummel Craig, near Collieston, Aberdeenshire, Scotland. (Mr L. N. G. Ramsay.)
- 8th Sept. 1910: shot at Saltfleet, near Mablethorpe, Lincolnshire, England. (Mr G. W. Hollis.)

CASE 92, ring A.U. 10952:—

- 2nd July 1910: marked as a nestling on Hummel Craig, near Collieston, Aberdeenshire, Scotland. (Mr L. N. G. Ramsay.)
- 3rd Oct. 1910: shot on the beach near Hunstanton, Norfolk, England. (Mr R. W. Dodman: ring returned.)

CASE 93, ring A.U. 10624:—

- 11th July 1910: marked as a young bird nearly able to fly

on the Dunbuy Rock, near Cruden Bay, Aberdeenshire.  
(Mr L. N. G. Ramsay.)

13th *Sept.* 1910: found with broken wing in the Albert Basin,  
Aberdeen harbour. (Mr G. Allan: ring returned.)

CASE 94, ring A.U. 10555:—

11th *July* 1910: marked as a young bird nearly able to fly on  
the Dunbuy Rock, near Cruden Bay, Aberdeenshire,  
Scotland. (Mr L. N. G. Ramsay.)

1st *Oct.* 1910: shot on the Humber Bank, Grimsby, Lincoln-  
shire, England. (Mr G. Dales: ring returned.)

CASE 97, ring A.U. 10815:—

2nd *July* 1910: marked as a nestling on Hummel Craig,  
Collieston, Aberdeenshire. (Mr L. N. G. Ramsay.)

12th *Oct.* 1910 (about): shot in the estuary of the river Eden,  
Fifeshire (newspaper cutting of date 15th *Oct.*).

CASE 101, ring A.U. 10650:—

11th *July* 1910: marked as a young bird a few days old on the  
Dunbuy Rock, near Cruden Bay, Aberdeenshire. (Mr L.  
N. G. Ramsay.)

4th *Oct.* 1910 (about): found dead on the beach at Tayport,  
Fifeshire. (Mr J. Aimer: ring returned.)

CASE 104, ring A.U. 15901:—

7th *Oct.* 1910: caught at night as an immature bird on the  
shore a few miles north of Aberdeen, marked, and  
liberated. (Messrs L. N. G. Ramsay and A. G.  
Davidson.)

15th *Nov.* 1910: found injured at the shipbuilding yards,  
Aberdeen. (Mr G. Duffus.)

CASE 112, ring A.U. 12140:—

7th *June* 1910: marked as a nestling a few days old at Loch  
an Eilein, the Lewis, Outer Hebrides. (Mr A. Harley.)

5th *Dec.* 1910 (about): found dead (shot) at Stornoway, the  
Lewis. (Mr T. A. Lowe.)

CASE 121, ring A.U. 15937:—

6th *July* 1910: marked as a newly hatched chick on the  
Dunbuy Rock, near Cruden Bay, Aberdeenshire, Scotland.  
(Mr L. N. G. Ramsay.)

30th *Jan.* 1911 (about): caught at Andenshaw, Manchester,  
England: released with ring on 7th *March* 1911, "in first-  
class condition." (Mr W. Yates.)

## CASE 153, ring A.U. 16055:—

*6th July* 1910: marked as a nestling a few days old on the Dunbuy Rock, near Cruden Bay, Aberdeenshire, Scotland. (Mr L. N. G. Ramsay).

*Sept.* 1910: shot at Ryhope Beach, near Sunderland, Co. Durham, England. (Mr J. Cope.)

## CASE 205, ring A.U. 16075:—

*3rd Oct.* 1910: caught at night as a bird in first year's plumage on the shore a few miles north of Aberdeen, marked, and released. (Messrs L. N. G. Ramsay and A. G. Davidson.)

*20th May* 1911: caught in a field at Nap, Burray, Orkney Islands, and released immediately. (Mr W. J. Harcus. The bird was caught at Nap by Mr David Sinclair, who was working in the field, and suddenly turned round on the bird following him!)

## CASE 217, ring A.U. 10506:—

*3rd Oct.* 1910: caught at night on the shore a few miles north of Aberdeen, marked, and released. (Messrs L. N. G. Ramsay and A. G. Davidson.)

*26th June* 1911: struck a telegraph wire in Union Street, Aberdeen, receiving fatal injuries. (Aberdeen City Police.)

## CASE 232, ring A.U. 17720:—

*23rd June* 1911: marked as a nestling a few days old at the Brander, near Fast Castle, Berwickshire. (Mr J. F. Cormack.)

*3rd Aug.* 1911: found dead near place of marking. (Mr D. P. Irvine.)

## CASE 254, ring A.U. 17793:—

*16th July* 1911: marked as a half-fledged nestling on a cliff near the Hummel Craig, Collieston, Aberdeenshire, Scotland. (Miss D. H. Begg.)

*7th Sept.* 1911: shot at Kilnsea, near Hull, Yorkshire, England. (Mr S. Robinson: ring returned.)

## CASE 277, ring A.U. 10847:—

*2nd July* 1910: marked as a nestling on the Hummel Craig, Collieston, Aberdeenshire, Scotland. (Mr L. N. G. Ramsay.)

*26th Nov.* 1911: found wounded in a ditch near Hartlepool, Co. Durham, England. (Mr J. M. Shingles.)



CASE 333, ring A.U. 16017:—

3<sup>rd</sup> Oct. 1910: caught at night as a bird in first year's plumage on the shore a few miles north of Aberdeen, marked, and released. (Messrs L. N. G. Ramsay and A. G. Davidson.)

7<sup>th</sup> March 1912: found dead ("considerably decayed") at Lochside, Skene, Aberdeenshire. (Mr J. Fraser, through the Rev. W. Innes.)

CASE 334, ring A.U. 10589:—

7<sup>th</sup> Sept. 1910: caught at night as an immature bird on the shore near Aberdeen, Scotland, marked, and released. (Messrs L. N. G. Ramsay and A. G. Davidson.)

6<sup>th</sup> May 1912: shot at Asaa, east coast of Jutland, Denmark. (Mr A. Christensen.)

COMMON GULL (*Larus canus*, L.).

CASE 253, ring A.U. 15370:—

17<sup>th</sup> July 1911: marked as a nestling at Inishail, Loch Awe, Argyllshire. (Mr A. Campbell.)

11<sup>th</sup> Sept. 1911: found dead "on the moors," near Helensburgh, Dumbartonshire. (Mr S. Forsett.)

CASE 276, ring A.U. 15356:—

13<sup>th</sup> July 1911: marked as a nestling at Inishail, Loch Awe, Argyllshire. (Mr A. Campbell.)

30<sup>th</sup> Dec. 1911: found dead on the shore at Cardross, Dumbartonshire. (Mr T. Taylor: ring returned.)

BLACK-HEADED GULL (*Larus ridibundus*, L.).

CASE 61, ring A.U. 12496:—

4<sup>th</sup> June 1910: marked as a nestling on Skipwith Common, 10 miles S.W. of York, England. (Mr H. R. Davidson.)

30<sup>th</sup> July 1910: found shot at Hedon, near Hull, Yorkshire. (Mr J. Holden: ring returned.)

CASE 67, ring A.U. 12409:—

11<sup>th</sup> June 1910: marked as a nestling on the Sands of Forvie, Aberdeenshire. (Mr A. L. Thomson.)

5<sup>th</sup> Aug. 1910: picked up exhausted on the beach at Aberdeen; released in good health, 8<sup>th</sup> Aug. 1911. (Brought to Marischal College by a small boy.)

(To be continued.)

THE BRITISH SPECIES OF THE DIPTEROUS  
GENUS *FANNIA*, ROB. DSV.

By J. R. MALLOCH.

(Continued from page 139.)

TABLE OF FEMALES—Continued.

- 24 (21). Fore tibia with only the preapical bristle.  
 25 (28). Mid tibia with at least two antero-dorsal bristles.  
 26 (27). Mid tibia with two antero-dorsal, hind tibia with one antero-ventral bristle. 16 *kowarzii*, Verr.<sup>1</sup>  
 27 (26). Mid tibia with three antero-dorsal, and hind tibia with three or four antero-ventral bristles. 11 *armata*, Mg.  
 28 (25). Mid tibia with only one antero-dorsal bristle.  
 29 (32). Hind tibia with three to four antero-ventral bristles.  
 30 (31). Fore tibia broadly yellow at the base. 5 *manicata*, Mg., or 6 *monilis*, Hal.  
 31 (30). Fore tibia inconspicuously, if at all, yellow at base. 24 *mutica*, Ztt.  
 32 (29). Hind tibia with only one antero-ventral bristle.  
 33 (34). Metallic, shining, brassy-green species; frons narrowed behind. 22 *glaucescens*, Ztt.  
 34 (33). Black or brownish species; frons parallel-sided.  
 35 (38). Legs with the knee-joints conspicuously yellow.  
 36 (37). Mid tibia with two antero-dorsal bristles.<sup>1</sup> 16 *kowarzii*, Verr.  
 37 (36). Mid tibia with one antero-dorsal bristle.<sup>1</sup> 21 *sociella*, Ztt., or 27 *similis*, Stn.  
 38 (35). Legs with only the fore knees inconspicuously yellow.  
 39 (40). Orbits dusted in front, but perceptibly shining behind. 29 *serena*, Fln.  
 40 (39). Orbits nowhere perceptibly shining.  
 41 (44). Middle stripe of frons conspicuously pale grey dusted.  
 42 (43). Basal ventral bristle on mid femora strong. 12 *aërea*, Ztt.  
 43 (42). Basal ventral bristle absent from mid femora. 17 *verralli*, Stn.  
 44 (41). Middle stripe always distinguishable from orbits by its darker colour.  
 45 (46). Ventral basal bristle on mid femora strong. 28 *postica*, Stn.  
 46 (45). Ventral basal bristle weak, or absent. 25 *parva*, Stn.

<sup>1</sup> See remarks under descriptions of these species.

The females of *carteri*, Mall., *nigra*, Mall., and *umbrosa*, Stn., are undescribed, and the same sexes of *manicata*, Mg., and *monilis*, Hal., and *sociella*, Ztt., and *similis*, Stn., are hardly, if at all, distinguishable.

SPECIES WITH AT LEAST THE HIND TIBIA TRANSLUCENT YELLOW.

1. *hamata*, Macq., ♂. Brownish black, thickly dusted with grey; eyes separated by a narrow stripe, orbits distinctly silvered; frons, epistome, and jowls projecting more than in the generality of the species beyond the eyes; antennæ shorter than the face, brownish black, arista bare; thorax thickly dusted with grey, side margins rather whitish, dorsum with four rather indistinct stripes; on the underside of the pleuræ between the fore and mid coxæ are two strong downward-directed thorns; abdomen thickly grey dusted, dorsum with a dark dorsal stripe rather narrowly triangularly dilated at the apex of each segment; anal organ small, coloured as the abdomen; legs yellow; fore femora except the under surface, fore tibia except the base, and the whole of the tarsi, black-brown; mid coxa with a strong downward-directed, backward curved thorn; mid femora rather strong, distinctly contracted at the tip; postero-ventral surface with a row of bristles, which at the base are longer, but gradually decrease in size as they advance, until beyond the middle they form a rather thick series of about three parallel rows, occupying the entire apical half except the contracted portion, which carries a clump of very short closely placed bristles; antero-ventral surface with a row of about nine strong bristles on the basal two-thirds, the other bristling normal; mid tibia thickened on the apical half, ventral side, and with rather long pubescence on the thickened portion; antero-dorsal surface with two bristles on the apical half, the upper the weaker, the other bristling normal; the hind femora are not remarkably bristled, but the hind tibiæ have the whole of the ventral surfaces, except the extreme base, clothed with very long curved bristle-like hairs, those on the antero-ventral surface being stronger than those on the postero-ventral surface; besides the usual dorsal bristles, and the one on the antero-dorsal surface, there are generally three weaker bristles above the latter; wings clear, yellow at the base, third and fourth veins convergent, outer cross-vein nearly straight; calyptra unequal in size, yellow; halteres yellow.

♀. In colour much the same as the ♂; eyes more widely separated, at the widest part above the antennæ, by about one-third the breadth of the head, at the ocelli by about

one-fifth; middle stripe black or brownish, orbits silvered, middle stripe above the antennæ twice the breadth of the orbits; abdomen more pointed, less flattened, and without the dorsal stripe; fore legs not so much blackened as in the ♂; the hind tibia carry on the antero-ventral surface an alternately arranged row of about seven bristles, those on the uppermost row stronger than the under, the other bristling as usual; wings more rounded than in the ♂. 8 to 10 mm.

This is the largest species of the genus. It is generally distributed, and not uncommon. I have seen it at Bonhill in hundreds, hovering much as the *Syrphidæ*, in the shade of the trees in a beech wood, May to June. (The abdomen is sometimes testaceous.)

2. *fuscata*, Fln., ♂. Black; frons, epistome, and jowls hardly projecting; frontal stripe rather broad for a ♂ of this genus, middle stripe matt black, orbits silvered; antennæ shorter than the face, arista slightly pubescent; thorax black, shining, sides whitish grey dusted; dorsum viewed from behind with generally two rather indistinct stripes on the fore part, pleuræ armed as in *hamata*; abdomen nearly parallel-sided, distinctly grey dusted, the dorsal stripe interrupted at the hind margin of the segments and not with marked triangular dilatations; anal organ moderately large; legs black, the hind tibia, the mid tibia except the base, and the fore tibia yellowish or brownish; mid coxa armed as in *hamata*; mid femora bristled much as in *hamata*; mid tibia hardly thickened on the apical half, pubescence on the ventral surface very short on the basal portion, but longer on the tip half, not so erect as in *hamata* and much more indistinct, the usual bristles present; bristling of hind femora not remarkable; hind tibia bent, fringed with hairs as in *hamata*, but much shorter in comparison, and the antero-ventral row more bristle-like; the usual two dorsal bristles present; the antero-dorsal surface carries five or six bristles, the lower one the strongest; wings greyish, third and fourth veins convergent, outer cross-vein bent, last portion of the fourth vein about one and a half times the penultimate; calyptra unequal in size, yellowish; halteres yellow.

♀. Similar in colour and general appearance to the ♂; eyes separated by about one-third the breadth of the head at the antennæ and by one-fourth at the ocelli; middle stripe matt black, at its broadest part about three times the breadth of the orbits at that part; orbits silvered, narrowed in front; abdomen not so distinctly dusted as in the ♂, more pointed, and with

but rarely faint indications of a dorsal stripe; legs coloured as in the ♂, but, except in the case of the hind tibia, with only the ordinary bristles; the hind tibia carries on the antero-ventral surface a row of about five equally long bristles, the usual dorsal bristles, and the same antero-dorsal bristles as the ♂; the wings are clearer than in the ♂. 6 to 7 mm.

Not uncommon at Bonhill (Dumbartonshire) in July and August. I have also seen it from Nethy Bridge (King).

3. *pretiosa*, Schin., ♂. Black; frons not projecting, epistome and jowls hardly projecting; frontal stripe very narrow; antennæ rather long, brownish, third joint three times as long as the second; arista pubescent, pale at the base; palpi brownish; thorax black, shining, sides distinctly grey dusted, dorsum with four indistinct stripes; scutellum with the hind margin yellowish; abdomen translucent yellow on the basal four segments, the first segment entirely, the second with the exception of an orange triangular dorsal mark, the third except a brown dorsal mark of similar nature, and the fourth except a dark brown hind marginal band extended on the dorsum and the sides forward, yellow, the apex, including the anal organ, black brown; legs yellow, hind femora at the tip, and hind tibia more or less brown, tarsi black; mid femora with an antero-ventral row of about seven long bristles on the basal two-thirds, the basal four rather widely placed and of about equal length, the other three closer and shorter, from this part to the tip a row of somewhat weaker, shorter, close placed bristles on the contracted portion, a postero-ventral row of long and fine bristles, beginning with the very long basal one, decreasing towards the tip in length, and a posterior row of long hairs which begins at about one-third from the base and ends in longer and stronger bristles at the tip, the other bristling normal; mid tibia with the apical half distinctly thickened on the ventral side, and on this side covered with pubescence, which is very short and indistinct on the basal half, but longer and thicker on the swollen portion, the usual bristles present; hind femora with an antero-ventral row of very short but strong bristles of equal length except the tip three which are longer, postero-ventral surface with a row of hair-like bristles increasing in size to the tip; hind tibia with only the usual bristles; wings darkened especially at the tip, third and fourth veins nearly parallel, outer cross-vein nearly straight, last portion of the fourth vein about two and a quarter times the penultimate; calyptra unequal in size, whitish; halteres yellow.

♀. Somewhat similar in appearance to the ♂ ; the frontal stripe about one-third the breadth of the head, nearly parallel-sided, middle stripe black-brown, reddish in front, orbits grey dusted, at their broadest part not half so broad as the middle stripe ; thorax as in the ♂ , but the shoulder-points yellow and the scutellum almost entirely yellow ; abdomen fulvous, sometimes darkened at the apex, which is rather pointed ; legs coloured as in the ♂ , but with only the usual bristles ; wings clearer and not so pointed as in the ♂ .

5 mm.

Rare in Scotland. I have only met with one ♀ at Bonhill, 8th August 1908. My series was sent me by Mr F. C. Adams, from New Forest, and are dated 15th August 1906.

4. *pallitibia*, Rnd., ♂. Black ; eyes separated by a narrow line, very large, in profile occupying almost the entire side of the head ; antennæ rather short and broad, third joint barely twice as long as the second ; arista slightly pubescent ; thorax shining black, almost without dusting except on the sides, and without stripes ; abdomen with slight dusting, distinctly shining, dorsal line distinctly triangularly dilated on each segment, anal organ of moderate size ; legs brownish yellow, the femora darker, tarsi black ; mid femora not very distinctly contracted at the tip, the antero-ventral surface with about five or six bristles from the base to the middle, and from there to the tip the bristles are shorter and closer together, postero-ventral row beginning with the usual long hair-like bristle, decreasing in size towards the tip (this row begins on the ventral surface at the long bristle, and finishes on the postero-ventral surface, so that I have had some difficulty in assigning a definite name to it), the other bristling on the posterior surface, rather long and hair-like, ending in three or four strong bristles at the tip ; mid tibia not much thickened on the apical half, clothed with pubescence on the ventral surface, which is distinct, but not long, on the basal half, and long, somewhat erect, and rather loose on the apical half, the usual bristles present ; hind femora with an antero-ventral row of short bristles which ends in two longer and stronger bristles at the tip, and a somewhat similar row on the postero-ventral surface which ceases about one-third from the tip ; hind tibia with the usual four bristles ; wings browned, third and fourth veins almost parallel, outer cross-vein almost straight, last portion of fourth vein about two and a half times the penultimate ; calyptera equal in size, brownish ; halteres brown.

♀. Frontal stripe almost one-third the breadth of the head ;

middle stripe reddish, orbits grey dusted, narrow in front but widening behind, at the broadest part about three-fourths as broad as the middle stripe at that part; arista more distinctly pubescent than in the ♂; thorax grey dusted but shining; abdomen shining, grey dusted, dorsal stripe absent; legs coloured as in the ♂, but with only the usual bristles; wings slightly darkened and less pointed than in ♂; calyptra and halteres pale yellowish.  $4\frac{1}{2}$  to 5 mm.

Common at Bonhill in August and September.

SPECIES WITH ONLY THE KNEE-JOINTS OR BASE OF FORE  
TIBIA YELLOW.

5. *manicata*, Mg., ♂. Black; eyes distinctly but not widely separated by a black frontal stripe; frons, epistome, and jowls slightly projecting; third joint of antennæ rather more than twice as long as the second; arista almost bare; thorax shining black, sides and dorsum behind brown-grey dusted; abdomen pale grey dusted, the dorsal stripe rather widely triangularly dilated on each segment; anal organ small; legs black, with the exception of the tip of the fore femora on the anterior side and the basal two-thirds of the fore tibia, which are yellowish; fore tibia with a tuft of bristly hairs at the tip on the postero-ventral surface; the fore coxa has a thorn behind, near the tip, which is only visible when the coxa is in a favourable position; mid coxa with a strong downward and backward-directed thorn with a curved point; mid femora swollen to about one-third from the tip, thickest near the end of the swelling, the antero-ventral surface with a row of long bristles, about ten in number, the last three or four close together on the thick part of the femora, apical third bare except for a few very short bristles at the tip; a somewhat similarly disposed row of softer, hair-like bristles on the postero-ventral surface, which forms a denser clump of bristles on the thickened portion; the other bristling normal; mid tibia with the ventral surface on the apical two-fifths swollen, raised about the middle of the swelling into a tubercle, the pubescence extremely short on the basal portion, but erect and long on the swollen part; the bristling as usual; hind femora with a regular row of bristles on the antero-ventral surface; hind tibia with the usual dorsal bristles, a row of bristles also on each of the postero-ventral, antero-dorsal, and antero-ventral surfaces; wings greyish, third and fourth veins convergent, outer cross-vein nearly

straight; outer portion of fourth vein about two and a half times the penultimate; calyptæ unequal, whitish; halteres yellow.

♀. Entirely shining black, only the fore tibia on the basal half yellow; frons rather more than one-third the breadth of the head, middle stripe matt black, about one and a half times as broad as the orbits above the antennæ, but about equal at the broadest part of the orbits; orbits grey dusted; thorax grey-brown dusted, shining; abdomen shining black, with but little dusting; fore and mid tibia with the usual bristles; hind tibia with a row of about four bristles on the antero-ventral surface. (The fore tibiæ are said by Stein to have sometimes an extra bristle, in which case the specimen would hardly be separable from *scalaris*.) 6 to 7 mm.

Not rare at Bonhill. May to August; Musselburgh and Blairgowrie (A. E. J. Carter).

6. *monilis*, Hal., ♂. Very similar in appearance to the foregoing, but smaller; the fore tibia has the hair tuft, and is coloured as in *manicata*; the fore tarsi have the last four joints dilated and the metatarsi normal; the thorn on the fore coxa is weaker; the thorn on the mid coxa is rather weaker than in *manicata*, but is more distinctly bent backward for a greater length; mid femora bristled much as in *manicata*; mid tibia not tuberculate, but only slightly and gradually thickened on the ventral surface on the apical half; pubescence rather short, longer towards the apex; the hind femora have on their antero-ventral surface a row of short bristles from base to tip, the last three being rather longer, and on the postero-ventral surface a few hair-like bristles on the basal half; the hind tibia has on the antero-ventral surface a row of equally long bristles, on the antero-dorsal surface a row of long hair-like bristles, and on the postero-ventral surface a few weak bristles on the middle; calyptæ unequal, darkened; halteres yellow; wings darkened, third and fourth veins convergent, outer cross-vein nearly straight.

♀. I have not met with the ♀, but Stein says that it is very similar to *manicata*, but has the thorax more brownish and the abdomen more pointed, besides being smaller.  $4\frac{1}{2}$  to  $5\frac{1}{2}$  mm.

I have met with two males at Bonhill, 4th May 1907 and 30th May 1907. Bred from fungi, Musselburgh, May 1905 (A. E. J. Carter).

7. *scalaris*, Fab., ♂. Eyes narrowly separated, frons slightly projecting, jowls descending slightly below the eyes; antennæ



of moderate length; arista nearly bare; thorax grey-black dusted, with the dorsum indistinctly two-striped; abdomen thickly grey dusted, dorsal line dilated triangularly on each segment, anal organ small; legs black, base of fore tibia, tip of fore femora anterior surface, and knee-joints yellow; fore coxæ with a thorn on their inner sides; fore tibia with a weaker bristle above the preapical one; mid coxa armed as in *manicata* and *monilis*; mid femora much dilated, strongest at a little beyond the middle, the bristling much as in the foregoing but rather more conspicuous; mid tibia of nearly equal thickness to beyond the middle, then on the ventral surface a distinct thickening, produced into a somewhat pointed tubercle, the hind angle very long compared with the fore one; pubescence on the basal half of the ventral surface very inconspicuous, on the apical side of the tubercle rather longer, and very long at the apex beyond the tubercle; hind femora with a row of very short bristles on their antero-ventral surface, which increase in length as they approach the apex; hind tibia with a row of about four or five bristles on the antero-ventral surface, a row of rather small even bristles on the basal two-thirds of the antero-dorsal surface, the usual lower one the strongest, the usual dorsal bristles and two or three weak bristles on the postero-ventral surface; wings nearly clear, third and fourth veins convergent, outer cross-vein bent; calyptra unequal, yellowish; halteres yellowish.

♀. Very similar to the ♀ of *manicata*, but greyer in colour, the most reliable distinguishing point between the two being that in *scalaris* there is present, as in the ♂, a rather weak bristle on the apical third of the antero-dorsal surface of the fore tibia. The long hair-like bristle at the base of the mid femora, on the ventral surface, is very conspicuous in this species, while in *manicata* it is not at all noticeable from the other bristles; the hind knees are generally distinctly yellow in *scalaris*, while they are black, or nearly so, in *manicata*.

6 to 7 mm.

One of the very commonest species. I take it abundantly at Bonhill, and have seen it from various localities. May to October.

7A. *ciliata*, Stn., ♂. Black; eyes nearly confluent; frons slightly, jowls hardly, projecting; antennæ of moderate length, third joint about two and a quarter times the second; arista nearly bare, gradually thickened on the basal third; thorax deep black, hardly shining, slightly grey dusted; abdomen shaped as in

*serena*, dorsal line distinct, fore margins of segments distinctly pale grey dusted, hypopygium inconspicuous; legs black, fore knees and base of tibiæ yellowish; fore coxæ as in *monilis*, mid coxæ with a strong, downward-directed, backward-turned thorn; mid femora constricted at apex, antero-ventral surface with a row of bristles about eleven in number, the first five weaker and rather widely placed, the others closer placed and much stronger, the constricted part bare, and about eight small comb-like bristles at the tip; the postero-dorsal bristles more numerous, much as in *monilis*; mid tibiæ ventrally with a slight swelling before the middle and the apical two-fifths distinctly but not greatly swollen, the pubescence on the ventral surface close, and thick, not very long, but only slightly longer on the tip portion; the bristling peculiar in having the antero-dorsal one very long and near the tip, and the postero-dorsal one small and in the usual position; hind femora nearly bare, two or three long bristles on the antero-ventral surface at the tip; hind tibia with the antero-dorsal surface clothed with long bristle-like hairs, the dorsal bristles very long, and the antero-ventral surface with a row of long bristle-like hairs of somewhat similar nature; hind tarsi, especially the last joints, with longer hairs than in any of the other *Fannia* species; wings dark coloured, third and fourth long veins convergent, last portion of fourth vein about two and a quarter times the penultimate; calyptra unequal, blackish; halteres yellow.

One ♂, Forres, 23rd July 1904 (J. J. F. X. King).

(*To be continued.*)

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## NOTES.

**Lesser Shrew and Badger near Glasgow.**—It may be of interest to record in the *Scottish Naturalist*, that on the 5th February last I caught a Lesser Shrew (*Sorex minutus*) here.

On the 21st April I saw fresh tracks of an animal which I believe to be a Badger (*Meles meles*), and have seen the animal twice since then running about in a field in the late evening when it was too dark to see it clearly even with field-glasses. I have never heard of a Badger in this district before.—JAMES BARTHOLOMEW, Torrance, near Glasgow.

**Badgers in Kirkcudbrightshire.**—A Badger (*Meles meles*)

was killed at Menquhill, near Dalry, at the end of March last; while another was caught on 14th May, by a gamekeeper, on Newton Hill, near Gatehouse. The latter was recorded in the *Dumfriesshire and Galloway Standard* of 18th May.—HUGH S. GLADSTONE, Thornhill, Dumfriesshire.

**Continental Song-Thrush in the Moray and Solway Areas.**—On the night of 30th-31st March 1911, one Continental Song-Thrush (*Turdus philomelos philomelos*) and eight Skylarks struck the lantern at Tarbatness Lighthouse. Weather conditions at the time were: wind east, light; some haze. On the same night, at Mull of Galloway Lighthouse, the following birds were killed: two Continental Song-Thrushes, one Blackbird, one House-Sparrow, ten Starlings, and five Skylarks. This is the most western record of the occurrence of *Turdus philomelos philomelos* for the British Isles, as this subspecies has not yet been reported from Ireland. To Mr H. F. Witherby my thanks are due for the identification of this racial form.—ANNIE C. JACKSON, Swordale.

**Northern Form of Willow-Wren in Solway.**—I have to report that a Willow-Wren, which was obtained at Mull of Galloway Lighthouse on 16th-17th May 1911, is of the Northern form (*Phylloscopus trochilus eversmanni*). This, I believe, constitutes the only western record of this subspecies for the British Isles. To Dr C. B. Ticehurst I am indebted for the identification.—ANNIE C. JACKSON, Swordale.

**Fatality amongst Rooks.**—The almost complete absence of Rooks this spring and summer is the cause of my troubling the Editors of the *Scottish Naturalist* with the following notes. We had quite the usual congregation busy repairing old tabernacles, and "building new ones," and quite the usual bowing and scraping, and "how-d'ye-do's," while consultations progressed. Then came the calm of contentment, and the brooding half of the population settled down to their ordinary quiet life. Then, alas! for their peace and future welfare—the heavens opened and the winds blew, and soon it was observed what a scarcity of the black-coated gentry was to be seen around their parochial homes. Many trees were blown down in that severe gale in early April, and it was forced upon our observation that there had also been a catastrophe amongst the inhabitants of our "Craw-hill." When the season approached for shooting the birds, almost none was to be had, and few even of the old birds were to be seen. They had *emigrated*—at all events they had quitted this part of the country.

The fact is—to cut a longer story short—it was with the utmost

difficulty a very few young Rooks—*branchers*—were obtained, perhaps three dozen in all; whereas, in other years, many scores—even hundreds—have been shot, and the village supplied with the annual “Craw-tairts.” I learned later that a similar fatality must have occurred in another township at a large rookery at Cowie, and where “Crow-pie” has been a most unwonted dainty in 1912. I have not made inquiries further afield; but if someone else has had similar experiences, the unusual “shortage” of the seasonal food-supply in this direction might be worth while recording. It may prove, too, of interest in the near future to note what effects remain in the welfare of these birds, as affected by the storms of 1912.

I venture, therefore, to communicate my most pitiful tale relating to “Rookdom,” believing it to be worthy of record: whether it should prove of only local significance, or may be extended over a much larger area, it may prove a sign-post by the way.—J. A. HARVIE-BROWN, Dunipace, Larbert.

**The Snowy Owl.**—During the strong northerly winds prevailing at the end of last March, a Snowy Owl (*Nyctea nyctea*) was caught on the moorland in the north of the Lewis. The wholly white plumage of the specimen was only relieved by a few dark-brown specklings on the wings, indicating that the bird was probably a male. There are several records of these Northern Owls being got in the district previously, but none for many years.—R. CLYNE, Butt of Lewis.

**Greenland Falcon at Barra, Outer Hebrides.**—On the 2nd of April 1912, an adult male specimen of the Greenland Falcon (*Falco candicans*) was obtained at Barra, and has been presented to the fine collection of Scotch birds in the Royal Scottish Museum.—WM. L. MACGILLIVRAY, Eoligary, Barra.

**Some Habits of the Gannet.**—With reference to the remarks in the *Scottish Naturalist* of April last regarding the very rare occasions on which Gannets (*Sula bassana*) bring their prey to the surface, and are seen to swallow it, I have to state that at the Bell Rock, where occasionally the Gannets go under with a slanting dive in shallow water among the shoals of Saith, on one occasion I saw one bring up a large Saith quite close to the lighthouse, carrying it on the wing for about thirty yards before settling down to engulf it. No doubt the proximity to the building and shallow water, the size of the fish, the necessity of the case, and reluctance to let go a good thing, severally contributed to bring about this infrequent occurrence.—R. CLYNE, Butt of Lewis.

**Smew at Melrose.**—In reference to your note in the April number of the *Scottish Naturalist* concerning the occurrences of Smews (*Mergus albellus*) in the Firth of Forth last January, it may be of interest to record the fact that one frequented the Tweed at Melrose on 10th and 11th February 1912, after severe frost. I watched it diving and swimming about for a long time; the water-bailies also noticed it, and called it a Black-and-white Sea-duck. I had no means of determining the sex. Shoveler Ducks and Goldeneyes were seen at the same time.—GILBERT D. DAVIDSON, Melrose.

**Early Breeding of Ringed Plover in Ayrshire.**—It may be of interest to record that I found the nest of a Ringed Plover (*Ægialitis hiaticola*), containing two eggs, on 9th March, at Lendalfoot. This is the earliest date on record here.—G. GRAHAM, Girvan.

**Black Tern in Wigtownshire.**—On Sunday afternoon, the 2nd June, while walking with the Rev. T. Ackman Paton, I noticed a single Black Tern (*Hydrochelidon nigra*) hawking flies in company with one or two Common Terns, on Soulseat Loch (Inch). We watched the bird from 4 P.M. till 7.30, with a short interval, and during that time it was only seen to alight once for a few seconds; the next day it had disappeared. This is the fourth occurrence I know of in the county.—J. G. GORDON, Corsemalzie.

**Fishes taken off the Wigtownshire Coast.**—Mr Adam Birrell kindly sent me a Black Sea-Bream (*Cantharus lineatus*), 15 ins. long, and weighing 2 lbs., taken on the 15th May, also a Goldsinny (*Labrus rupestris*), 4 ins. long, taken on the 25th May, both in Wigtown Bay. At Port Logan, on the 31st May, I examined the fishermen's catch, finding several Ballan Wrasse (*Labrus bergylta*), the largest nearly 3 lbs.; a single Cuckoo Ray (*Raia falsavela*), 13½ ins. across, and showing the two beauty spots on the back very clearly; several smallish Spotted Rays (*Raia maculata*); a Rough Hound (*Scylliorhinus canicula*), measuring 2 ft. 10 ins.; and eleven Piked Dogfish (*Squalus acanthias*), the largest 2 ft. 7 ins.

At Innerwell fishery, an Allis Shad (*Clupea alosa*) of 2 lbs., and a Garp Pike (*Rhamphistoma belone*), 26½ ins. long, were taken on the 3rd June, and kindly sent me.—J. G. GORDON, Corsemalzie.

**Death's-Head Moth in the Outer Hebrides.**—A letter recently received from Mr John Anderson, M.A., B.Sc., mentions the presence of a Death's-Head Moth (*Manduca atropos*, L.) in the school museum of the Nicholson Institute, Stornoway. The individual was "found on a rhone in Lewis Street, Stornoway, and

was brought alive to the school. When irritated it uttered a weird kind of sound, something between the squeak of a mouse and the plaintive cry of a wounded rabbit." This appears to be the first specimen recorded from the Outer Hebrides, for no mention of that area is made in Tutt's account of the distribution of the species in Britain (1904), nor have I been able to trace a record since that date.—JAMES RITCHIE, Edinburgh.

**Tetracanthella wahlgreni, Axels., in Scotland.**—In a paper on Collembola from the Forth Area, published in *Proc. Roy. Phys. Soc. Edin.* for 1908 (vol. xvii., No. 5, p. 198), I mentioned that in September 1906 I had found several examples of a *Tetracanthella*—a genus new to the British fauna—in sphagnum on Ben Ledi and Stuc-a-Chroin, Perthshire, but was uncertain as to the species. Having since obtained further specimens among moss brought to me from St Kilda in September last by Mr Eagle Clarke, I have been led to look into the matter again, and have come to the conclusion that these Scottish *Tetracanthella* are referable to the species which Axelson in his "Apterygotenfauna Finlands" has named *T. wahlgreni*; they have not the clavate hairs of *T. pilosa*, Schött, and have a much shorter spring. Mr R. S. Bagnall tells me he has recently taken *T. wahlgreni* in the north of England.—WILLIAM EVANS.

**The Thorny Lobster in Lewis.**—Mr John Anderson, M.A., B.Sc., Stornoway, sends an additional record of *Palinurus vulgaris*, L., from the Outer Hebrides. The specimen, now in the museum of the Nicholson Institute, was found by a fisherman, crawling on a rock near Stornoway. This is the first example recorded from Lewis.—JAMES RITCHIE, Edinburgh.

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## BOOK NOTICES.

THE BRITISH WARBLERS: A HISTORY, WITH PROBLEMS OF THEIR LIVES, by H. Elliot Howard, Part VI., with Coloured and Photogravure Plates. R. H. Porter. 21s. net per Part.

With this part Mr Howard's excellent history of our Warblers enters upon its second volume. The species treated of are the Willow Warbler, Savi's Warbler, and the Rufous Warbler. To the illustration of these species three coloured and five photogravure plates are devoted. We have already expressed our very high opinion on the all-round excellence of this work—the beauty of the plates and the originality of the letterpress. The latter is exception-

ally valuable, for no one has hitherto possessed such a masterly knowledge of the habits of these delightful little birds during their residence in our midst during the most engrossing period of their lives. Mr Howard not only relates what he has observed, but he discusses the problems presented in a sound, philosophic manner, and his conclusions are worthy of the respect due to a recognised authority.

SPIDERS, by C. Warburton (Cambridge Manuals of Science and Literature). Cambridge University Press, 1912. Price 1s.

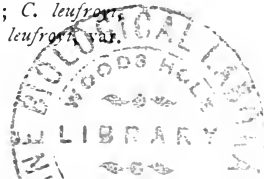
This is a capital little book, and one of the best volumes of this useful series yet published. Written in a simple and entertaining style, it provides just the kind of information desired by the amateur naturalist, and will doubtless induce many of its readers to take up the study of these fascinating creatures more seriously. An interesting account of the construction of the various forms of snare is given in the early chapters, followed by a useful sketch of the principal families, their characteristics, and their habits. The book is beautifully printed, and its thirteen text figures are clear and instructive. A photograph of the huge "Banana Spider" forms an appropriate frontispiece.

## GLEANINGS.

The following notes from *British Birds* may interest our ornithological readers:—

The third British example of the Isabelline Wheatear (*Saxicola isabellina*) is recorded by Mr Ford-Lindsay (vol. v., p. 328). It was secured in Rye Harbour on 28th March 1912. In the same volume are a few more records of Little Auks occurring in various parts of England during January and February. In an interesting paper in the June number, Dr Lowe announces the discovery of two distinct races of the Lesser Black-backed Gull in Europe: "(1) A Scandinavian or more eastern form, the dark-backed *Larus fuscus fuscus*; and (2) a more western or light-backed race, represented by *L. fuscus britannicus*." These races are fully described, and an illustration and measurements showing wherein they differ are also given. A Tengmalm's Owl, captured in Northumberland on 11th December 1911, and its behaviour in captivity, is the subject of a paper in the same magazine. This bird is the sixth of the species recorded for Northumberland. There are also one or two interesting records of "Ringed Birds" given. A Starling marked in Berkshire in January 1912 was found dead in Finland in April 1912, while others were recovered close to where they were ringed (vol. vi., pp. 2, 8, and 13).

J. T. Marshall (*Journal of Conchology*, April 1912, pp. 294-306) continues his useful paper entitled "Additions to 'British Conchology.'" The following species are recorded from Scottish waters: *Columbella haliæti*, Jeff. (Shetland); *Clathurella anceps*, Eichw. (Aberdeenshire, Loch Fyne, and off Barra); *C. anceps*, n. var. *soluta*, Marsh. (Aberdeenshire, Loch Fyne, West Orkneys); *C. leufragæ*, Mich. (Lamlash, Dornoch and Pentland Firths, and off Barra); *C. leufragæ* var.



*carosula*, Jeff. (W. Orkneys); *C. linearis*, Mont., var. *alba*, Marsh. (Aberdeenshire, Loch Boisdale); *C. reticulata*, Brocc. (several localities off the West Coast, Pentland Firth); *C. reticulata*, var. *asperrima*, F. and H. (Lamlash and Loch Boisdale); *C. purpurea*, Mont. (Aberdeenshire); *C. purpurea*, var. *minor*, Monts. (Sutherlandshire, North Rona); *C. formosa*, Jeff. (Shetlands, Butt of Lewis); *Pleurotoma nana*, Lov. (Aberdeenshire, Orkneys, Shetlands); *P. brachystoma*, Phil. (Sound of Sleat); *P. brachystoma*, n. var. *alba*, Marsh. (Mull of Cantire); *P. nebula*, Mont. (Loch Inver, Sound of Sleat, Aberdeenshire); *P. nebula*, var. *elongata*, Jeff. (several localities); *P. nebula*, var. *fusiformis*, Marsh. (Minch, Shetlands); *P. nivalis*, Lov. (Shetlands and N. of Hebrides); *P. carinata*, Biv. (off Butt of Lewis, etc.); *P. rufa*, Mont., var. *lactea*, Jeff. (Aberdeen, Iona, Firth of Lorne); and *P. rufa*, var. *ulideana*, Thomps. (Iona).

In the "Recorder's Report" published in the Proceedings of the Conchological Society (*Journal of Conchology*, April 1912, p. 317), many new county records are given, the only Scottish one being *Clausilia bidentata*, taken in Orkney in 1907.

A note is published by K. H. Jones in the April number of the *Journal of Conchology* (p. 293) on the occurrence of *Pisidium liljeborgi*, Clessin, in the island of Arran. Numerous specimens, some of which were of an unusually large size, were taken in September 1911.

In a further short instalment of the late G. H. Verrall's paper on "Another Hundred New British Species of Diptera," published in the June number of the *Ent. Mo. Mag.* (p. 144), *Thrypticus pollinosus* is described as a new species, and recorded from Aviemore and Nairn, *T. tellus* is noted as occurring as far north as Nethy Bridge, and *Medeterus infumatus*, Lw., is mentioned as having been taken by Col. Yerbury in the same locality.

A. E. J. Carter, in the *Ent. Mo. Mag.* for June (p. 139), records the occurrence of the Tipulid fly *Triogma trisulcata*, Schum., in Perthshire. Five specimens were taken on the 8th May, on marshy ground near Blairgowrie. The species was only added to the British list in April, on the evidence of an English specimen. Its occurrence in Scotland is therefore of interest.

In the conclusion of his paper on "British Odonata in 1911" (*Entomologist*, June 1912, pp. 171-173) W. J. Lucas records several interesting captures made by Col. Yerbury in the north of Scotland. In all some ten species were obtained, the most important being a new race, or perhaps species, of *Sympetrum*, which is described under the name of *nigrescens*. A pair were taken at Lochinver in June and July 1911, and it is stated that they exactly resemble two females taken at Stornoway by H. S. Tremelin in 1899.

Dr Sig Thor (Norway) describes at some length, in the *Zoologischer Anzeiger* (Bd. xxxix., pp. 529-533, and figs. 95-98), the larva of a Scottish Hydracarid, *Lebertia porosa*, Sig Thor. The larva of an Irish species, *L. insignis*, Neuman, is also described in detail.

In a letter to *Nature* of 6th June, Dr Thomas J. Jehu, of The University, St Andrews, announces the discovery of fossils (after many months' search) in the Chert and Black Shale Series at Aberfoyle. The specimens have been submitted to Dr Peach, who has recognised among them the casts of Brachiopods apparently belonging to the genera *Lingulella* and *Obolus*, also the jaw of an annelid. "The evidence, so far as it goes, which is afforded by these fossils, as to the age of the Boundary Fault Series, tends to confirm the view that it is Upper Cambrian, or at any rate Lower Palæozoic."





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*(Authors are responsible for nomenclature used.)*

## ABERDEEN UNIVERSITY BIRD-MIGRATION INQUIRY: FIRST INTERIM REPORT (1909-12).

By A. LANDBOROUGH THOMSON, M.A., M.B.O.U.

*(Continued from page 153.)*

### BLACK-HEADED GULL *(continued)*.

CASE 98, ring A.U. 13050:—

9th June 1910: marked as a nestling a few days old at Flanders Moss, Stirlingshire. (Messrs J. C. Adam, R. M. Adam, and S. E. Brock.)

22nd Oct. 1910: shot near Renfrew. (Mr J. L. Main: ring returned.)

CASE 103, ring A.U. 12471:—

4th June 1910: marked as a nestling on Skipwith Common, 10 miles S.W. of York, England. (Mr H. R. Davidson.)

10th Nov. 1910 (about): found dead at Bothal, near Morpeth, Northumberland. (Through Mr E. L. Gill, M.Sc.)

CASE 116, ring A.U. 13179:—

12th July 1910: marked as a half-fledged nestling on the Sands of Forvie, Aberdeenshire, Scotland. (Mr L. N. G. Ramsay.)

16th Jan. 1911: killed on the Gironde, France, near Bayon, about 18 miles from Bordeaux and 32 miles from the sea. (Mayor of Bayon and Mr C. Ludovic.)

CASE 155, ring A.U. 12487:—

4th June 1910: marked as a nestling on Skipwith Common, 10 miles S.W. of York, England. (Mr H. R. Davidson.)

27th Aug. 1910: shot on Marfleet Creek, in the borough of Hull, Yorkshire. (Dr M. Winzar Compton: ring returned.)

CASE 229, ring A.U. 12324:—

3rd Oct. 1910: caught at night on the shore 8 miles north of Aberdeen. (Messrs L. N. G. Ramsay and A. G. Davidson.)

20th July 1911: found dead on the shore at the mouth of the Don, near Aberdeen. (Miss Robertson: ring returned.)

CASE 252, ring A.U. 635:—

26th June 1910: marked as a nestling a few days old on the Sands of Forvie, Aberdeenshire. (Mr L. N. G. Ramsay.)

2nd Sept. 1911: shot between Stonehaven and Muchalls, Kincardineshire. (Mr A. Malcolm: ring returned.)

CASE 256, ring A.U. 19073:—

1st June 1911: marked as a nestling a few days old on Skipwith Common, 10 miles S.W. of York, England. (Mr V. G. F. Zimmermann.)

1st Sept. 1911: shot near Greatham Creek, north side of river Tees, Co. Durham. (Mr J. Postgate.)

CASE 335, female, ring A.U. 639:—

26th June 1910: marked as a half-fledged young bird on the Sands of Forvie, Aberdeenshire. (Mr L. N. G. Ramsay.)

18th June 1912: shot on Scotston Moor, near Aberdeen. (Mr J. Mutch: ring returned. Sex ascertained on dissection by Miss L. Florence, M.A., B.Sc.)

[*Le Saint Hubert Illustré* for February 1912 reports that a gull was killed at Grandchamp les Bains, Calvados, Normandy, bearing ring "A.U. 17545": information through the editor of *The Field*. Unfortunately the number reported is incorrect (the ring in question being in fact still in our hands unused), and we have not as yet succeeded in getting a more accurate report.]

#### COMMON TERN (*Sterna hirundo*, L.).

CASE 2, ring A.U. 4689:—

7th July 1909: marked as a young bird in down on Dumbarnie Links, Fifeshire. (Miss E. V. Baxter and Miss L. J. Rintoul.)

18th July 1909: found with fatal injuries on the shore of Largo Bay, Fifeshire. (Fifeshire Police and Aberdeen City Police: ring recovered later.)

CASE 57, ring A.U. 8581:—

11th July 1910: marked as a young bird on Skate Island, Loch Fyne, Argyllshire. (Mr A. Campbell.)

18th July 1910: found dead on the Yellow Isle, Loch Fyne. (Mr J. D. Mackay: ring returned.)

CASE 82, ring A.U. 957 E:—

15th July 1910: marked as a young bird at Dunvurich, Tayvalich, Loch Sweyn, Argyllshire. (Mr A. Campbell.)

7th Aug. 1910: found dead on an island in Loch Sweyn. (Mr W. G. Cruickshank.)

CASE 84, ring A.U. 614 A:—

16th July 1910: marked as a young bird on Balmedie Links, Aberdeenshire. (Miss D. Hamilton.)

21st Aug. 1910: found dead ("dead some time") on the shore a few miles south of place of marking. (Mr L. N. G. Ramsay: ring returned.)

LAPWING (*Vanellus vanellus*, L.).

CASE 1, ring A.U. 32:—

8th May 1909: marked as a chick about a week old on the sands of Forvie, Aberdeenshire. (Messrs L. N. G. Ramsay, A. G. Davidson, and A. L. Thomson.)

13th June 1909: caught within a few yards of place of marking, and released immediately: although six weeks old and well able to fly, as it showed when released, it allowed itself to be caught while crouching. (Mr G. Duffus.)

CASE 60, ring A.U. 13487:—

22nd May 1910: marked as a chick a few days old near Stonehaven, Kincardineshire. (Lt.-Col. A. V. Anderson.)

15th July 1910: remains found in a wood near Dunnottar House, Stonehaven. (Captain W. H. Ritchie.)

CASE 71, ring A.U. 13273:—

Summer 1910: marked as a young bird near Aboyne, Aberdeenshire. (Mr J. Mutch: failed to note exact date.)

6th Aug. 1910: shot at Balfour, Aboyne. (Mr J. P. Stainton: ring returned.)

CASE 105, ring A.U. 12730:—

- 21st *June* 1910: marked as a young bird near Kintore, Aberdeenshire, Scotland. (Mr W. W. Nicol.)  
 19th *Nov.* 1910 (about): shot at Roskeen, Thurles, Co. Tipperary, Ireland. (Mr J. Ryan.)

CASE 106, ring A.U. 8545:—

- 14th *May* 1910: marked as a chick a few days old on the Sands of Forvie, Aberdeenshire, Scotland. (Mr L. N. G. Ramsay.)  
 22nd *Nov.* 1910 (about): shot at Frenchpark, Co. Roscommon, Ireland. (Mr S. Harris.)

CASE 113, ring A.U. 12731:—

- 23rd *June* 1910: marked as a young bird near Kintore, Aberdeenshire, Scotland. (Mr W. W. Nicol.)  
 29th *Dec.* 1910: killed at Elvas, Alemtejo, Portugal. (Mr J. F. da Silva Miranda.)

CASE 145, ring A.U. 14370:—

- 28th *May* 1910: marked as a young bird at Dunnottar, Kincardineshire, Scotland. (Capt. W. H. Ritchie.)  
 5th *Feb.* 1911 (about): shot near Sunnyside, Mitchelstown, Co. Cork, Ireland. (Mr J. A. Fraser.)

CASE 154, ring A.U. 14699:—

- 26th *May* 1910: marked as a chick a few days old near Stonehaven, Kincardineshire, Scotland. (Lt.-Col. A. V. Anderson.)  
 13th *Feb.* 1911: shot at the Clonshire Mills, Croagh, Co. Limerick, Ireland. (Mr G. Sherwood: ring returned.)

CASE 156, ring A.U. 14077:—

- 4th *May* 1910: marked as a chick a few days old near Stonehaven, Kincardineshire, Scotland. (Lt.-Col. A. V. Anderson.)  
*Oct.* (?) 1910: shot in the parish of Barqueros, near Barcellos, Minho, about twenty miles north of Oporto, Portugal. (Mr W. C. Tait, Oporto: as Mr Tait did not hear of the occurrence until several months later, his informant's date—October, which seems early—may be regarded as rather doubtful. British bird-markers are much indebted to Mr Tait for making the object of their work widely known in Portugal.)

CASE 271, ring A.U. 20074:—

10th June 1911: marked as a young bird almost able to fly, in a field near the Echt road, 10 miles west of Aberdeen, Scotland. (Dr A. R. Galloway.)

17th Oct. 1911: caught at Straboe, Queen's County, Ireland. (Mr P. Brien.)

CASE 274, ring A.U. 13398:—

28th May 1910: marked as an almost full-grown chick near Myres Castle, Auchtermuchty, Fifeshire, Scotland. (Mr R. Fairlie.)

30th Dec. 1911: caught at Coosan, Athlone, Co. West Neath, Ireland: released a few days later. (Mr T. Mulvehill.)

CASE 283, ring A.U. 12214:—

4th June 1910: marked as a chick at Westhall, Oyne, Aberdeenshire, Scotland. (Mr W. S. Meston.)

1st Jan. 1912 (about): caught at Grangemore, Co. Roscommon, Ireland. (Mr J. Kennedy, in the *Daily Mirror*, 3rd Jan. 1912.)

CASE 336, ring A.U. 16828:—

31st May 1911: marked as a young bird near Inverurie, Aberdeenshire. (Mr W. W. Nicol.)

7th Nov. 1911: killed at Old Cottage of Seaton, Glenlivet, Banffshire, Scotland. (Mr C. Stuart, through Mr W. S. Meston.)

GOLDEN PLOVER (*Charadrius apricarius*, L.).

CASE 263, ring A.U. 17071:—

21st May 1911: marked as a chick at Dunachton, Invernessshire, Scotland. (Mr W. Berry.)

13th Oct. 1911 (about): shot at Blacksod, Co. Mayo, Ireland. (Mr P. M. Henaghan.)

WOODCOCK (*Scolopax rusticola*, L.).

CASE 85, ring A.U. 12577:—

11th June 1910: marked as a young bird about four weeks old at Yester, Haddingtonshire. (Mr P. M. Campbell.)

22nd Aug. 1910: shot at Hopes, Yester, Haddingtonshire. (Mr R. L. Hunter.)

CASE 108, ring A.U. 12393 :—

*June* 1910: marked as a young bird on the island of Inish-mealy, Lower Lough Erne, Co. Fermanagh, Ireland. (Mr H. B. Rathborne.)

*21st Nov.* 1910: shot on the shore of Lower Lough Erne. (Reported in *The Field* for 26th Nov. 1910 (number misprinted 12392) by Captain W. F. Cowan, who shot the bird, and who also communicated with us through Dr R. Stephens. Independently reported by Major H. Trevelyan, through Mr H. F. Witherby.)

CASE 284, ring A.U. 13629 :—

*4th June* 1910: marked as a chick in Glashie Wood, Monymusk, Aberdeenshire. (Mr Robertson.)

*26th Dec.* 1911 (about): "got" at Keithhall, Inverurie, Aberdeenshire. (Mr W. S. Meston: on this occasion the unringed foot was missing, the wound being completely healed.)

CASE 292, ring A.U. 13475 :—

*13th June* 1911: marked as a young bird at Wetherley, Stonehaven, Kincardineshire, Scotland. (Capt. W. H. Ritchie.)

*4th Jan.* 1912: killed about six miles from Gijon, Asturias, Spain. (Mr Macario Menéndez, whose communication was addressed to the "Senor Alcalde d'Alberdeen," and reached us through the municipal authorities.)

CASE 300, ring A.U. 8751 :—

*9th June* 1911: marked as a young bird already able to fly a little, at Achnacloich, Argyllshire. (Mr A. Stewart.)

*28th Sept.* 1911: shot at Ardchattan, Taynuilt, Argyllshire. (Mr R. C. C. Preston.)

(*To be continued.*)

THE BRITISH SPECIES OF THE DIPTEROUS  
GENUS *FANNIA*, ROB. DSV.

By J. R. MALLOCH.

(Continued from page 162.)

8. *canicularis*, L., ♂. The common small house-fly which occurs throughout the year. Very variable in colour, sometimes the thorax is nearly unicolorous grey, while often there are only signs of the centre stripe of the three that are generally present; the abdomen has generally the sides of the second and third segments translucent yellow, this even when it is not noticeable from a direct examination from above is always evident when held up to the light; legs with the knees, especially the fore pair, distinctly yellow, fore pair with the usual bristles; mid femora with a row of widely placed, not very strong bristles on the basal half, about five in number, and a row of about twelve very short closely-placed bristles on the apical half of the antero-ventral surface; postero-ventral surface with a row of about ten long bristles on the basal two-thirds and about six small bristles on the apical third; mid tibia with the usual bristles, hardly or not at all dilated on apical half; ventral surface with remarkably close, short, pubescence; hind femora with a row of rather short bristles, increasing in length at the tip, on the antero-ventral surface; postero-ventral row reaching only to about the middle; hind tibia with the usual dorsal bristles, a row of rather uneven small bristles, besides the usual strong one, on the antero-dorsal surface and two antero-ventral bristles; calyptra whitish, unequal; halteres yellow; wings greyish, fourth and fifth veins convergent; outer cross-vein bent, last portion of fourth vein twice the penultimate.

♀. Differs from the ♂ in the absence of the yellow colour on the abdomen in all the specimens I have seen; the thorax is generally three-striped; the legs are distinctly yellow on the knees, and, with the exception of the femoral bristling and the pubescence on the mid tibia, are similar to those of the ♂.

5 to 7 mm.

Abundant everywhere.

9. *difficilis*, Stein, ♂. Very similar to *canicularis*, but much darker in colour, the thorax being quite black, the abdomen

black-brown, and the yellow colour much more prominent; the frons projects much less than in *canicularis*; the legs are almost entirely black, the yellow at the base of the fore tibia being very indistinct; the mid femora bear on the antero-ventral surface about nine long bristles, instead of five as in *canicularis*, and the same short apical row; the posterior bristling is also more numerous; the mid tibia similar in shape and bristling to *canicularis*, but the pubescence much longer, being about as long as the thickness of the tibia; there is a tendency to more numerous bristling on the hind femora; the hind tibiæ do not possess the uneven bristles on the antero-dorsal surface, and there is only one strong bristle present on the antero-ventral surface; wings darkened; calyptra pale.

♀. I have not seen this sex, but Stein says that it is darker than *canicularis*, the yellow on the abdomen is much more pronounced, and the antero-ventral surface of the hind tibia has only a single bristle. 5 to 6 mm.

I have taken two ♂♂ at Bonhill, the date on the one I still have being 14th September 1907; Mr Collin has the other one. I saw a third ♂ here in June.

10. *carteri*, nom. nov. (= *femorata*, Mall.), ♂. Dull black; eyes large, frons, epistome, and jowls but little projecting; third joint of antennæ about two and a quarter times the second, arista pubescent; palpi normal, thorax dull black, dusted only on the dorsum behind; abdomen dull black, segments dusted at bases, with dilated dorsal line and black lateral reflections; anal organ not prominent, but with two small black, pointed, backward-directed appendages; legs black, fore-knees hardly paler; mid femora not greatly thickened, antero-ventral row of long bristles beginning near the base, decreasing in length, but becoming closer till about two-fifths from the tip they form a comb-like row on the constricted portion of the femur; a somewhat similar row of longer but weaker bristles on the postero-ventral surface; ventral bristle long and strong; mid tibia with the apical two-fifths distinctly but not greatly thickened, much as in *verrallii*, Stn., pubescence on ventral surface very indistinct on the unthickened portion, but long and erect on apical two-fifths; two antero-dorsal and two postero-dorsal bristles, the upper ones very weak; hind femora bent and dilated, thickest beyond the middle, antero-ventral surface with a row of hair-like bristles which increase in length from the base to the thickest part of the femora and then decrease to



the tip; a row of about six long hair-like bristles on the basal two-fifths, and a group of about nine very long curled hair-like bristles on the thickened portion beyond the middle of the postero-ventral surface, a few very short hairs on the tip fifth; hind tibia with the usual dorsal bristles, two antero-ventral bristles, and no bristle on the antero-dorsal surface; calyptra blackish, the under scale projecting; halteres yellow; wings darkened along the fore half, third and fourth veins nearly parallel, outer cross-vein nearly straight, last portion of fourth vein about three times the penultimate. ♀ unknown. 4 mm.

One ♂ at Aberfoyle, 30th June 1904 (A. E. J. Carter).

11. *armata*, Mg., ♂. Black; eyes large, frons slightly projecting, seen from in front with centre stripe grey dusted; thorax black, brown-grey dusted; abdomen dull black, rather broad and short; legs black, fore-knees with a small yellowish mark; fore tibia with a few long hairs at the tip on the postero-ventral surface; mid femora swollen for over two-thirds from the base, thickest at the end of the swelling; antero-ventral surface with a row of about nine rather long bristles which decrease in length towards the swollen part, which bears a row of about the same number of very short and strong bristles, the apical unthickened portion of femora bare; postero-ventral surface with longer, more numerous and weaker bristles, three or four on the constricted portion; mid tibia distinctly thickened from before the middle on the ventral surface, the pubescence, which is very long and erect confined to the thickened portion; antero-dorsal bristles three in number, postero-dorsal two weaker; mid metatarsi with a blunt thorn-like fasciculus of four very short thick-set bristles, at the base of the ventral surface; hind femora long and rather bent; antero-dorsal surface with a row of about ten bristles on the apical half, the last six being very much stronger than the first four; hind tibia with a row of very long hairs, from near the base to the tip, on the antero-ventral surface, a row on the postero-ventral surface of somewhat similar hairs, beginning later, of which the apical two or three are longer; dorsal bristles very long, the others indistinguishable; wings darkened, third and fourth veins hardly convergent, outer cross-vein nearly straight; calyptra whitish, unequal; halteres yellow.

♀. Grey-black; frons about one-third the breadth of head, parallel-sided, orbits grey dusted, at their broadest part as broad as the black middle stripe; lower fronto-orbital bristle nearer

the middle stripe than to the eye margin ; thorax and abdomen thickly grey dusted, somewhat shining ; legs black, fore knees yellowish ; ventral bristle on mid femora large ; mid tibia with three antero-dorsal and two postero-dorsal bristles ; hind tibia with besides the usual bristles three or four additional antero-ventral bristles. 4 to 5 mm.

Very common at Bonhill. I have also seen this from Polton (Carter) ; Oxford (Hamm) ; May to August.

12. *ærea*, Ztt., ♂. Dull black ; eyes very large, frons not projecting, jowls descending very narrowly below the eyes ; antennæ moderately long, arista bare ; thorax dull black, slightly shining when viewed from behind ; abdomen dull black, with traces of dusting on the fore margins of the segments, especially the fourth ; anal organ rather large ; legs black, fore and mid knees only inconspicuously brownish yellow ; mid femora constricted at the tip ; antero-ventral surface with a row of about fifteen bristles, the first six being long, strong, and widely placed, the remainder being shorter and closely situated, the row ends at the narrowed part of the femora and that part is bare except for three very short bristles at the tip ; postero-ventral row begins at the base with the ventral long bristle, is somewhat more regular in length and more numerous, but more hair-like ; mid tibia thin at the base, very slightly swollen before the middle, then thinner, and the tip half distinctly thickened, the pubescence on the ventral surface distinct and erect only on the tip half ; bristling normal ; mid metatarsi with a thorn at the base as in *armata*, but rather weaker ; hind femora with a row of hairs, more bristle-like at the end, on the basal three-fourths of the postero-ventral surface ; antero-ventral surface bare ; hind tibia with only the usual bristles ; wings darkened, outer cross-vein almost straight, last portion of fourth vein about three times the penultimate ; calyptra black, equal in size ; halteres black.

♀. Dull black, thickly brown-grey dusted ; frons rather more than one-third the breadth of the head, middle stripe broad, viewed from in front pale grey dusted and rather conspicuous ; antennæ broader than in the ♂ ; thorax slightly shining ; abdomen nearly entirely dull ; legs black-grey, fore knees indistinctly yellow ; ventral bristle on mid femora long ; hind tibia with the usual bristles ; wings clear ; calyptra and halteres yellow. 3 to 4 mm.

A very common species at Bonhill. The pale grey frontal

stripe of the ♀ distinguishes it at once from any other species. I have also seen this from New Forest (Adams); Polton, Aberfoyle, and Comrie (A. E. J. Carter); Oxford (Hamm). I have a single ♂ standing under the MS. name *crassipes* which I am doubtful about, but I consider it advisable to give a short description of it, so that should it prove to be other than an abnormal specimen of *aërea* it may be recognised. It agrees in every particular with the foregoing, but the mid metatarsus is barely equal in length to the next two joints, whereas in *aërea* it is equal to the next three. The hind tarsus in *aërea* is longer than the tibia; in *crassipes* it is shorter and very considerably thickened, in contrast with the normal tarsus of the former. It is possible that this is a malformation, but I consider it at least advisable to mention its occurrence. One ♂, Bonhill, 25th May 1908.

13. *umbrosa*, Stn., ♂. Black; eyes very large, and close together; thorax deep black, with little dusting; abdomen black, brown-grey dusted; legs black, the thorn at the base of the mid metatarsus inconspicuous; the bristling of the hind femora separates this species from all its allies, there being about ten equally long, prominent bristles from the middle to the tip on the postero-ventral surface; the usual bristles present on the tibiæ; wings yellowish, third and fourth veins convergent; calyptra unequal in size, brownish; halteres brownish. ♀ undescribed. 4 to 4½ mm.

The foregoing abridged description is taken from Stein's monograph.

14. *vesparia*, Mde. This species was described by Meade in the *Entomologist's Monthly Magazine* in 1891, and though its author afterwards wrote a paper on the *Anthomyiidae* (1897) he made no reference to the species. Verrall gives it in italics in his 1901 list of British species, but Stein makes no mention of it in his monograph on the family, 1895. It is given in the *Catalogue of Palearctic Diptera*, 1907. Possibly an examination of the type, if it is in existence, will settle whether or not it ought to rank as a species. The chief character which distinguishes it from *coracina*, if not the only one, is that given in the table of species in this paper. The flies were bred from pupæ found in a wasp's nest. I am inclined to consider it merely as a synonym of *coracina*.
15. *coracina*, Lw., ♂. Deep black, slightly shining; frons, epistome, and jowls projecting a little more than in most

species; eyes narrowly, but distinctly, separated; thorax not very distinctly brown-grey dusted; abdomen distinctly blue-grey dusted, dorsal stripe distinct, anal organ small; legs black, the fore knees but little paler; mid femora with the basal two-thirds swollen, the tip third not greatly constricted; antero-ventral surface with a row of about twelve bristles on the basal two-thirds, the last five or six being the strongest, this row finishes at the thickest part of the femora and is followed by a bare space, the constricted portion of the femora having its apical half with a row of short closely-placed bristles; postero-ventral surface with a somewhat similar row of longer, hair-like, and more numerous bristles; mid tibia almost identical with that of *scalaris*; its bristling normal; hind femora with a rather widely placed row of short bristles, the last four or five much the longest, on the antero-ventral surface, and a row of hair-like bristles of almost equal length on the postero-ventral surface; hind tibiae with a somewhat regular row of short bristles, the longest being the one usually present, on the antero-dorsal surface, a row of long hairs, becoming more bristle-like towards the tip, on the apical two-thirds of the antero-ventral surface, and a somewhat similar row of softer and shorter hairs on the postero-ventral surface; wings brownish, third and fourth veins convergent; outer cross-vein bent, last portion of fourth vein about two and a quarter times the penultimate; calyptra unequal, yellowish; halteres yellowish.

- ♀. Black-grey; frons about one-third the breadth of the head, parallel-sided; middle stripe sometimes brownish, at its narrowest part broader than the orbits at that part; orbits grey dusted, somewhat shining behind; thorax grey dusted, somewhat shining; abdomen coloured as the thorax; legs entirely black; mid tibia with a ventral bristle; hind tibia with a regular row of equally long, little bristles on the antero-dorsal surface, the bristle usually present being the longest at about one-third from the tip; antero-ventral surface with two bristles. 4 to 6½ mm.

A very common species at Bonhill. It occurs along with *mutica*, from which Stein does not separate the ♀.

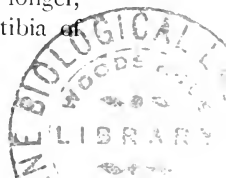
16. *kowarzii*, Verr., ♂. Grey; frons, epistome, and jowls somewhat projecting, orbits silvered; eyes narrowly separated; antennae of moderate length; arista bare; thorax grey; abdomen grey, dorsal line indistinct, anal organ of moderate

size, with small projecting lamellæ; legs grey-black, knees yellow; mid tibia gradually thickened towards the apex, the pubescence very short at the base but longer towards the tip, two dorsal and two postero-dorsal bristles; hind femora with one long bristle near the tip on the antero-ventral surface, and a fasciculus of fine, long, hair-like bristles near the tip on the postero-ventral surface; hind tibia with two antero-ventral and four or five equally long postero-ventral bristles, as well as the usual dorsal and antero-dorsal bristles; wings yellowish, third and fourth veins hardly convergent; outer cross-vein nearly straight, last portion of fourth vein about one and a half times the penultimate; calyptra yellowish, unequal; halteres yellow.

♀. Stein describes the ♀ of this species; besides the characters in the frons, he gives the following: the antennæ are strong and long, the arista hair-like, slightly pubescent, the second joint prolonged and moderately thickened; colour of thorax and abdomen as in the ♂, but somewhat shining; colour of the legs as in the ♂; mid tibia with two antero-dorsal bristles; hind femora with three or four long bristles at the tip of the antero-ventral surface; hind tibia with two dorsal, two antero-dorsal, and one antero-ventral bristle.  $4\frac{1}{2}$  mm.

I have taken about thirty ♀♀ that would answer to this description, but am of the opinion that they are *sociella*, Ztt. My reason for this is that I have only a very few females of the ordinary form of *sociella*, and have not met with a ♂ of *kowarzi*. I took every specimen of the genus that I met with during 1909, and cannot understand how I could have overlooked the ♂ if it had occurred. The ♀♀ occurred with *sociella* ♂♂.

17. *verrallii*, Stn., ♂. Black; eyes large, occupying almost the entire side of the head, very close together; antennæ of moderate length, third joint three times as long as the second; arista slightly pubescent; thorax black, shining, with grey-brown dusting; abdomen much as in *aërea*; anal organ rather large, with two small ventral appendages; legs black, fore knees pale yellowish; mid femora moderately thickened on the basal three-fourths, antero-ventral surface with a row of bristles on the basal two-thirds which decrease in length but increase in thickness as they advance, a short comb-like series of six bristles on the base of the apical third, and three or four weak hairs before the tip; postero-ventral row weaker, but longer, the basal ventral bristle long and conspicuous; mid tibia of



equal thickness for the basal two-thirds, the tip third distinctly thickened, the pubescence very weak except upon the thickened portion, where it is long and erect, bristling normal, but the antero-dorsal one situated higher on the tibia than the postero-dorsal one; hind femora with the antero-ventral surface with a row of short, widely placed bristles from base to tip, the last two or three longest; the basal half of the postero-ventral surface clothed with long, soft hairs; the other bristling normal; wings darkened, third and fourth veins convergent, last portion of fourth vein three times the penultimate, outer cross-vein distinctly bent; calyptra blackish, equal in size; halteres yellow.

♀. Stein describes the ♀ as having much the appearance of *ärea* and *parva*. From *ärea* it differs in the yellow colour of its fore knees, in the absence of the basal ventral bristle on the mid femora, and though the middle stripe on the frons is grey dusted it is not so much so in *ärea*. From *parva* it differs in the dusting of the middle stripe, in its black-grey body colour, and in the form of the frons in profile.  $3\frac{1}{2}$  to 4 mm.

One ♂, Bonhill, 13th June 1908; one ♂, Cardross, 24th July 1908. I have not recognised the ♀.

(*To be continued.*)

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## ODONATA OF THE NORTH OF SCOTLAND, 1911.

By W. J. LUCAS, B.A., F.E.S.

DURING his visit to the north of Scotland in the summer of 1911, Col. J. W. Yerbury collected for me a considerable number of Dragon-flies of nine or ten species. Many of them were obtained from poorly worked localities, and were therefore of more than ordinary interest.

First on the list, and probably also first in importance, was a pair of specimens of a *Sympetrum*—either a new species, or a very distinct race of *S. striolatum*, which I have described in the *Entomologist*, vol. xlv. (1912), p. 171, as *Sympetrum nigrescens*. In size it is intermediate between *S. striolatum* and *S. scoticum*, and as its coloration is dark, the impression is given of the latter species. The ptero-

stigma is, however, like that of *S. striolatum*, and the genitalia are not far different from those of that species. On the other hand, the black sides of the thorax, ornamented with conspicuous yellow spots, closely resemble those parts of *S. scoticum* and are very unlike the corresponding parts of *S. striolatum*. Further, the dark line in front of the vertex tends to continue downwards by the side of the eyes, as in *S. vulgatum*; the legs, too, are almost as dark as those of *S. scoticum*. The two specimens are from Lochinver, in Sutherlandshire—a male, taken 24th June, and a female, 7th July. I had already received the female of exactly the same form from Stornoway, taken by Mr H. S. Fremlin in 1899. Some doubt was at the time felt about its identity, and McLachlan, who was then living, came to the unsatisfactory conclusion that it might be a hybrid between *S. striolatum* and *S. scoticum*. Details were figured by me in the *Entomologist*, vol. xxxiii. (1900), p. 139. Perhaps entomologists who visit the extreme north of Scotland will look out for the insect during the present season.

Of *S. scoticum* I received a male, taken at Nethy Bridge on 7th August, and a female on 11th August, as well as a male from Spey Bridge, taken on the 8th. *Libellula quadrimaculata* was taken at Inchnadamph, Loch Assynt (a male on 2nd June and a female undated); at Loch Assynt (a male) on 8th June; and at Nethy Bridge (a male) on 7th August.

From Loch Assynt came a female, *Cordulegaster annulatus*, captured on 6th June, while a male, of date 6th August, came from Nethy Bridge. In addition, Col. Yerbury sent me a nymph of this species, apparently immature, picked up on the shore of Loch Assynt on 13th June; a nymph-skin from Lochinver, 28th or 29th June, found alongside a freshly emerged male imago; and another from Lochinver, found on 27th June upon the trunk of an alder on the bank of the Inver. Of *Æschna juncea* there were two males from Nethy Bridge on 6th and 7th August, and another male from the same place on 4th September. A much better capture, however, was a pair of *Æschna cærulea*—a male at Loch Assynt on 6th June, and a female from the same place on the 3rd. Loch Assynt is a new locality for this scarce species.

Turning to the Agrionid family, we have of *Lestes sponsa* a male, 9th July, from Lochinver, and three females from Aviemore on 10th August. The three specimens from Aviemore were sent to me in small tubes, apparently starting alive. They came to Kingston, and then were forwarded to me in the New Forest. Two were dead when I received them, but the third, notwithstanding the length of time on the journey, was quite alive. Several specimens of the common *Pyrrhosoma nymphula* were in the collection—two females, Inchnadamph, 1st June; two males, Loch Assynt, 10th and 12th June; one male, Lochinver, 23rd June; a male and a female *in coitu*, Lochinver, 9th July; and a female (incomplete), Nethy Bridge, 28th July. *Ischnura elegans* was represented by five Lochinver examples—a male, and a nice female of the var. *rufescens*, 20th June; a male, 1st July; a male (incomplete), 9th July; and a male, 16th July. All the specimens of the remaining species, *Enallagma cyathigerum*, also came from Lochinver. They were—a male, 20th June; three females, 21st June; a male and a female *in coitu*, 23rd June; and a female, 24th June. In addition there was from Lochinver a nymph-skin, found 11th July, from which presumably had emerged a very teneral female *E. cyathigerum*, which accompanied it.

Col. Yerbury deserves the thanks of those who are working at the Odonata, for adding so considerably to our knowledge of that interesting Order.

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## NOTES.

**Scarcity of Young Rooks.**—Regarding Dr Harvie-Brown's note on p. 163 of the *Scottish Naturalist*, I may say that I have never known young Rooks so late of appearing on the branches as they have been this year. Scarcely any were to be seen here on the branches during May, but towards the end of the first week and during the second week of June they were very plentiful. I do not think the eggs were blown out of the nests, as I was in the wood during the storm of 8th April and saw no egg-shells on the ground.—JAMES BARTHOLOMEW, Torrance, near Glasgow.



**Great Spotted Woodpecker Breeding on Loch Lomond-side.**—On 29th June, the nest of a stem-boring bird was reported to me from the side of Loch Lomond, and two days afterwards a young Great Spotted Woodpecker (*Dendrocopus major*) was handed to me from the same district. It was well feathered, but was found dead at the base of the tree-stump in which the nest was situated. As I had not previously known of this bird nesting on Loch Lomond, I visited the site on 3rd July, but found the young had flown, although they were still in the nest on 30th June. The nest was in a silver birch which had been cut, or the upper portion blown off, leaving a stump 14 ft. high. The nesting hole was quite circular, cleanly cut, and placed about 8 ins. from the top; the lower portion of the stump was living, and there was a considerable amount of fresh foliage sprouting on one side. The bird had been boring for insects near the base of the tree, and I also noticed another root-stump in the vicinity where there had been boring by a Woodpecker. I was fortunate afterwards in getting a good view of the adult bird feeding a young one, but distant from the nest some 250 yards, and following up the young bird, which was strong on the wing, procured several photographs of it resting on the bole of an elm.—CHARLES KIRK, Glasgow.

**Hérons Nesting near Stornoway.**—The recent volumes of the *Ann. Scot. Nat. Hist.* contain no mention of Herons (*Ardea cinerea*, L.) nesting in the Outer Hebrides, except that in Mr Boyd Watt's list of Scottish Heronries (1908, p. 221), there occur the names "Lewis, west side," and "North Uist." It will, therefore, be of interest to record that two pairs nested in 1910, in the tops of some high fir trees, on a hillock to the south-west of Stornoway Castle gardens. There were already young birds in the nests when the latter were found, but they were unfortunately killed by some boys before they were able to fly. The nests do not appear to have been tenanted since that time.—DONALD MACDONALD, Stornoway.

**Remarkable Eggs of Tufted Duck.**—On 8th June I came on the nest of a Tufted Duck (*Fuligula cristata*), containing a somewhat remarkable clutch. The eggs—ten in number—were mostly milk-white in colour, and the remainder exhibited a very pale green hue. There was no doubt as to their identity, as I flushed the bird off the nest and the down was typical. I am quite familiar with the nests of this species, and up till now have always considered that the eggs varied little from the ordinary greenish buff type.—J. KIRKE NASH, Edinburgh.

**Turtle-dove Nesting near Gretna Green.**—Readers of the *Scottish Naturalist* will be interested to learn that the Turtle-dove (*Turtur communis*) is at present (22nd June) nesting within three miles of Gretna Green, and a fledged young one is in the nest.—JAMES B. CAIRNS, Carlisle.

**Green Sandpiper in Tay.**—On 28th June, at Morton Loch, North Fife, we twice flushed a Green Sandpiper (*Tringa ocropus*). The first time it only flew a short distance and alighted again, but the second time it rose high in the air and went off due north. There do not seem to be many previous records of the Green Sandpiper for the Tay Area.—EVELYN V. BAXTER and LEONORA JEFFREY RINTOUL, Largo.

**The Greater Wheatear in Berwickshire.**—On 11th May last a male Greater Wheatear (*Saxicola oenanthe leucorrhoa*) was killed at the lantern of St Abb's Head Lighthouse, and kindly forwarded to me by Mr J. Moore, assistant light-keeper. From Barnsness Lighthouse, a few miles to the north, in Haddingtonshire, Mr D. Budge sent me one which was obtained there on the night of 20th April. The wing measurement in both cases was over 100 mm.—WILLIAM EVANS, Edinburgh.

**The Great Crested Grebe in Peeblesshire, &c.**—As the Great Crested Grebe (*Podiceps cristatus*) does not appear to have been recorded from Peeblesshire, the fact that I saw a pair on Portmore Loch on 14th April last may be worth mentioning. They were swimming close together, and from their actions I should not be surprised if they nested on the loch, though they may only have been visitors from Gladhouse Reservoir, on the Midlothian side of the county march, where I have reason to believe a pair bred last year. I may also mention that a bird with a young brood was seen on Clearburn Loch, Selkirkshire, in June 1910.—WILLIAM EVANS, Edinburgh.

**Black-necked Grebe in Perthshire.**—On 25th April I saw a Black-necked Grebe (*Colymbus nigricollis nigricollis*), in full breeding plumage, on a loch in Perthshire. It appeared to have arrived with four Great Crested Grebes, with which it was swimming about, and which were not there earlier, as I had been keeping a constant look out for them.—M. BEDFORD, Woburn Abbey.

**Scottish Neuroptera.**—During the summer of 1911 Col. J. W. Yerbury was good enough to take for me a few insects belonging to this order. Our knowledge of the distribution of members of the Neuroptera is very limited, and it will only be by the systematic recording of captures—even of common species—that we shall be able to

increase it. With this object I record Col. Yerbury's useful captures, which were as follows:—*Sialis lutaria*.—A male at Lochinver, on 23rd June. *Panorpa germanica*.—Five examples: (1) a male, Dingwall, 27th May, practically immaculate; (2, 3) males, Dingwall, 29th May, almost immaculate; (4) a female, Dingwall, 29th May, sparsely spotted; (5) a female, Lochinver, 12th July, of a fairly typical form. At Dingwall, on 29th May the species was in fair numbers. The striking, almost immaculate form is the var. *borealis* of Stephens. Though I have several sparsely spotted specimens from the south of England, I have not one with wings so clear as in this form from the north of Scotland. For an illustrated account of the British Panorpas, see *Entomologist* for 1910, p. 185. *Sisyra fuscata*.—One from Lochinver, 11th July. *Hemerobius humuli*.—One from Loch Assynt, 2nd June, and three from Lochinver, 23rd June. These are very dark specimens, one being particularly so, but the male appendages point to this species. *Hemerobius orotypus*.—Two from Spey Bridge, 31st July, and another from the same place on 2nd August. *Hemerobius nervosus*.—One from Loch Assynt, 9th June; one from Lochinver, 26th June; four from Spey Bridge, 31st July; one from Grantown-on-Spey, 17th August.—W. J. LUCAS, Kingston-on-Thames.

**Cyllocoris flavonotatus in Scotland (Forth Area).**—Since writing the note on Scottish Heteroptera which appeared in the June number of this magazine, I have taken another addition to the Scottish list, namely, *Cyllocoris flavonotatus*, Boh., in Forth. The capture was made on 8th June 1912, when I beat a specimen off an oak in Boquhan Glen, Stirlingshire. The localities given in Saunders' book are in the south of England, Norfolk, and Ireland.—WILLIAM EVANS, Edinburgh.

**Spiders from the North of Scotland.**—The following is a list of spiders from the north of Scotland which have recently been submitted to me for identification. They were collected at various times from 1909 to 1911 by an entomologist, Mr A. W. Beverley, Earl's Colne, Essex. Though the collection, in which it will be noted the critical *Leptyphantus* are well represented, does not add anything new to the Scottish list, it extends the range of a few species. In the list which follows, the names of localities are contracted thus: W. = Wick; N. = Nairn; S. = Shetland; T. = Tain; K. = Keith; O. = Orkney. *Segestria senoculata*, ♀, W. T.; *Drassus lapidosus*, Wk., ♀, N.; *Xysticus pini*, H., ♀, T.; *Lycosa amentata*, Clk., ♂ ♀, W.; *Trochosa terricola*, ♀, K., Skye; *Textrix denticulata*, ♀, W.; *Cryphaca sylvicola*, ♀, W.; *Amaurobius fenestralis*, Str., ♂ ♀, W. N.

T. O.; *A. similis*, ♀, W.; *Meta merianæ*, ♂ ♀, T.; *M. segmentata*, ♂ ♀, W.; *Epeira diademata*, Clk., ♀, T.; *Steatoda bipunctata*, L., ♀, T.; *Robertus lividus*, Bl., ♀, N.; *Theridion sisyphium*, N.; *Centromerus bicolor*, Bl., ♂, N.; *C. silvaticus*, Bl., ♀, K.; *C. prudens*, Cb., ♂, K.; *Bathyphantes concolor*, ♂ ♀, T.; *Porrhomma pygmæum*, Bl., ♂, N.; *Leptyphantes minutus*, ♀, S.; *L. leprosus*, ♀, W. T.; *L. zimmermannii*, Bertk. (= *blackwallii*, Kulcz.), ♂ ♀, N.; *L. tenebricola*, Wid., ♂, W.; *L. tenuis*, Bl., ♂ ♀, W.; *L. mengii*, ♂ ♀, K. S.; *Bolyphantes alticeps*, ♂ ♀, K. S. W.; *B. luteolus*, ♂ ♀, N.; *Linyphia triangularis*, ♂ ♀, K.; *Mengia scopigera*, Grube, ♀, W.; *Leptorhoptrum luthwaitii*, Cb., ♀, N.; *Savignia frontata*, Bl., ♀, K. N.; *Cnephalocotes elegans*, Cb., ♀, N.—J. E. HULL, Ninebanks Vicarage, Northumberland.

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## BOOK NOTICES.

ARISTOTLE'S RESEARCHES IN NATURAL SCIENCE, by Thomas East Lones, M.A., LL.D., B.Sc. London. West, Newman & Co., 1912. 8vo, pp. 274. Price 6s. net.

The author of this interesting work has been at great pains to gather together in readable form the curious, but often surprisingly accurate, ideas of the well-known Greek philosopher which are scattered over his numerous works on various branches of Natural Science. The result is very satisfactory, for we are furnished with a concise view such as could only be obtained by the reader with the expenditure of much laborious research. Aristotle's notions regarding any particular organism, structure, or phenomenon can here be readily found, by the help of a good index and innumerable footnotes. Thus, if the reader desires to know what the philosopher thought about the Ostrich, we turn up the three references given in the index, and find at once a brief summary of all that he said about such a bird, while the footnotes enable one to find readily the actual passages in the original text. We should recommend the use of this volume along with one or other of the excellent translations which have recently been published.

HOW TO USE THE MICROSCOPE, by Rev. C. A. Hall. London: A. & C. Black. Pp. viii and 88, with 20 Photographic Plates. Price 1s. 6d. net.

There are many cheap books on the Microscope before the public, but we do not know a better than the one now under

consideration. It is intended for the novice, and hence the style is simple, and the subject-matter limited to the description of comparatively cheap apparatus. Many hints, indeed, are given upon the construction of home-made appliances which, for a time at least, may serve the amateur of limited means. The photographs which are reproduced as plates are excellent, and prove the author to be skilful in the art, and quite competent to instruct his readers.

A CATALOGUE OF THE VERTEBRATE FAUNA OF DUMFRIESSHIRE, by Hugh S. Gladstone, M.A. Dumfries: J. Maxwell & Son, 1912. 5s. net.

Those who simply wish to know what Vertebrates occur or have occurred in the county, and their status therein, have their want reliably supplied by Mr Gladstone's catalogue. The fact that it has been drawn up by the author of the *Birds of Dumfriesshire* is sufficient guarantee for the accuracy of the Bird portion, while the other sections (Mammals, Reptiles, Amphibians, Marine and Freshwater Fishes) all bear evidence of similar careful work. The fairly long list of fishes includes a number of freshwater species—Lochmaben Vendace, Carp, Chub, Rudd, Gudgeon, Tench, and Common Bream—but little known in Scotland, and some, if not all of which were doubtless originally introduced. The catalogue, which extends to 80 pages, exclusive of a short introduction, is nicely got up, with a map of the county at the end.

THE BIRDS OF NORTHUMBERLAND AND THE EASTERN BORDERS, by George Bolam. Alnwick: Henry Hunter Blair, 1912. Price 15s.

Although an important volume dealing with the vertebrate fauna of an almost identical area, that of Tweed, has recently appeared, yet Mr Bolam's book from its richness in detail and in original observations is in no way to be regarded as superfluous. Like all works in which personal experiences bulk large, the book has a special value of its own. The author lived long in the area upon whose birds he writes so exhaustively and so well. In addition, he affords excellent field-notes on the habits of the various feathered inhabitants of a country which is naturally and historically attractive, and these render the book eminently readable. If the book has a fault it is due to the raids made by the author beyond the borders of his prescribed area, especially his incursions northwards. These have led him to ascribe to the wrong authority some recent and interesting discoveries made at the Isle of May, quite unintentionally, we are sure; and to resuscitate an erroneous record of the American

Bittern on the Pentland Hills, and a wrong locality (Dalkeith) for the East Lothian Purple Heron. The volume runs to over 700 pages, is nicely got up, and is well illustrated. In our opinion it is one of the best books of its kind which has appeared in recent years; it is something more than a faunal work.

THE FLIGHT OF BIRDS, by F. W. Headley, with sixteen Plates and many Text-figures. London: Witherby & Co. 5s. net.

Birds are pre-eminently masters of aerial locomotion, yet the problems associated with their powers of flight are little understood by the majority of ornithologists. This lack of knowledge is, no doubt, to be largely attributed to the fact that the subject is decidedly a technical one and that comparatively few possess the necessary training to approach it. The object of Mr Headley's book is to reduce these difficulties to a minimum, and his treatment of the problems is as simple and as lucid as it is possible to make it. The author is well known as an authority on the subject, and this neat and abundantly illustrated little volume is worthy of the perusal of the very numerous class of naturalists who are interested in one of the leading attributes of bird-life.

PROCEEDINGS OF THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, 1911-1912. Pp. xvi and 104, four Plates. Price 3s.

This Society still shows evidence of much activity on the part of its members. The accounts of the Proceedings contain much of interest, while the articles by Messrs Lucas and Adkin, entitled "The Bracken Fern" and "Notes on the Season" respectively, are lucidly written. The Annual Address, by Mr W. J. Kaye, deals with the chief entomological features of 1911, and concludes with a few remarks on "Mimicry."

THE BRITISH TUNICATES; an unfinished Monograph, by the late Joshua Alder and the late Albany Hancock, F.L.S. Edited by John Hopkinson, F.L.S., &c. Vol. III., *Aggregatæ (Ascidie composite)*. London: Ray Society, 1912. 12s. 6d. net.

The publication of this volume completes the work, of which we have already—on the occasion of the issue of Vol. II. in 1907—expressed our cordial appreciation. In the present part, which is devoted to the Tribe *Aggregatæ*, 53 species comprised in 10 genera are dealt with; and practically all are beautifully figured in colours in the 16 plates. There are also many text-figures, while a portrait of Canon Norman, who has greatly interested himself in the work,

forms the frontispiece. A supplement, giving additional references and localities, and a general index are inserted at the end.

WE desire to draw attention to the publication of the REPORT ON SCOTTISH ORNITHOLOGY IN 1911, INCLUDING MIGRATION, by the Misses Baxter and Rintoul. The voluminous nature of the information communicated has made it imperative that the Report should be issued separately, and it forms the first of a series of "Extra Publications" which we hope to issue in connection with the *Scottish Naturalist*. The Report covers 80 pages, and deals, under a variety of headings, with no less than 192 species. The price is 1s. 6d. net.

## GLEANINGS.

Prof. M'Intosh publishes in the July number of the *Ann. Mag. Nat. Hist.* (8th series, vol. x., pp. 117-130), No. xxxiii. of his "Notes from the Gatty Marine Laboratory, St Andrews." Half a dozen articles are included in this instalment, the first of which refers to a white Porpoise recently observed and caught in St Andrews Bay. It was found to be a young female of a dull yellowish white colour all over; the eye was normal as regards pigment and not like that of an albino. The fifth article is on the British marine worms of the family Capitellidæ (Halelminthidæ). Only three species occur in Britain, but all these are found off the Scottish coast.

On pp. 94-95 of the *Glasgow Naturalist*, published in May last (vol. iv., No. 3), is given a list of Diptera and Birds observed during the excursion of the Andersonian Naturalists' Society on 25th May 1911, to Loch Riddon.

The *Irish Naturalist* for July contains (pp. 125-130) an interesting paper by Prof. C. J. Patten on "Wrens on Migration observed at the Tuskar Rock and Lighthouse." The article is mainly devoted to a criticism of R. M. Barrington's hypothesis that "the Wren chooses the route between Antrim and the S.W. of Scotland as the shortest passage from Ireland to Britain—a selection not unnatural in the case of the shortest winged British Bird." This hypothesis was founded upon the fact that of the four birds which struck the lanterns on the east coast of Ireland, three were captured at the Maidens, Co. Antrim. Prof. Patten regards this evidence as insufficient, and points out that the shortness of the wing is not necessarily a factor limiting the bird's flight. The power of endurance, he argues, is of much greater importance, and in this respect he considers the Wren to be well endowed.

Readers who are interested in the movements of birds may consult with advantage a paper by John Paterson in the *Glasgow Naturalist* for May (vol. iv., No. 3, pp. 66-70), entitled "The Return of Summer-Birds to the 'Clyde' Area in 1912." Notes are given on twenty-seven species.

Prof. T. Hudson Beare, in the *Entomologist's Record* for June (pp. 138-145) concludes his useful "Retrospect of a Coleopterist for 1911." This portion of the paper is devoted to a review of the principal Articles and Notes published during the year, as distinguished from the records of localities to which we alluded in our June number. Naturally the present instalment deals principally with questions of classification, synonymy, habits, life-histories, and the like.

Anderson Fergusson, in the *Glasgow Naturalist* (vol. iv., No. 3, pp. 70-81), publishes a second paper on "Additions to the List of Clyde Coleoptera." No fewer than 155 species are recorded in the list as new to the area under consideration, making a total of 1200 now on record.

After a somewhat long interval the Rev. F. D. Morice resumes, in the *Ent. Mo. Mag.* for July (pp. 153-159), his exceedingly useful "Help-Notes towards the Determination of British *Tenthredinidæ*, etc." In this, the twenty-ninth instalment, the genera *Allantus*, Jurine, and *Tenthredo*, L., are dealt with, and a synoptic table is given for the determination of the twenty-three species which have any claim to rank as British. *T. velox*, F., is recorded from Rannoch (Donisthorpe).

In a short instalment of the late G. H. Verrall's paper on "Another Hundred new British Species of Diptera," published in the July number of the *Ent. Mo. Mag.* (pp. 145-147), *Medeterus excellens*, Frey, is recorded from Nethy Bridge (C. G. Lamb). The female is described for the first time, by J. E. Collin, from specimens taken by Col. Yerbury in the same locality.

F. W. Edwards publishes, in the *Entomologist* for July (pp. 191-195), the first instalment of a valuable paper entitled "Notes on the British Mosquitos (Culicidæ)." At the outset an artificial key is given which will be useful for the novice, while the more advanced student is furnished with a table of Genera, including both males and females. We notice that most of the British species formerly placed in the genus *Culex* are now called *Ochlerotatus*, differing from true members of the restricted genus *Culex* in having the claws toothed.

In a note entitled "Land Shells from Largs," published in the *Journal of Conchology* (vol. xiii., No. 11, July 1912, p. 320), J. R. le B. Tomlin records thirteen species, one of which (*Hyalinia lucida*) is a new county record for Ayrshire.

In the continuation of his paper on "Additions to 'British Conchology'" (*Journal of Conchology*, l.c., pp. 324-338) the following species are recorded from Scottish waters:—*Pleurotoma turricula*, Mont., var. *rosea*, M. Sars; *P. trevelyana*, Turt.; *Cypræa europæa*, Mont., var. *minor*, Marsh.; *Cylichna acuminata*, Brugin; *C. umbilicata*, Mont.; *C. umbilicata*, var. *strigella*, Lov.; *C. ovata*, Jeff.; *C. alba*, Brown; *C. alba*, var. *corticata*, Beck.; *Utriculus mammillatus*, Phil.; *U. truncatulus*, Brugin, var. *pellucida*, Brown; *U. obtusus*, Mont., var. *lajonkairieana*, Bast.; *U. ventrosus*, Jeff.; *U. expansus*, Jeff.; *U. hyalinus*, Turt.; *U. globosus*, Lov.; *Actæon tornatilis*, L., and vars. *subulata*, S. Wood, and *tenella*, Lov.; *Bulla utriculus*, Brocc., and var. *oblonga*, Jeff.; *Scaphander lignarius*, L., var. *curta*, Jeff.; *S. puncto-striatus*, Migh.; *Philine scabra*, Müll., and var. *circa*, Marsh.; *P. catena*, Mont., and var. *zona*, Jeff.

Charles Oldham records in the same journal (p. 340) the occurrence of *Limax cinereo-niger* in Westernness. Half-grown examples were taken in September 1911, on fungi, in the birch forest at Fort Augustus. The Hon. Recorder records (p. 342) *Clausilia bidentata* in abundance at Yair—an addition to the Selkirkshire county list. Among the "Census Authentications," given on p. 349, we note *Arion intermedius*, *A. circumscriptus*, and *A. sulfuscus*, var. *aurantiaca*, taken at Creetown in Kirkcudbrightshire, by E. Collier.

"Some Echinorhynchs from the Clyde Area," is the title of a paper in the last published number of the *Glasgow Naturalist* (vol. iv., No. 3, pp. 88-90). The author, Richard Elmhirst, records seven species of these Round-Worms, taken variously from the Cod, Lythe, Saith, among fishes; the Common Frog; and the Blackbird, Starling, Shag, Cormorant, Lapwing, and Common Gull.



*(Authors are responsible for nomenclature used.)*



# The Scottish Naturalist

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## THE NEW NOMENCLATURE OF BRITISH BIRDS.<sup>1</sup>

ALTHOUGH not mentioned on the title-page of the Hand-List, yet its chief feature is the changes of nomenclature it introduces and invites naturalists, on the plea of uniformity, to accept in place of current names, many of which are time-honoured in the history of British and European ornithology.

Feeling regarding these changes runs high in this country, and naturally so, since British zoologists were the first to advocate uniformity in the nomenclature of their science, though one would imagine from the appeal and statements made that this important desideratum had received little or no consideration in this country.

Seventy years ago the British Association appointed a committee "*to consider of the rules by which the nomenclature of zoology may be established on a uniform and permanent basis.*" This committee consisted of Charles Darwin, Prof. Henslow, Rev. L. Jenyns, John Phillips, Sir John Richardson, W. Ogilby, Prof. J. O. Westwood, W. Yarrell, Sir Richard Owen, J. W. Broderip, W. E. Shuckard, G. R. Waterhouse, and H. E. Strickland (secretary), and presented its report

<sup>1</sup> *A Hand-List of British Birds, with an Account of the Distribution of each Species in the British Isles and Abroad*, by Ernst Hartert, F. C. R. Jourdain, N. F. Ticehurst, and H. F. Witherby. London: Witherby & Co. 7s. 6d. net.

and rules to the 1842 meeting of the Association (*Brit. Assn. Report*, 1842, pp. 105-121).

These rules became the recognised authority on the subject. They were submitted in Italian by Prince C. L. Bonaparte, to the Science Congress at Padua in 1843, and were generally approved of; and a French translation of them appeared in *L'Institute*, in which much stress was laid on their importance.

In 1863 the Association considered it desirable that this important subject should be further considered, and appointed a committee to report "on the changes which they may consider it desirable to make, if any, in the rules of nomenclature drawn up at the instance of the British Association in 1842." Its members were Sir Wm. Jardine, Dr P. L. Sclater, H. T. Stainton, Alfred Russel Wallace, Spence Bate, Gwyn Jeffreys, Dr J. E. Gray, Dr P. H. Carpenter, Prof. Newton, Prof. Babington, Dr J. D. Hooker, Prof. Huxley, Dr Francis, Prof. Balfour, Prof. Allman, A. H. Haliday, T. V. Wollaston, and G. Bentham. This committee presented its report in 1865 (*Brit. Assn. Report*, 1865, pp. 25-42).

Both these committees recommended that the twelfth edition of Linnæus' *Systema Naturæ*—the finished work of the great naturalist—should be the foundation upon which zoological nomenclature should be based. The 1865 report contained many sound recommendations, one of them being, that it was exceedingly injudicious to accept a specific name for a genus; and that where such had been done it is the generic name that should be thrown aside, and not the old specific name.

In 1878 the Association requested Dr P. L. Sclater to re-edit the rules.

With these well-known facts on record, one reads with amazement the statement on page vi of the introduction of the Hand-List that "we have neglected for more than 150 years one of the requisites of greatest importance—that our labels should everywhere be the same for the same bird."

That the leading principles so carefully propounded by men so pre-eminently distinguished in all branches of zoology should have been set aside after long years of usage,

during which a very considerable measure of uniformity had been attained, is a mystery. It is a mere matter of opinion as to whether the twelfth (1766) or the tenth (1758) edition of Linnæus should be the starting-point, and the twelfth had the advantage of sixty-three years' start in usage.

We are now asked to be obedient unto the law. We ask, Which law? The *laws of priority* in this matter are the laws of the British Association.

British zoologists have, so to speak, a vested interest in matter of priority in the nomenclature of their science, and many of them consider that the claims of their long established codes have not received at the hands of later committees on the subject the consideration they justly deserved.

It is well to remember that our older and middle-aged naturalists, recognising the excellent work of their distinguished predecessors in this cause, will not conform readily to the finding of any commission, international or otherwise. As the situation now stands, the attainment of uniformity must lie along the path of mutual concession, otherwise it will certainly not be reached for many years to come.

The more one studies the march of nomenclatural events in recent years the more one is impressed with the wisdom of the findings of the British Association's committees. The departure from its main decision as to the starting-point has opened the door for endless changes, and has resulted in a state of chaos prevailing in zoological nomenclature—the greatest that it has ever known.

It is not in accordance with the facts to suppose that there were no binomial names *prior* to the tenth edition of the *Systema Naturæ*; and it is possible that a new generation of zoologists may arise and say, we must have *strict* priority. A number of such names date back to Gesner (1555); and not a few will be found in the classical work of our countryman, Willughby, which was published in the year 1676.

We have alluded to the numerous changes in nomenclature entailed by the adoption of the names given in this Hand-List. These we do not hesitate to describe

as appalling. On instituting a comparison between the nomenclature here used and that of the last edition of Saunders' List (1907), we find that out of the 417 species there recognised as members of the British avifauna no less than 226 have to be changed: in other words, over 54 per cent. of the current names should no longer stand.

The nomenclature of the Hand-List is in accordance with the rules of the International Committee framed in 1905. Many of the changes are made on trivial grounds, while others show a total disregard for the serious confusion their acceptance would entail. We give the following instances as examples:—

In the tenth edition of his *Systema*, Linnæus described on page 125 a duck under the name of *Anas platyrhynchos*, which is considered by Lönnberg to be the female of the Wild Duck, and is accepted by the authors of the Hand-List. On page 127 Linnæus described the male Wild Duck as *Anas boschas*. The International rules demand that the name *platyrhyncha* must be adopted. Why?—because this name appears two pages earlier in the volume than *boschas*! This is *not* priority, for both names were published simultaneously. To dismiss the latter name, which has been all but exclusively in use for over 150 years, on such flimsy and arbitrary grounds, is in our opinion opposed to common sense. On the other hand, the name *platyrhyncha* has never hitherto been associated with the Wild Duck. But this is not all: Linnæus in his twelfth edition tells us that his *Anas platyrhynchos* is the female of the Shoveler. He was mistaken in describing the speculum as purple, but his description applies to both sexes.

Several names after long years of association with certain species have been transferred to others. The name *musicus*, after being in use since 1766, and applied thousands of times to the Song Thrush in the ornithological literature of all countries, is transferred to the Redwing (*Turdus iliacus*), because Linnæus in inadvertence used this name for the latter bird in 1758. Yet *Turdus iliacus* was used for the Redwing by Willughby in 1676, Ray in 1694, and Brisson in 1760. What a satire on the so-called system of priority!

Fortunately British birds are well known by their vernacular names, otherwise we fear our ornithologists would not recognise a considerable number of their familiar friends under their new, or, more correctly, obsolete scientific titles, many of which have no place in the synonymy given in modern literature of the subject. These changes as regards British birds are a mere drop in the bucket when these new rules are applied to ornithology generally. What becomes of the nomenclature in that magnificent array of volumes, the *British Museum Catalogue of Birds*, and of the recently published *Hand-List* of them? The nomenclature of this great and only history of the birds of the world is based upon the twelfth edition of Linnæus' *Systema*, and the nomenclature of the tenth edition is not quoted in the synonymy of the vast majority of the species. What of the changes entailed in the nomenclature of the Animal Kingdom as a whole?

The British Ornithologists' Union has appointed a committee to prepare a new edition of its *List of British Birds*. This committee has held numerous meetings, and it is expected that the result of its labours will soon be published. We look forward to its pronouncements with interest, and with confidence in the judicial spirit in which it has approached the important subject of nomenclature.

For ourselves, though our sympathies are strongly in favour of the British Association's rules, yet we are willing to view the present situation in a liberal spirit. There must, however, be concessions, and we regard it as essential that a number of time-honoured names must be conserved.

We have felt compelled to discuss this subject of nomenclature, because so little seems to be known in some quarters regarding the past great efforts in the cause of uniformity.

Apart from its great changes in nomenclature, the book is a welcome and useful volume. It affords an up-to-date list of British species and racial forms, with a concise and, on the whole, accurate account of their distribution both at home and abroad.

As Scottish naturalists we demur to the statement that the Continental Goldcrest is possibly not of annual occurrence on our shores. We should like to know on what grounds the Long-tailed Titmouse and Blue Titmouse which have occurred in Shetland should be considered to belong to the British race; so far as we know, their racial identity is "not proven." The only Shetland Long-tailed Tits occurred in Unst, the north-most of the British Isles, and were more likely to have been visitors from the Continent than vagrant British native birds. The Gannet has only a single breeding-place in Orkney; we are not aware that the Common and Great Black-backed Gulls nest as far south in east Scotland as the Forth; and in our experience the Shag far outnumbers the Cormorant as a Scottish bird. As regards the winter quarters of the Yellow Wagtail, we may remark that they extend as far south in Africa as the Transvaal and Natal. There are other mistakes of a minor nature, but these are few considering the amount of information afforded.

We notice that in a great number of instances the journal "British Birds" is quoted as if it were the original source of publication of interesting records, which is not the case.

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## ON A CASE OF HYBRIDISM BETWEEN AN EIDER AND A WILD DUCK

By WILLIAM EAGLE CLARKE

PLATE V.

ONE of the most remarkable cases of hybridism ever known to have occurred between birds in a wild state is furnished by the example now under consideration, whose parents were an Eider and a Wild Duck. This unique specimen—no other example so far as I am aware is known<sup>1</sup>—is a drake, and was shot early this year on the island of Auskerry, one of the Orkney group, where it had for two years paired with a female Eider, but whether broods resulted is, unfortunately, not known.

<sup>1</sup> Suchetet in *Des Hybrides à l'Etat Sauvage* has no such cross.

Mr Laidlaw, of Auskerry, who shot the bird, says it was a surface feeder. He never saw it dive, although he watched it for hours. He sent it to Mr Charles Kirk, of Glasgow, for preservation, and it was submitted to me for my opinion on its suggested parentage, which I am able to confirm.

Knowing that my friend Mr Bonhote had made a special study of hybrid ducks, I sent him this remarkable cross for inspection, and he has favoured me with some very interesting remarks on its peculiarities, which I have reproduced below.

The following tabulation affords a comparison between the characters and plumages of a male Eider, a male Mallard, and the Hybrid, and also a description of the latter:—

	<i>S. mollissima.</i>	<i>A. boscas.</i>	<i>Hybrid.</i>
<b>GENERIC CHARACTERS.</b>			
BILL . . . .	Swollen, extending to forehead, divided by angular point of feathers.	Elevated at the base, etc. Under mandible smaller than upper.	<i>Intermediate.</i> Nail much larger than Mallard, and having nail (swelling) on under mandible—an Eider feature absent in Mallard.
WINGS . . . .	1st and 2nd quills sub-equal. Moderate in length.	2nd quill longest. Large.	2nd quill longest. Moderate.
TAIL . . . .	14 feathers.	16 feathers.	18 feathers.
HIND TOE . .	Lobated.	Simple.	Lobated.
<b>MARKINGS.</b>			
HEAD . . . .	White crown, V-shaped black marking from culmen through eyes.	Uniform metallic.	Metallic, with V-shaped narrow <i>white</i> line extending backwards to the occiput above the eye, ear coverts <i>white</i> , and irregular white lines about 1½ in. long on either side at the hinder base of the neck. Lores and cheeks mottled greyish white.
BASE OF NECK .	No ring.	White ring.	<i>Broad white ring.</i>
MANTLE . . . .	No markings.	Irregularly vermiculated.	Irregularly vermiculated.
BACK AND RUMP .	No markings.	No markings.	No markings.
BREAST . . . .	A few dark edgings.	None (sometimes a sub-terminal spot or vermiculated).	Dark edgings to most of the feathers.
UNDERPARTS . .	None.	Vermiculated.	Vermiculated.
WINGS . . . .	Uniform. No speculum.	Uniform. Purple speculum.	Uniform. Dark green speculum.
INNER SECONDARIES	Curved.	Straight.	<i>Intermediate.</i>

	<i>S. mollissima.</i>	<i>A. boscas.</i>	<i>Hybrid.</i>
COLOUR.			
HEAD . . .	White, with black and green markings.	Uniform metallic green.	Dark metallic green, with white markings (as above).
UPPERPARTS . .	White, brownish black in eclipse, and young.	Brownish grey, more or less vermiculated.	Dark brownish black, with fine brown vermiculations.
RUMP AND UPPER TAIL COVERTS	Black.	Black.	Black (no recurved feathers).
BREAST . . .	Creamy buff, with black edgings.	Chestnut (plain, spots, or vermiculated).	Brownish chestnut, with black edgings.
UNDERPARTS .	Black.	Vermiculated grey.	Greyish brown (darker on the flanks), vermiculated with black.
SIDES OF RUMP .	White.	As underparts.	Pale rufous brown.
WING COVERTS .	White.	Grey.	Greyish brown.
INNER SECONDARIES	White.	Greyish, with brown edgings.	Hoary grey, with narrow black edgings.
LEGS AND TOES .	Greenish.	Orange.	Orange.

Mr Bonhote, who is the main contributor to the above tabulation, remarks that one can draw from it some interesting generalities. Some of the characters are intermediate; others are entirely those of one parent; and we have also some new characters. As regards the latter, the markings on the head are, perhaps, the most curious. He suggests that the V-shaped white mark is the Eider black V, only narrower, and therefore not passing through the eye; one may note, however, the reversing of the colour. The whitish lores and cheeks are probably due to the Eider's white face. The white ear covert is one of the pœcilomeres (cf. *Proc. Linn. Soc.*, xxix. 185), or spots whence variation in colour generally commences. The two other white stripes are quite new, and remind one of the Pintail. The markings on the breast are undoubtedly pure Eider, as he has never seen or heard of a similar variety in the Mallard; it is noticeable, however, that they are much more uniform and numerous than in the case of pure-bred Eiders. The increase in the number of the tail feathers is another most interesting point: can they by any chance represent the two long, stiffened and recurved tail coverts of the Mallard? The light patch





HYBRID BETWEEN EIDER (*SOMATERIA MOLLISSIMA*) AND WILD DUCK (*ANAS BOSCHIS*)



on the side of the rump is, of course, an unmistakable Eider feature. Generally speaking, the colour (with the exception of the speculum) is intermediate between an adult Mallard and a young Eider. The white edgings to some of the under tail coverts is a Mallard feature. The bird is quite the most interesting he has seen.

A remarkable circumstance remains to be related. When residing on the Pentland Skerries in May last, I saw what I have little doubt was a brother of this bird. It flew past me over the sea at fairly close range, and I had an excellent view of it through my binoculars. I was unable, however, to come to any conclusion as to its identification—it was a complete puzzle. Dr C. B. Ticehurst saw this bird on the same occasion, but quite independently. He, too, has seen the Auskerry specimen, and agrees that the two are precisely similar. Thus another bird of this singular family probably survives. Auskerry lies 25 miles north-east of the Pentland Skerries.

I am much obliged to Mr Laidlaw, and to Mr Kirk, for allowing me to examine and describe this extraordinary bird.

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## THE BRITISH SPECIES OF THE DIPTEROUS GENUS *FANNIA*, ROB. DSV.

By J. R. MALLOCH.

(Continued from page 182.)

18. *nigra*, Mall., ♂. Deep black, hardly shining; eyes very narrowly separated by a black stripe; frons and epistome hardly projecting, jowls descending but little below the eyes; face silvered; third joint of antennæ about two and a half times as long as the second; arista slightly pubescent; palpi normal; thorax dull black, unstriped; abdomen with distinct grey dusting, the dorsal stripe broadly triangularly dilated on each segment; anal organ small and inconspicuous; legs

black ; mid femora hardly contracted at the tip, with an antero-ventral row of about eight strong bristles on the basal two-thirds, and a row of very short but strong bristles on the apical third, postero-ventral surface with a somewhat similar row of rather weaker bristles ; posterior surface with a row of long, soft, curved hairs, a few strong bristles at the tip of the postero-dorsal surface and a few weaker bristles at the tip of the antero-dorsal surface ; mid tibia with the apical half slightly thickened, ventral surface clothed with rather short but distinct pubescence which lengthens as it nears the apex ; two antero-dorsal and two postero-dorsal bristles present, the upper much the weaker ; bristling of hind femora not remarkable ; hind tibia with generally two bristles on the antero-ventral surface, and about three above the usual one present on the antero-dorsal surface ; calyptra black, under scale much protruding ; halteres yellow ; wings infuscated, outer cross-vein waved, last portion of fourth vein rather more than twice the penultimate ; third and fourth veins slightly convergent.

♀. Unknown.

4 to 5 mm.

Only the ♂ of this has been taken so far, and the four specimens I have were taken at Bonhill and Cardross ; June to August.

19. *carbonaria*, Mg. (= *ccrvina*, Verr.), ♂. Shining blue-black ; frons in profile showing in a continuous silvered line which is unbroken on the sides of the face, epistome and jowls projecting somewhat ; third joint of antennæ about twice the length of the second, arista bare ; thorax blue-black, slightly dusted ; abdomen blue-black, pale grey dusted, the dorsal line distinctly triangularly dilated, anal organ small ; legs blue-black ; mid femora not much constricted at tip ; antero-ventral surface with about eighteen bristles on the basal three-fourths, the row decreasing in size as it advances until the last nine or ten form a comb-like row on the beginning of the apical third, three or four weak bristles near the tip ; postero-ventral row longer but weaker ; mid tibia gradually thickened towards the tip, pubescence very short at the base, but longer, thicker, and somewhat irregular on the thicker portion, generally three antero-dorsal and two postero-dorsal bristles present ; hind femora with four or five long bristles at the tip on the antero-ventral surface ; hind tibia with two dorsal, two antero-dorsal, and two or three antero-ventral bristles ; wings grey, yellow at the base, fourth and fifth veins almost parallel, outer cross-vein

almost straight, last portion of fourth vein two and a quarter times the penultimate; calyptra whitish; halteres yellow.

♀. Shining blue-black; recognisable at once by the brilliantly shining black orbits, which are twice as wide as the matt-brown middle stripe; mid tibia with one antero-ventral and one postero-ventral bristle; in other respects much as in the ♂. The yellowish wings and shining blue colour gives the ♀ much the appearance of a *Lonchæa*.

I have taken two ♂♂ and two ♀♀ at Bonhill, and one ♀ at Cardross; June to July.

20. *polychæta*, Stn., ♂. Black, shining; eyes very large and close together, unprojecting in profile, jowls descending a little below the eyes; antennæ rather short; arista nearly bare; thorax black with a greenish tinge, very slightly dusted; abdomen coloured as the thorax, distinctly pale grey dusted, rather hairy, dorsal line distinct, anal organ small; legs black, the fore knees distinctly, the others indistinctly yellowish; mid femora with a row of eight or nine long bristles on the basal two-thirds, decreasing in size towards the end, a row of ten to eleven equally long little comb-like bristles on the base of the slightly constricted apical third, then a small bare portion and four to five very short bristles at the tip on the antero-ventral surface; bristles on the postero-ventral surface longer and rather weaker than on the antero-ventral; ventral bristle conspicuous; mid tibia with very little apical thickening, pubescence short at the base, but becoming long towards the apex, at its longest part about equal to the breadth of the tibia, antero-dorsal surface with three bristles, the upper near the middle the weakest, the middle one very long and strong, postero-dorsal also with, generally, three somewhat similarly placed bristles; hind femora with a row of rather short bristles from base to tip on the antero-ventral surface, the last two longer than the others, and a row of weaker bristles on the basal two-thirds of the postero-ventral surface of almost equal length; hind tibia with two dorsal, three antero-dorsal (the middle one the longest), and two or three antero-ventral bristles; wings darkened, third and fourth veins slightly convergent, outer cross-vein nearly straight, last portion of fourth vein two and a half times the penultimate; calyptra unequal, whitish; halteres yellowish.

♀. Frons hardly one-third the breadth of the head, parallel-sided, thickly grey dusted; middle stripe from in front by its dusting hardly distinguishable from the orbits; orbits dull, at

their broadest part nearly as broad as the middle stripe at that part; thorax and abdomen more distinctly dusted than in the ♂; legs as with the ♂ in colour and bristling, except that the bristles are stronger, and the mid tibiæ possess one antero- and one postero-ventral bristle beyond the middle.  $4\frac{1}{2}$  to  $5\frac{1}{2}$  mm.

Common at Bonhill; June to September. I have also seen this from New Forest (Adams).

21. *sociella*, Ztt., ♂. Black; eyes large, frons and jowls somewhat projecting; eyes narrowly separated; antennæ moderately long; arista nearly bare; thorax grey dusted, generally with signs of two black stripes on the fore part; sides distinctly pale grey dusted; abdomen distinctly pale grey dusted, dorsal line distinct, anal organ small; legs brownish black, all knees, especially the fore part, distinctly pale yellowish; mid femora slightly thickened on the basal two-thirds and constricted at the tip, antero-ventral surface with about six weak hair-like bristles to near the middle, at the middle three strong thorn-like bristles, then after a short break a comb-like row of about eight short bristles, the constricted part is bare and at the tip there are about four weak bristles; postero-ventral surface with nine to ten equally long bristles to beyond the middle, then a break and, as on the other side, about seven longer bristles, and the bare part followed by the three or four tip bristles; mid tibia irregularly thickened, at a little before the middle slightly thickened, thinning at the middle and then thickened near the tip, pubescence short at the base, but becoming longer at the first swelling and very conspicuous on the remainder of the tibia; antero-dorsal surface with two or three bristles near the apex, the small upper one being the one usually present in other species, the other bristling normal; hind femora with a row of weak bristles from base to tip, the last two to three stronger on the antero-ventral surface, postero-ventral surface bare; hind tibia with one dorsal and three fine antero-dorsal bristles, the preapical and antero-ventral bristles absent; wings greyish, third and fourth veins slightly convergent, outer cross-vein nearly straight, last part of fourth vein two to two and a half times the penultimate; calyptra pale yellowish, equal; halteres yellow.
- ♀. Black-grey; frons hardly one-third of the breadth of the head, parallel-sided; orbits grey dusted, dull; middle stripe sometimes red-brown; thorax and abdomen grey dusted; legs with all knee-joints distinctly yellow; mid tibia with generally

only one antero-dorsal bristle, hind tibia with the preapical bristle present. Stein gives the bristling as the foregoing, but I have a series, mentioned under *kowarzii*, in which I find the bristling varies considerably. The mid tibia has sometimes two antero-dorsal bristles, and the hind tibia has often two antero-dorsal and one to two antero-ventral bristles. I have never taken this species in cop., so cannot say definitely whether I am correct in calling this female *sociella*, but the abundance of these variations leads me to infer that this is so. 5 to 5½ mm.

Abundant in woods at Bonhill; May to July; Blairgowrie (Carter).

22. *glaucescens*, Ztt., ♂. Shining black with a greenish tone; frons somewhat, jowls but little, projecting; eyes distinctly separated by a black stripe; orbits silvered, narrower than the middle stripe; antennæ shorter than the face, third joint twice as long as the second; arista bare; thorax shining black, dusted distinctly behind, a faint indication of two dorsal stripes on the front; abdomen shining, dark olive-green, dusted on the fore margins of the segments, dorsal line present, almost naked, last segment with a row of long bristles on the hind margin, anal organ very large and strong; legs black, indistinctly paler at the knees; mid femora with a continuous row of bristles from base to tip on the antero-ventral surface, which increase in size to the middle and decrease in size but become closer to the tip; ventral bristle distinct; postero-ventral bristles weaker, but more numerous, and at the constricted portion of the femora a break in the row, a weak bristle near the tip; mid tibia slightly thickened, the pubescence very short and thick, hardly increasing in length towards the tip, the usual bristles present; hind femora with an antero-ventral row of short bristles, increasing in size at the tip, postero-ventral surface with a few bristles on the basal two-third; hind tibia with the usual bristles; wings yellowish, veins brown, third and fourth veins slightly convergent, the outer cross-vein bent, last portion of fourth vein two and three-quarters the penultimate; calyptæ yellowish, unequal; halteres yellow.

♀. Dark brassy-green, shining; frons more projecting than with the ♂, narrowed behind; orbits grey dusted; from base of antennæ to ocelli of equal breadth, about three-quarters as broad as the middle stripe at its narrowest part; thorax grey dusted, more so at the sides; abdomen shining brassy-green;

hind femora with two long antero-ventral bristles near the tip; the other bristling as in the ♂; wings yellower than in the ♂. 4 to 5 mm.

I have never met with this species.

23. *incisurata*, Ztt., ♂. Very similar in size and appearance to *scalaris*, the eyes are more widely separated and the dusting more conspicuous, the abdomen presenting a rather banded appearance; legs black, all knees, especially the fore pair, yellow; a small bristle besides the preapical one sometimes present on the fore tibia; mid femora with a row of moderately long bristles (five to six) on the basal half and a regular row of short bristles on the tip half of the antero-ventral surface; postero-ventral row very long and strong at the base, but rapidly decreasing in size beyond the middle, and forming a continuous row of short bristles on the tip fifth; mid tibia very little thickened, the pubescence very short and thick, of almost equal length on the whole tibia, the bristling normal; hind femora with an antero-ventral row of bristles, the last three the longest, postero-ventral row somewhat similar but weaker; hind tibia with rows of short bristles on the antero-dorsal, antero-ventral, and postero-ventral surfaces, much as in *scalaris*; wings, etc., as in *scalaris*.

♀. Stein describes the ♀ as similar to that of *scalaris*, and gives as distinctions, the absence of the basal ventral bristle from the mid femora, and the possession of a postero-ventral row of weak bristles on the hind femora. I have taken several ♀♀ along with ♂♂, but am unable to find any without the mid femoral bristle.

Bonhill, not uncommon; May to August; Musselburgh (Carter).

24. *mutica*, Ztt. ♂. Deep black; eyes large, narrowly separated; frons in profile narrowly projecting, jowls hardly descending below the eyes; antennæ of moderate length, third joint rather more than twice the length of the second; arista bare; thorax deep black, only distinctly dusted on the sides and behind; abdomen with distinct pale grey dusting, rather short and broad, the dorsal line distinctly triangularly dilated, anal organ small; legs black; mid femora with an antero-ventral row of about nine bristles which decrease in length, but increase in strength to the end of the basal two-thirds, followed by a small break and a short row of eleven to twelve fine bristles on the constricted part of the femora; postero-ventral bristles long and



hair-like; mid tibia slightly thickened on the apical half, ventral side, the pubescence very short on the basal portion, but longer on the tip half, the bristling normal; hind femora with an antero-ventral row of short bristles, the last two at the tip stronger; postero-ventral surface bare; hind tibia with a row of equally long hair-like bristles on the antero-dorsal surface, a somewhat similar, but shorter, row on the postero-ventral surface, and two bristles on the antero-ventral surface, the usual dorsal bristle present; wings brownish, third and fourth veins convergent, outer cross-vein slightly bent, last portion of fourth vein about two and a half times the penultimate; calyptra whitish, unequal; halteres yellow.

♀. Stein gives the ♀ of this as identical with *coracina*. I have, however, a ♀ without the ventral bristle on the mid tibia which agrees with one bred from fungi with ♂♂ of this species by Mr Carter. With the exception of this difference the insects are very similar. The hind femora have only two preapical bristles on the antero-ventral surface in *coracina*, but three or four in *mutica*.

Common at Bonhill and Cardross; May to September. Bred from fungi, Musselburgh (Carter).

25. *parva*, Stn., ♂. Black; eyes large, nearly confluent; frons unprojecting, jowls descending but little below the eyes; antennæ of moderate length; arista pubescent; thorax black, or black-brown, slightly shining, slightly brownish dusted on the sides and behind; abdomen black-brown, brown-grey dusted, paler grey dusted on the base of each segment, dorsal line distinct; anal organ not very large, but on the ventral surface two small shining black knobs present; legs black-brown, mid femora hardly constricted at the apex; antero-ventral surface with a row of seven bristles of moderate length to rather over the middle, a further series of seven finer, shorter, and closer placed bristles to near the apex, and, following a short break, two or three short bristles at the tip; postero-ventral surface with the basal two-thirds armed with a somewhat similar row, then a short break, and followed by the usual shorter bristles, the basal ventral bristle absent; mid tibia with the apical half slightly thickened, the pubescence very short at the base, becoming longer towards the apex, bristling normal; hind femora on the antero-ventral surface with a row of short bristles, the last two or three near the tip only rather longer; postero-ventral surface bare; hind tibia as in *aërea*; wings

blackish brown, third and fourth veins convergent, outer cross-vein straight, last portion of fourth vein about three times the penultimate; calyptra brownish, equal; halteres yellowish.

♀. Close to *ærea* in appearance, but more brownish grey in colour, the middle stripe is more easily separated in outline from the orbits than in *ærea*, and at its broadest part is only a little broader than the orbits; the lower fronto-orbital bristle stands close to the eye-margin, whereas in *ærea* it is at the middle of the orbit; the basal ventral mid femoral bristle is absent or indistinct; otherwise much as *ærea*.  $3\frac{1}{2}$  to 4 mm.

I have never met with this species.

26. *genualis*, Stn., ♂. Black grey; eyes moderately separated; frons in profile narrowly projecting, epistome and jowls distinct; antennæ shorter than the face, third joint about twice as long as second; arista bare; thorax black-grey, shining, distinctly grey dusted behind and at the sides; abdomen blue-grey dusted, dorsal line distinct, anal organ inconspicuous; legs black, all knees, especially the fore knees, distinctly yellow; base of fore tibia broadly yellow; a fine bristle in addition to the preapical one on the apical half of the antero-dorsal surface; mid femora with a row of ten long bristles to beyond the middle which decrease in size as they advance, the apical portion with a row of twelve much weaker bristles which form an almost continuous row to the tip; basal ventral bristle very long; postero-ventral row much longer and doubled on the mid-third, the shorter bristles longer than on the other surface; mid tibia very slightly thickened apically; the pubescence very short on the basal portion, but becoming longer and looser towards the apex, bristling normal; hind femora with a row of bristles on the antero-ventral surface, the tip two or three the longest, postero-ventral surface with the basal two-thirds armed with a row of fine hair-like bristles; wings greyish, third and fourth veins nearly parallel, outer cross-vein nearly straight, last portion of fourth vein two and a half times the penultimate; calyptra yellowish, unequal; halteres yellow.

♀. Pale grey, not shining; frons very slightly convergent behind, middle stripe thickly dusted, hardly separable in colour from the orbits, orbits nearly parallel-sided and as broad as the middle stripe; thorax and abdomen pale grey dusted, without a distinct gloss; legs black-grey, dusted, coloured as in the ♂; the extra bristle present on the fore tibia; mid femoral basal bristle strong; mid tibia with a ventral bristle beyond the

middle; the tarsi slightly thickened on all legs; all otherwise as the ♂. 5 mm.

A very common species at Bonhill and on Loch Lomond side. I have taken it from the beginning of July to end of September. Mr A. E. J. Carter reports it from Blairgowrie, 9th July 1909.

(*To be continued.*)

## NOTES.

**Hedgehog in Argyll.**—I have to give what—so far as I know—is the first record of the occurrence of the Hedgehog, a little to the north of the peninsula of Ardnamurchan. Mr J. C. Stewart, who gives me the record, saw one at Kinloch Moidart last week, adding: “the first I have seen since I came.” Continuing, he says:—“On making enquiries, I find that two were seen last summer (1911), between Shiel Bridge and Dorlin; but that, I believe, is the very first authenticated appearance in Moidart. . . .” This, of course, refers to the Shiel Bridge which spans the Shiel River below Loch Shiel; and thus the route by which the Hedgehog seen at Kinloch Moidart arrived is pretty safely indicated. As Mr Stewart says:—“These particular animals must be far travelled. They can only have come *via* Lochaber, unless they were imported in bales of young trees, which is possible but very unlikely.” We have previously recorded the earlier appearance of the Hedgehog, on the authority of Mr E. D. Doncaster, and of Mr Macpherson of Corpach, and its presence along the shore of Lochiel, Argyllshire (*Fauna of N.-W. Highlands*, 1894, p. 2), and in the same revision of the fauna of that area, we give evidence of isolated occurrences in the west of Scotland, at Braemore or Inverbroom in 1900 (*auct.* Sir Arthur Fowler), and at Attadale in 1894 (*auct.* L. Hinxman). The dates of these records, stretching between 1894 and 1911, may point to a series of accidental introductions—as suggested by Mr Stewart—or “in bales of hay,” as believed possible by Sir Arthur Fowler; as also may a still earlier occurrence at Balmacarra House in 1902 (*auct.* Godfrey), *loc. cit.*, *vide* Mr Aird White.—  
J. A. HARVIE-BROWN.

**Female Greenland Wheatear in Male Plumage.**—On the 13th of May I shot what I believed to be a fine specimen of a male Greenland Wheatear (*Ænanthe leucorrhœa*), on the Island of Barra. I was much surprised to hear from Mr Charles Kirk of Glasgow, to whom I sent it to be mounted, that the bird was a female. I have since had an opportunity of comparing it with other specimens of male Greenland Wheatears obtained early in May in the British Islands. The wing-feathers are blacker than in any of these birds; in fact, the outer webs of the feathers, with the exception of the tips of some of the wing-coverts and secondaries, are quite black. Crown of head, nape and back are pale grey, showing only very slight traces of the sandy plumage of winter. Forehead, superciliary line, and upper tail-coverts, white. Line from lores to the ear-coverts, black. Underparts washed with buff, darker on the throat. Central feathers and upper third of tail, black, with the exception of white tips to the feathers on one side, which are somewhat abraded. The wing measures 106 mm.—M. BEDFORD, Woburn.

**Lesser Whitethroat in Dumfriesshire.**—During a visit to Lockerbie on 31st July, I saw a Lesser Whitethroat, *Sylvia curruca*, near Lockerbie House. It allowed a close approach, and kept going to and from a wall thickly covered with ivy. Had it been a commoner species I should have suspected it of nesting; indeed, the date indicates that in all probability it had nested in the neighbourhood. I watched it for a considerable time, and was much interested to see it, as it was a very familiar Fair Isle friend.—GEORGE STOUT, Glasgow.

**Hawfinch at Fidra, Firth of Forth.**—I am sending you a young Hawfinch (*Coccothraustes coccothraustes*), which I found in a dying state at the lantern of Fidra Lighthouse, on the night of 7th July.—G. MILLAR, Fidra Lighthouse.

[This species has become established as a native bird in south-east Scotland, and the bird recorded probably came from one of its neighbouring haunts.—EDS.]

**Quails nesting in Peeblesshire.**—For some time about the beginning of June, Quails (*Coturnix coturnix*) were heard calling in a field of hay on the farm of Halmyre, West Linton; and when the hay was being cut, towards the end of the month, a pair of old birds and five or six young ones were put out. The young birds were about the size of sparrows, and could run very swiftly.

A Quail was seen near the same place about fifteen years ago.—  
T. G. LAIDLAW, Duns.

**Pheasants in Shetland.**—While I was travelling through the valley of Weisdale lately, I was surprised to observe a pair of Pheasants (*Phasianus colchicus*)—a male and a female—arise from a heathery moor and fly into a young plantation. Although I have been residing in Shetland for several years, this is the first time I have seen this species of bird in any of the Shetland Isles.—PETER JOPP, Gonnfirth, Delting, Shetland.

**Hérons nesting in the Lewis.**—On page 185 of this volume, I gave some particulars of the nesting of two pairs of Herons (*Ardea cinerea*, L.) near Stornoway in 1910. This was apparently the only notice of the nesting of the species on the east side of the Lewis, but I have since been informed that a nest was found this season (1912) on the branches of a tall larch tree growing in a gully in the grounds of Stornoway Castle; also that a nest was found in the same place five years ago. This year three young birds were successfully reared, two of the five eggs having been taken. Since writing the previous note, I have also gathered some information about the heronry on the west side mentioned in Mr Boyd Watt's list (*Ann. Scott. Nat. Hist.*, 1908, p. 221). It appears that in 1902, Kenneth Macdonald, gamekeeper at Kinresort, found a nest with young in it on a ledge of the Tarsnig Rock at the western end of the Lewis-Harris border; this appears to be the first record of Herons breeding in the island. More birds returned in the following season, and the heronry increased to a fair size during the next few years. In 1910, however, some Ravens took possession of the rock and devoured the Herons' eggs. Since then, there have been no Herons on the Tarsnig, but the birds still nest on other rocks near the Lewis-Harris border. As regards these west-side Herons, my informant is a gamekeeper at Loch Resort, but I am unaware to what extent the facts are already known. It is hardly necessary to say that Herons may be seen in dozens on the shores of the Lewis, but we have hitherto supposed them to nest only on the mainland.—DONALD MACDONALD, Stornoway.

**Green Sandpiper in Wigtownshire.**—About 4 P.M. on the afternoon of 5th August, on Souleseat Loch (Inch), I was lucky enough to flush a pair of Green Sandpipers (*Tringa ocropus*) at close quarters on the shore of the loch: they flew due south towards

Luce Bay, uttering their shrill cry, their white upper tail-coverts being very conspicuous. This is the first time I have come across the species in Wigtownshire, though it has been seen in Wigtown Bay.—J. G. GORDON, Corsemalzie.

**Broad-billed Sandpiper in Fifeshire.**—I have again to record a rare Sandpiper from the Morton Lochs, near Tentsmuir, Fifeshire, where on 1st August last year we obtained a specimen of the Wood Sandpiper (*Annals*, 1911, p. 248).

Very early in August last year these lochs became dry, and no more waders were to be seen about them; but this year they appear to be almost specially attractive, for the season has been wet, with, however, only a moderate rainfall, and there is consequently a considerable extent of shallow water or mud where usually the water is fairly deep. In particular, I have noticed several Green-shanks, and at least three Green Sandpipers. The latter always seem to rise silently (my Wood Sandpiper of last year called loudly as it rose), but they have a curious and distinctive note, which may be heard when they are flying round overhead.

So far, no strange Sandpipers have come within reach of me—except at times when I have been waiting for Ducks or Teal to be driven off one of the lochs. On such occasions I have several times seen Green Sandpipers fairly close, as well as others which it was impossible to identify; but my duties as host have always debarred me from taking advantage of the opportunity of adding to the collections in the Royal Scottish Museum, by prematurely firing my gun at what my friends might consider somewhat ignoble “game.”

On Monday, 12th August, however, *after* one of these little drives, a few Sandpipers flew past my place of concealment, two of which I shot—at very long range. The first proved to be merely a Dunlin, but the second was a bird entirely new to me, and without waiting to identify it myself, I sent it off by post at once to Mr Eagle Clarke, who informs me that it is a Broad-billed Sandpiper (*Limicola platyrhyncha*), the first record of the bird for Scotland, and the sixteenth detected occurrence of this species in the British Isles.

About the bird itself or its behaviour I can say little. It flew very rapidly past the little nook amongst high bracken in which I was concealed, and the distance was such that there was no time for making observations of any kind, if the bird was to be secured at all. I can only say that there was another bird of the same appearance along with it.

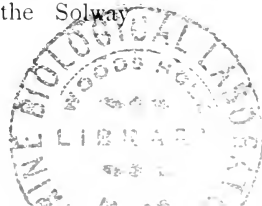
I think, but cannot of course be certain, that I saw one of the same birds on 1st August. It rose quite near me, and was entirely strange to me. I noticed particularly the dark back and the paler band across the wings formed by the light-coloured tips of the greater coverts, but it flew almost directly towards another member of my party (who did not in fact see it), and I had no opportunity of endeavouring to secure it until it was far out of range.

The Broad-billed Sandpiper has been presented to the Royal Scottish Museum.—WILLIAM BERRY, Tayfield, Newport, Fife.

**Cream-coloured Whimbrel at Barra.**—On 18th May I observed a Cream-coloured Whimbrel (*Numenius phaeopus*) on the Island of Barra. The legs, feet, and bill were the normal colour. The bird arrived with several other Whimbrel, and remained for two days on the sandhills. It stayed behind when the other birds left, and was noticed to be very thin and the plumage considerably worn.—M. BEDFORD, Woburn.

**Little Tern on the Ayrshire Coast.**—On 8th August, on the coast of Ayrshire, about five miles north of Ballantrae, I saw four Lesser Terns (*Sterna minuta*). There were two parent birds and two young (well able to fly), the former feeding the latter with small fish as they sat on the sand. I understand that these birds are not common on this coast. I shot one of the young, and am having it prepared as a museum specimen. I have never seen this bird here before, and from what I can gather from other naturalists, it has not been seen recently. On the following day I saw the parent birds and remaining young one, but I have not seen them since. In view of the increased interest now being taken in the migration of birds, I thought it might be of interest to publish this note in your pages.—MELVIN H. RATTRAY, Lendalfoot, Girvan.

**Immature Eared Grebe in Solway.**—A specimen of the Eared Grebe (*Podiceps nigricollis*) was obtained near Skinburness on 29th July last, and forwarded to me for identification. On dissection it was found to be a male. Further examination proved it to be a bird of the year, the sides of the head and neck showing very evident traces of immaturity. The occurrence of a young bird in this locality at this season of the year is exceptionally interesting, as it may be reasonably inferred that the specimen in question was bred somewhere within the Solway area.—HUGH MACKAY, Edinburgh.



**Fulmar Petrels nesting at Stronsay, Orkney.**—Having read the account in the *Scottish Naturalist* of the spread of the Fulmar Petrel, I have been on the lookout for them this spring, and about two months ago saw about a dozen of these birds circling about Burghead, a point not indicated in the map issued along with the account. On 11th July I succeeded in obtaining one of their eggs—proof positive that they are nesting here. I don't think they have ever nested here before, as none of the local men knew the egg; but some of them, who had been fishermen about twenty years ago, said that they had often seen the bird, which they call the Mollymawk, when out fishing to the eastward, but never on the land; which seems to indicate that a new colony is being started here.—T. SINCLAIR, Whitehall, Stronsay.

**Hérons nesting in Orkney.**—In Mr Boyd Watt's list of Scottish Heronries and notes of others by various correspondents, no mention is made of the Herons which nest regularly on the cliffs of Orkney and have been evidently long established there.—H. W. ROBINSON, Lancaster.

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## BOOK NOTICE.

SCIENCE OF THE SEA: Prepared by the Challenger Society; Edited by G. Herbert Fowler, B.A., Ph.D., F.L.S., etc., with Illustrations and Charts. London: John Murray. Price 6s. net.

This exceedingly interesting volume is compiled for the use of yachtsmen, officers of the Royal Navy and Merchant Service, and others, who, finding time heavy on their hands, are desirous of some useful and interesting occupation, and who yet, through lack of scientific training, hesitate to take observations or make collections which might prove of value. Written in the main by specialists who are members of the Society, the various chapters can hardly fail in their object, while to the naturalist who has no opportunity of indulging in a sea voyage they furnish exceedingly interesting reading. The first two chapters are on "The Air" and "The Water" respectively; then follow others on the Shore, the Plants, Floating Animals, the Sea Floor and Animals of the Sea Floor. Practical directions on Yacht Equipment, Dredging and Trawling,



Fishes and Fishing, and the Preservation of Marine Organisms follow in succession, while a chapter is also furnished on "Whales, Seals, and Sea-Serpents." A final chapter on "Logs, Notes, and Labels, etc.," and various useful concluding sections terminate the volume, which altogether forms one of the most useful elementary treatises on Marine Science that has ever been published. The charts, eight in number, are excellent, the illustrations clear, and the general get-up of the book all that could be desired.

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## GLEANINGS.

In the *Naturalist* for August (pp. 229-234) we note an interesting article by T. Sheppard, F.G.S., on "Early Microscopes." The instruments described date from about the year 1725 onwards, and the illustrations accompanying the article give the reader a good idea of these quaint old appliances.

In the *Field* of 22nd June (p. 1233) A. Ross expresses the opinion that the Roe Deer is much scarcer in the Northern Highlands than it was a few years ago. He attributes this to the increase of afforestation, pointing out that as the animal is very destructive to growing plantations it is shot down on certain estates in large numbers. On the higher ground, and particularly in the birch-woods, it is less disturbed, and is consequently there at its best.

On p. 1218 of the *Field* (15th June 1912) it is recorded that an Inverness taxidermist has recently mounted four Wild Cats of unusual size. They are all Ross-shire specimens, having been secured at Applecross, Braemore, Achnashellach, and Edderton respectively.

In *British Birds* for August (pp. 74-78) appears a paper entitled "The Terek Sandpiper in Kent." This is a new British Bird, and to the note recording its occurrence (by Thomas Parkin) are added a description by H. F. Witherby and an account of its distribution by F. C. R. Jourdain. Its scientific name is *Terekia cinerea*. Two specimens (a male and a female) were obtained on 23rd May last, at Brookland, Romney Marsh. On the 24th another male and on the 25th another female were obtained at the same place.

We can cordially recommend to the notice of our readers Professor D'Arcy W. Thompson's discourse on "The North Sea and its Fisheries." It was delivered at the Royal Institution on 22nd March, and is reprinted in *Nature* of 8th August (pp. 593-598). Written in the Professor's well-known picturesque and lucid style, it is well worthy of perusal by anyone interested in the history of our fisheries, the methods of fishing (on either a large or small scale), and the welfare of our fishermen. In this fascinating discourse the necessary statistics are made to tell their story in a vivid fashion. Thus it is stated that Great Britain and the other five

North Sea Powers land two million tons of fish a year; of this grand total Britain contributes more than 60 per cent.; while of the total British catch 84 per cent. is landed on the East Coast of England and Scotland. Again, when speaking of the drift-net used for herring-fishing, it is stated that in our Scotch fishery no less than two hundred million square yards of netting are used. The net "is only a narrow strip, but make it into a single square, and it would more than cover London." But to be fully appreciated the address must be read *in toto*.

At a meeting of the South London Entomological and Natural History Society held on 14th March last, Mr Blenkarn exhibited the recently described Beetle, *Haliphys nomax*, from Coatbridge (vide *Entomologist's Record*, July to August 1912, p. 200; and *Entomologist*, August 1912, p. 232).

James E. Black publishes (*Ent. Mo. Mag.*, August 1912, pp. 185-186) a short "Note on a Peculiar Form of *Notiophilus*." Three specimens are referred to, two of which were taken by the author at Peebles and the third by Col. Yerbury in Sutherlandshire. Herr Reitter pronounces the Beetle to be *bigeminus*, Th. = *pusillus*, Wat., var.

Richard S. Bagnall, in the *Entomologist's Record* (July to August 1912, p. 191) records the capture of sixteen specimens of *Hylecactus dermestoides*, L., in a log of Scotch fir on the side of Loch Lomond. Five of the Beetles were females, while the males represented the two varieties *marci*, L., and *morio*, Fab.

In the *Ent. Mo. Mag.* for August (pp. 181-185) appears the first instalment of a paper by D. Sharp, entitled "Notes on the British Species of *Ophonus*" [Coleoptera]. *O. brevicollis* is recorded from Dumfriesshire.

The concluding portion of the late G. H. Verrall's paper on "Another Hundred New British Species of Diptera" appears in the August number of the *Ent. Mo. Mag.* (pp. 190-197). The Scottish records are numerous.

In the August number of the *Entomologist* (pp. 217-220) F. W. Edwards continues his valuable "Notes on the British Mosquitoes (Culicidae)." In this instalment, *Ochlerotatus nemorosus*, Mg., is recorded from Torphins (Aberdeen), North Sutor (Cromarty), and Nethy Bridge (Inverness).

On pp. 221-223 of the *Entomologist* (August 1912) W. J. Lucas gives a summary of the British Neuroptera examined by him and captured by himself and others during the year 1911. This paper includes the Scottish records published by the same author in our last issue (pp. 186-187).

Richard S. Bagnall, F.L.S., contributes a paper on new British Myriapods to the *Zoologist* for July (pp. 264-266). In it the following Scottish records are given: *Lithobius borealis*, Mein., Ben Ledi (Evans) and Ben Vorlich.

The *Ann. Mag. Nat. Hist.* for August contains (pp. 165-185) an important paper by William Small, M.A., B.Sc., entitled "Report on the Annelida Polychæta collected in the North Sea and adjacent parts by the Scotch Fishery Board Vessel *Goldseeker*.—Part I. Amphinomidæ to Sigalionidæ." The paper is accompanied by a plate, and contains records of twenty-seven species. The descriptive and critical notes given under each form render the paper indispensable to students of British Annelids.

(Authors are responsible for nomenclature used.)



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## ABERDEEN UNIVERSITY BIRD-MIGRATION INQUIRY: FIRST INTERIM REPORT (1909-12).

By A. LANDSEBOROUGH THOMSON, M.A., M.B.O.U.

(Continued from page 174.)

### CORNCRAKE OF LAND-RAIL (*Crex crex*, L.).

CASE 249, ring A.U. 14297:—

3rd Sept. 1910: caught, marked, and released as an adult bird in a harvest field on Crichtie Farm, Inverurie, Aberdeenshire, Scotland. (Mr T. Tait.)

Sept. 1911: "killed by a sportsman" at Naillat, Canton de Dun-le-Palleteau, Creuse, France. (Mr De Forger in *Le Saint-Hubert Illustré* for 1st Oct. 1911—no more exact date than "recently" given; also the *Bulletin Mensuel de la Société Centrale des Chasseurs* for 15th Oct. 1911. English newspaper translations of these notices gave the number wrongly as 14327 and 1432F, but the originals had it correctly.)

### COOT (*Fulica atra*, L.).

CASE 309, ring A.U. 17462:—

7th May 1911: caught, marked, and released on a pond on Skipwith Common, near York, England. (Mr V. G. F. Zimmermann.)

9th Feb. 1912: found dead at Coneysthorpe, Malton, Yorkshire. (Mr W. L. Jefferson: bird's foot reported injured.)

### PARTRIDGE (*Perdix perdix*, L.).

[For records of imported birds, see "Appendix."]

PHEASANT (*Phasianus colchicus*, L.).

[See "Appendix."]

RED GROUSE (*Lagopus lagopus scoticus*, Lath.).

CASE 262, ring A.U. 559:—

24th June 1911: marked as a young bird at Mannoch, Knockando, Moray, Scotland. (Mr D. MacQueen.)

12th Sept. 1911: shot on Easter Elchies Moor (near Craigelachie), Moray. (Lord Cheylesmore.)

[See also "Appendix."]

WOOD-PIGEON OR RING-DOVE (*Columba palumbus*, L.).

CASE 79, ring A.U. 11643:—

3rd June 1910: marked as a nestling at Burgie, Forres, Moray, Scotland. (Mr A. Davidson.)

27th June 1910: shot near place of marking. (Marker.)

CASE 83, ring A.U. 11711:—

18th July 1910: marked as a nestling in the grounds of Skene House, Dunecht, Aberdeenshire. (Miss D. Hamilton.)

20th Aug. 1910: shot near place of marking. (Marker.)

MALLARD OR COMMON WILD DUCK (*Anas platyryncha*, L.).

CASE 250, ring A.U. 18427:—

21st June 1911: marked as a young bird just able to fly, on a marsh near the river Garry, Invergarry, Inverness-shire, Scotland. (Captain E. C. Ellice.)

5th Sept. 1911: shot in a cornfield on the shores of Loch Oich, Inverness-shire. (Mr W. F. Robertson: ring returned.)

CASE 272, ring A.U. 15730:—

12th June 1911: caught while in moult, marked, and released at Monymusk, Aberdeenshire. (Captain A. Grant, D.S.O.)

8th Dec. 1911 (about): shot near the river Urie, near Inverurie, Aberdeenshire. (Mr W. Williamson.)

CASE 339, ring A.U. 13127:—

30th May 1911: marked as a wild duckling at Thirlestane Castle, Lauder, Berwickshire, Scotland. (Mr A. Cossar.)

Dec. 1911: shot near Lauder. (Marker.)

[For numerous records of hand-reared Mallard, see "Appendix."]

WIGEON (*Anas penelope*, L.).

CASE 4, ring A.U. 2052:—

19th June 1909: marked as a duckling (one of a brood of

five, including also Case 118 below) at the head of Loch Brora, Sutherland, Scotland. (Mr F. Gunnis.)

3rd Sept. 1909: caught in a duck-decoy at Westpolder, Ulrum, Groningen, Holland. (Mr H. J. Louwes.)

CASE 118, ring A.U. 2050:—

19th June 1909: marked as a duckling (one of a brood of five, including also Case 4 above) at the head of Loch Brora, Sutherland, Scotland. (Mr F. Gunnis.)

2nd Jan. 1911 (about): shot on the river Trent, Nottinghamshire side, about four miles above Gainsborough, Lincolnshire, England. (Mr J. Allison.)

LONG-EARED OWL (*Asio otus*, L.).

CASE 235, ring A.U. 10356:—

10th May 1911: marked as a nestling about three weeks old at Bridge of Allan, Stirlingshire, Scotland. (Mr A. M. Anderson.)

9th Aug. 1911: shot on Alva Estate, Clackmannan, Scotland. (Mr W. Mackintosh, in *Aberdeen Free Press*, 15th Aug. 1911.)

CUCKOO (*Cuculus canorus*, L.).

CASE 251, ring A.U. 18307:—

30th June 1911: marked as a nestling which had been reared by a pair of Linnets (*Carduelis cannabina*, L.) at Coddington Hall, Newark, Nottinghamshire, England. (Mr H. Mackender.)

2nd Sept. 1911: shot on the Sea Bank at Fishloft, Boston, Lincolnshire, England. (Mr E. Hibbins.)

JACKDAW (*Colinus monedula*, Vieill.).

CASE 87, ring A.U. 13202:—

17th June 1910: marked as a nestling at the Manse, Kingussie, Inverness-shire, Scotland. (Mr A. Campbell.)

22nd Aug. 1910: captured with left wing injured at Carnchuine, Kingussie; released after recovering from injuries, 18th Sept. 1910. (Mrs E. H. Whitehead.)

CASE 207, ring A.U. 5355:—

21st May 1910: marked as a nestling about a week old among the Dunragit sandhills, Wigtownshire, Scotland. (Mr J. N. Kennedy.)

14th June 1911 (about): shot near Stranraer, Wigtownshire.  
(*Glasgow Herald*, 17th June 1910.)

CASE 214, ring A.U. 13201:—

11th June 1910: caught in clap-net, marked, and released at Newtonmore, Inverness-shire, Scotland. (Mr A. Campbell.)

20th June 1911: shot at Banchor, Newtonmore. (Mr C. Dods: ring returned.)

STARLING (*Sturnus vulgaris*, L.).

CASE 29, ring A.U. 8204:—

15th March 1910: caught in net (along with Case 55 below), marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

20th April 1910: recaptured in net at same place, and released. (Marker.)

CASE 55, ring A.U. 8205:—

15th March 1910: caught in net (along with Case 29 above), marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

18th March 1910: recaptured in net at same place, and released. (Marker.)

CASE 56, ring A.U. 8207:—

16th March 1910: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

20th June 1910: found dead (slightly decomposed) in Warriston Cemetery, Edinburgh. (Mr Wilkie, through Mr J. Horne.)

CASE 133, ring A.U. 8242:—

11th April 1910: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

2nd Feb. 1911: recaptured in net at same place. (Marker.)

CASE 170, ring A.U. 14878:—

13th Jan. 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

20th Feb. 1911: recaptured at same place, and released. (Marker.)

CASE 171, ring A.U. 14864:—

29th Nov. 1910: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

21st Feb. 1911: recaptured at same place, and released. (Marker.)

CASE 185, ring A.U. 365A:—

- 2nd Feb.* 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)  
*15th March* 1911: recaptured at same place, and released. (Marker.)

CASE 196, ring A.U. 6623:—

- 11th Feb.* 1910: caught in net, marked, and released at 11 College Bounds, Old Aberdeen, Aberdeenshire. (Mr L. N. G. Ramsay.)  
*15th April* 1911: found dead (having come down the chimney of the meeting house of the "Society of Friends") at Kinmuich, near Inverurie, Aberdeenshire. (Mr J. Ritchie: ring returned.)

CASE 197, ring A.U. 8247:—

- 20th April* 1910: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)  
*26th April* 1911: killed by a cat at The Hawthorns, Bonnington, Edinburgh. (Miss A. Ramage: ring returned.)

CASE 200, ring A.U. 6571:—

- 13th Jan.* 1910: caught in net, marked, and released at 11 College Bounds, Old Aberdeen. (Mr L. N. G. Ramsay.)  
*7th May* 1911: found dead (slightly decomposed) at Pittodrie Park, Aberdeen. (Bird and ring brought to Marischal College.)

CASE 202, ring A.U. 16316:—

- 11th Feb.* 1911: caught in net, marked, and released at 46 Don Street, Old Aberdeen. (Mr A. G. Davidson.)  
*25th May* 1911 (about): found dead in a loft in Don Street, Old Aberdeen. (Mr D. Thomson, through Mr J. Clarke, M.A.)

CASE 206, ring A.U. 8602:—

- 24th April* 1911: caught, marked, and released at Golspie, Sutherland, Scotland. (Mr E. W. Read.)  
*8th June* 1911: found in a dying condition at Golspie gas-works. (Mr D. Macdonald.)

CASE 208, ring A.U. 171B:—

- 26th Dec.* 1910: caught in net, marked, and released at Seton Lodge, North Berwick, East Lothian, Scotland. (Mr A. Campbell.)  
*10th June* 1911: recaptured at North Berwick. (Mr W. Elliot.)

CASE 218, ring A.U. 16480:—

20th *March* 1911: caught in net, marked, and released at East Warriston House, Edinburgh, Scotland. (Mr A. Campbell.)

20th *April* 1911: killed by cat on the farm Drage, Saltdalen, Norway (above the Arctic Circle). (Mr A. Flemsæter: number first given as 16486, but correct figures and the ring itself sent later; number also wrong in a newspaper cutting sent by Dr T. Heiberg to the editor of *The Field* and forwarded through Mr H. F. Witherby.)

CASE 237, ring A.U. 20223:—

12th *June* 1911: marked as a fully grown nestling (same brood as Case 238 below) at Curtlemead, Beaulieu, Hampshire, England. (Dr P. Gosse.)

*July* 1911: found dead near same place. (Ring brought to marker.)

CASE 238, ring A.U. 20229:—

12th *June* 1911: marked as a fully grown nestling (same brood as Case 237 above) at Curtlemead, Beaulieu, Hampshire, England. (Dr P. Gosse.)

*July* 1911: found dead near same place. (Ring brought to marker.)

CASE 240, ring A.U. 14883:—

28th *Jan.* 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

1st *July* 1911: recaptured at same place, and released. (Marker.)

CASE 242, ring A.U. 15238:—

25th *May* 1911: marked as a nestling in the Beechwalk, Skene House, Dunecht, Aberdeenshire. (Miss D. Hamilton.)

12th *July* 1911: found dead (decomposed) in an outbuilding at Skene House. (Marker.)

CASE 246, ring A.U. 8536:—

20th *Jan.* 1910: caught in net, marked, and released at 11 College Bounds, Old Aberdeen, Scotland. (Mr L. N. G. Ramsay.)

20th *Aug.* 1911 (about): remains found (bird killed by a bird of prey) near Kvarv i Salten, Norway (above the Arctic Circle). (Mr Nils Lie, to whom the ring was brought by a scholar.)



CASE 273, ring A.U. 16317:—

11th Feb. 1911: caught in net, marked, and released at 46 Don Street, Old Aberdeen. (Mr A. G. Davidson.)

11th Dec. 1911: found dead in Great Northern Road, Aberdeen. (Mrs Roy.)

CASE 290, ring A.U. 6619:—

10th Feb. 1910: caught in net, marked, and released at 11 College Bounds, Old Aberdeen. (Mr L. N. G. Ramsay.)

4th Dec. 1911: caught in net at 46 Don Street, Old Aberdeen, and released. (Mr A. G. Davidson.)

CASE 308, ring A.U. 167B:—

24th Dec. 1910: caught in net, marked, and released at Seton Lodge, North Berwick, East Lothian, Scotland. (Mr A. Campbell.)

6th Feb. 1912: caught at 67 Angus Street, West Hartlepool, Co. Durham, England, and released. (Mr C. Wright.)

CASE 310, ring A.U. 15347:—

1st July 1910: marked as a nestling at Balbithan House, Kintore, Aberdeenshire. (Mr W. S. Meston.)

12th Feb. 1912: found at Kintore. (Mr A. Reid.)

CASE 314, ring A.U. 18897:—

4th Feb. 1912: caught in trap, marked, and released at Beaulieu, Hampshire, England. (Dr P. Gosse.)

20th Feb. 1912 (about): shot on the outskirts of Portsmouth, Hampshire. (Cutting from *Portsmouth Evening News* sent by Mr J. G. Bryson.)

CASE 339, ring A.U. 16930:—

3rd April 1912: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

6th April 1912: recaptured in net at same place. (Marker.)

CASE 340, ring A.U. 16931:—

3rd April 1912: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

17th April 1912: recaptured in net at same place. (Marker.)

SWALLOW (*Chelidon rustica*, L.).

CASE 15, ring A.U. 4498:—

29th June 1909: caught, marked, and released as an adult bird at Harwarden Farm, Rusthall, Kent, England. (Mr E. C. B. Parsons.)

14th June 1910: recaptured at the same farm, and released. (Marker.)

CASE 201,<sup>1</sup> ring A.U. 7024:—

21st Aug. 1910: marked as a nestling about eleven days old at Durris, Kincardineshire, Scotland. (Mr A. G. Davidson.)

22nd May 1911: found with a broken wing in a byre at Darnford, Durris. (Mr Duguid, through Mr A. Macdonald.)

CASE 257, male, ring A.U. 671M:—

15th July 1911: marked as a nestling at Wyllieholes, Cornhill, Banffshire, Scotland. (Mr J. Simpson.)

3rd Sept. 1911: found dead in the yard of Scott's Mill, Portsoy, Banffshire. (Mr J. Watt: sex of bird ascertained by dissection.)<sup>2</sup>

MEADOW PIPIT (*Anthus pratensis*, L.).

CASE 275, ring A.U. 985B:—

20th Sept. 1911: caught, marked, and released near Bromford, Warwickshire, England. (Mr T. Malpas: the bird was a young male of the year, according to the marker, who has had thirty years' experience of bird-catching and is confident of being able to judge this from outward appearance.)

7th Dec. 1911 (about): shot near Lisbon, Portugal. (Mr J. da Silva Santos: no exact date, but the leg and ring were brought on 9th December to the office of the newspaper *Seculo*, a cutting from which was sent to us by Mr W. C. Tait.)

YELLOWHAMMER (*Emberiza citrinella*, L.).

CASE 216, female, ring A.U. 58H:—

25th July 1910: caught in a trap, marked, and released at Inverurie, Aberdeenshire. (Mr W. W. Nicol.)

3rd July 1911: killed by a cat at the same place. (Marker.)

[See also "Appendix" for records of an escaped cage-bird of this species.]

<sup>1</sup> This Case has been inadvertently quoted under STARLING by the authors of the *Report on Scottish Ornithology in 1911*, p. 26.

<sup>2</sup> [It seems advisable to make a second exception to our rule of not including imperfect records, inasmuch as the following case has already received considerable publicity. In *The Spectator* for 15th June 1912, Mr W. D. Knight reported that at Slinford, Horsham, Sussex, England, he caught, and subsequently released, a swallow bearing a ring inscribed "Aberdeen U.N.M. 759." The three letters were doubtless merely a misreading of the word "Univ," and there was no "M" on the ring at all—certainly it was not ring "A.V. 759 M," nor was it "759" alone, so a figure must have been overlooked. Probably it was either "7596" or "7597," which were swallows marked as nestlings at Slinford on 29th June 1911; but the case cannot be regarded as scientifically established.]

(To be continued.)

## ON THE OCCURRENCE OF THE LITTLE OWL IN FIFE.

By ROBERT SOMERVILLE, B.Sc.

A FEW years ago the Dunfermline Naturalists' Society instituted a Natural History Museum, which has so far been run on unpretentious lines. But while the limited resources of the Society have prevented it from launching out on any ambitious scheme, the advantages enjoyed by Dunfermline may make it possible for the town to be in possession in the near future, it is hoped, of a museum in which the Natural History of the Forth basin will be represented much in the same way as that of the Tay Valley in the Perth Museum. A fair collection has been brought together in these few years, and there is a goodly number of local birds and Lepidoptera, thanks to the enthusiasm of the curator.

What is regarded as the gem of the collection is a specimen of the Little Owl (*Athene noctua*, Scopoli), which is believed to be the first admissible record of this bird in Scotland. It was captured by some gentlemen who were out rabbit-shooting at East Grange, a place about six miles to the west of Dunfermline, on 9th November 1910. The bird was first observed clinging to the bark of a tree, and on taking flight it was shot without any of the party knowing what it really was. As a matter of fact it was by the merest chance that the specimen found its way to the Museum, one of the gentlemen who takes an interest in the institution thinking to present another donation in the shape of a "young owl." The wily curator agreed that it was a fine young owl, and promptly forwarded it to Small & Son, Edinburgh, who had it nicely stuffed and mounted. The bird is a male, and in size and markings agrees very closely with the description given in Howard Saunders' *Manual of British Birds*, to which those specially interested are referred. For the information of the general reader it may be of interest to state that the specimen is 9 ins. long, with a wing 6 ins. in length. The Little Owl is

distinguished from other owls by the fact that the toes are covered with hairy bristles and not with feathers. The bird is to be seen flying about during the day, mobbed as a rule by small birds (not so with the Dunfermline specimen), and for this reason is used as a decoy by continental bird-catchers.

The Little Owl is not a native of Britain. Large numbers of the bird have been introduced from the Continent and from time to time liberated in several English counties. They are known to breed there freely, so that it is impossible to say whether any of those found have been really wild. It appears that one was got near Aberdeen some years ago, but it was supposed to have been an "escape."<sup>1</sup> The difficulties indicated make it impossible to assert with confidence that the Dunfermline specimen was a genuine visitor; at the same time there is no information that would lead one to believe that the bird had been introduced. In any event, the capture is worth recording in the pages of the *Scottish Naturalist*.

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A LIST OF THE DIPTERA MET WITH IN  
WESTER ROSS, WITH NOTES ON OTHER  
SPECIES KNOWN TO OCCUR IN THE  
NEIGHBOURING AREAS.

By COLONEL J. W. YERBURY, R.A., F.Z.S.

I AM not clear as to the southern boundary of this division, but I have assumed the district to be the whole of the watershed draining to the westward from the Kyles of Loch Alsh on the south to Cape Wrath on the north; few people have collected Diptera in it, the only collectors I have been able to trace being the late Mr G. H. Verrall, who worked Inchnadamph, Loch Maree, and Gairloch, and Mr Ogilvie Grant, who collected at Kinlochewe and Gairloch, and whose captures have been presented to the Natural History Museum at South Kensington. Mr Verrall, in

<sup>1</sup> Cf. Sim's *Vert. Fauna of Dee*, 1903, pp. 122 and 295.

various papers on Diptera, records many species from Inchnadamph, Loch Maree, etc., though generally his localities are vague, such as "Land's End to Sutherland," etc. Luckily some of these localities can be definitely run down, as many of the specimens are to be found in the British Collection at the Natural History Museum.

My own collecting in the district was confined to two localities—Lochinver and Inchnadamph, and at these two places I collected steadily during the months of June and July 1911. The idea of making out a list of my captures only came as an afterthought, so many more or less common species were allowed to slip through my hands unrecorded.

Wester Ross is not a rich district, and its comparative poverty may be traced to various causes, the most important being probably the want of woods, accompanied as that is by a lack of variety in the local timber, consequently many groups of species are badly represented, *e.g.*, the frequenters of felled logs and broad-leaved trees. The absence of sand-dunes may account for the absence of many species of Therevidæ, Anthomyidæ, and Pipunculidæ; while the local bogs do not appear to be of the attractive character of those of Strathspey, Nairn, and Rannoch. Sutherland, however, offers an interesting peculiarity in its dipterous fauna, and that is the apparent isolation at Lochinver and Golspie of colonies of southern species—species which as a rule had been left behind far to the southward, and of which the following may be cited as examples:—

LOCHINVER:—i. *Chrysops relictus* (Nairn); ii. *Isopogon brevirostris* (Rannoch); iii. *Helophilus lunulatus* (New Forest); iv. *Phortica alboguttata* (New Forest).

GOLSPIE:—i. *Brachyopa bicolor* (Herefordshire); ii. *Chrysochlamys cuprea* (Nairn); iii. *Rhingia campestris*, etc., etc.

I am indebted to the following gentlemen for much kind assistance in the working out of this collection, viz.—to Mr Austen, for aid in the Muscidæ and Tachinidæ; to Mr Edwards, in the Nematocera; and above all to Mr Collin, who has checked my identifications, and in many cases

compared my specimens with those in the collection of the late Mr G. H. Verrall.

## ORTHORRAPHA NEMATOCERA.

### CECIDOMYIDÆ.

1. *Hormomyia* sp., Loch Assynt, 26th July 1911.

### MYCETOPHILIDÆ.

2. *Sciara* sp., Loch Assynt, 5th June 1911.
3. *S.* sp., Loch Assynt, 24th July 1911.
4. *Mycetophila lineola*, Mg., Loch Assynt, 3rd and 17th June 1911.
5. *M. marginata*, Winn., Lochinver, 22nd June 1911.
6. *Trichonota* sp., Lochinver, 11th July 1911.
7. *Exechia spinigera*, Winn., Loch Assynt, 10th June 1911.
8. *E.* sp. inc., Loch Assynt, 17th June 1911.
9. *Allodia ornaticollis*, Mg., Loch Assynt, 7th and 17th June 1911.
10. *A. crassicornis*, Stan., Lochinver, 8th July 1911.
11. *Rhymosia cristata*, Staeg., Inveran, 14th July 1886 (Verrall).
12. *Brachycampta* sp. inc., Lochinver, 19th July 1911.
13. *Phronia tenuis*, Winn., Loch Assynt, 17th June 1911.
14. *P. signata*, Winn., Inveran (Verrall).
15. *P.* sp. inc., Loch Assynt, 18th June 1911.
16. *P.* sp. inc., Loch Assynt, 17th June 1911; Lochinver, 8th July 1911.
17. *P. forcipula*, Winn., Inveran (Verrall).
18. *Acenemia nitidicollis*, Mg., Lochinver, 7th July 1911.
19. *Anaclinia nemoralis*, Mg., Loch Assynt, 8th June 1911.
20. *Boletina trivittata*, Mg., Lochinver, 23rd June 1911, 30th June 1911; Loch Maree (Verrall); Tongue (Verrall).
21. *B. sciarina*, Staeg., Loch Assynt, 3rd June 1911; Lochinver, 7th July 1911.
22. *B. humeralis*, Walk.?, Loch Assynt, 3rd June 1911.
23. *B. analis*, Mg.?, Lochinver, 9th and 13th July 1911.
24. *Polylepta undulata*, Winn., Loch Assynt, 19th July 1911; Lochinver, 26th June 1911.
25. *Lasiosoma* sp. inc. (near *robusta*), Lochinver, 29th June 1911.
26. *Sciophila* sp. inc., Lochinver, 25th and 27th June 1911.
27. *S.* sp. inc., Lochinver, 23rd June 1911; Loch Assynt, 5th June 1911.
28. *S. lucorum*, Winn.?, Lochinver, 30th June 1911.

29. *Macrocera lutea*, Mg., var.?, Loch Assynt, 17th June 1911; Lochinver, 24th June and 11th July 1911.
30. *M. pusilla*, Mg., Loch Assynt, 3rd, 5th, and 17th June 1911.
31. *M. vittata*, Mg., Lochinver, 23rd June 1911.
32. *M. centralis*, Mg., Lochinver, 27th June and 5th July 1911.
33. *M. stigma*, Curt., Lochinver, 23rd June 1911.

BIBIONIDÆ.

34. *Scatopse inermis*, Ruthé, Lochinver, 27th June 1911; Gairloch (Verrall).
35. *Dilophus albipennis*, Mg., Loch Assynt, 11th June 1911.
36. *Bibio pomonæ*, F., Loch Assynt, 20th July 1911; Kylesku, 5th July 1911.

SIMULIIDÆ.

37. *Simulium ornatum*, Mg., Loch Assynt, 11th June and 20th and 24th July 1911.
38. *S. reptans*, L., Lochinver, 30th June 1911 (troublesome; biting forehead); Lochinver, 7th July 1911, flying in company with a flock of *Hydrotæa irritans*; Loch Assynt, 23rd July 1911, swept from flowers of yellow saxifrage?
39. *S. latipes*, Mg., Loch Assynt, 2nd June to 18th July 1911; swept in numbers, 17th June 1911.
40. *S. sp. inc.* (femora yellowish), Loch Assynt, 5th June 1911.

CHIRONOMIDÆ.

41. *Cricotopus tremulus*, L., Loch Assynt, 10th June and 21st July 1911; Inchnadamph (Verrall).
42. *Tanytus lentiginosus*, Fries, Inveran (Verrall).
43. *Ceratopogon (Palpomyia) flavipes*, Mg., Lochinver, 7th July 1911.
44. *C. (Palpomyia) lineata*, Mg., Lochinver, 27th June 1911.
45. *C. (Palpomyia) sp. inc.* (scutellum yellow, legs yellowish, femora black-tipped), Lochinver, 20th June 1911.
46. *C. (Serromyia) femorata*, Mg., Loch Assynt, 1st, 2nd, and 18th June 1911.
47. *C. (Johannseniella) sp. inc.* (scutellum yellow, fore and hind legs ochreous) — may be *flaviscutellata*, Zett.—Loch Assynt, 19th July 1911.
48. *C. (Culicoides) obsoletus*, Mg., Loch Assynt, 5th June 1911.



Lochinver, 20th June 1911, caught "red handed." These specimens agree with the identification of *C. obsoletus*, at the British Museum, but are not the same as *C. arcuatum*, Winn., this synonymy therefore seems to require revising.

49. *C. (Culicoides) varius*, Winn., Loch Assynt, 2nd June 1911, caught "red handed."  
 50. *C. (Culicoides) pulicaris*, L., Loch Assynt, 5th June 1911, "red handed."

It is interesting to note that all the specimens of *Ceratopogon* caught "red handed" belong to the sub-genus *Culicoides*.

#### ORPHNEPHILIDÆ.

51. *Orphnephila testacea*, Ruthé, Loch Assynt, 7th, 18th, and 21st June 1911.

#### PSYCHODIDÆ.

52. *Pericoma mutua*, Eat., Loch Assynt, 6th June 1911—the only specimen of the family brought away, though many specimens were seen.

#### CULICIDÆ.

Although no specimen of this family was met with, still the inhabitants were full of tales of a "musquito" said to have been recently introduced. The species, however, is probably some old, well-known, and widely distributed one.

#### TIPULIDÆ.

53. *Dixa maculata*, Mg., Loch Assynt, 11th June and 19th July 1911.  
 54. *Ptychoptera scutellaris*, Mg., Loch Assynt, 11th, 18th, and 20th June 1911, 20th and 26th July 1911; very common.  
 55. *Limnobia quadrinotata*, Mg., The Mound, 16th August 1900 (B.M.).  
 56. *L. flavipes*, F., Inveran (Verrall).  
 57. *Dicranomyia aquosa*, Verr., Inveran (Verrall).  
 58. *D. mitis*, Mg., Loch Assynt, 1st and 17th June 1911; common.  
 59. *D. chorea*, Mg., Inchnadamph, 1st June 1911.  
 60. *D. stigmatica*, Mg., Kinlochewe, 22nd and 23rd June 1892 (Grant), B.M.; Tongue (Verrall).



61. *D. didyma*, Mg., Sutherland (Verrall).
62. *D. dumetorum*, Mg., Golspie, 5th and 7th August 1900.
63. *D. morio*, F., Loch Assynt, 1st, 10th, and 11th June 1911.
64. *Orimarga virgo*, Zett., Loch Assynt, 11th June 1911. Mr Verrall found this species in numbers on a damp spot on the banks of the river Tarrigall; I believe I found the exact locality, but the above was the only specimen met with, though the place was carefully worked both by sweeping and searching. It was here too that Mr Verrall took *Oxycera nigripes*, a species that was also absent, though it occurred in abundance on the burn running down from Ardumore, barely two miles off.
65. *Antocha opalizans*, O. Sack., Inveran (Verrall); Tongue, June 1884 (Verrall).
66. *Goniomyia tenella*, Mg., Loch Assynt, 1st and 11th June 1911.
67. *Molophilus appendiculatus*, Staeg., Sutherland (Verrall).
68. *M. propinquus*, Egg., Loch Assynt, 3rd June 1911; Lochinver, 21st June 1911; Loch Maree (Verrall).
69. *M. biflatus*, Verr., Loch Maree (Verrall).
70. *M. obscurus*, Mg., Lochinver, 29th June 1911 (only specimen); Inchnadamph, 20th July 1886 (Verrall).
71. *M. murinus*, Mg., Loch Assynt, 1st June 1911: part of flock hovering in shade of a mountain ash.
72. *Rhypholophus nodulosus*, Macq., Loch Assynt, 2nd June and 19th July 1911.
73. *R. similis*, Staeg., Inveran (Verrall).
74. *Erioptera tenionota*, Mg., Loch Assynt, 1st June 1911; also recorded by Verrall.
75. *E. fuscipennis*, Mg., Loch Assynt, 1st, 11th, and 18th June 1911, and 24th July 1911; recorded by Verrall from Tongue.
76. *E. trivialis*, Mg., Inchnadamph, 20th July 1884 (Verrall).
77. *E. flavescens*, Mg., Inveran (Verrall).
78. *Lipsothrix errans*, Walk., Inveran (Verrall).
79. *Ephelia apicata*, Lw., Inveran (Verrall).
80. *E. submarmorata*, Verr., Loch Maree (Verrall).
81. *E. marmorata*, Mg., Loch Assynt, 3rd and 7th June 1911, and 26th July 1911.
82. *E. miliaria*, Egg., recorded by Verrall from Inchnadamph.
83. *Dactylolabis frauenfeldi*, Egg., Loch Assynt, 1st June 1911 (only specimen).
84. *Epiphragma picta*, F., Loch Assynt, 6th June 1911; only specimen.

85. *Limnophila meigenii*, Verr., Loch Assynt, 1st June 1911; also recorded by Verrall from Inchnadamph.
86. *L. ferruginea*, Mg., Loch Assynt, 11th and 12th June 1911; Sutherland (Verrall).
87. *L. lineolella*, Verr., Inveran (Verrall).
88. *L. aperta*, Verr., Sutherland (Verrall).
89. *L. bicolor*, Mg., Sutherland (Verrall).
90. *L. ochracea*, Mg., Inveran (Verrall).
91. *L. discicollis*, Mg., Inchnadamph (Verrall).
92. *L. filata*, Walk., Loch Assynt, 11th June 1911; Loch Maree (Verrall).
93. *Amalopsis littoralis*, Mg., Inveran (Verrall).
94. *A. immaculata*, Mg., Loch Assynt, 2nd June 1911.
95. *Pedicia rivosa*, Loch Assynt, 26th July 1911; rare.
96. *Dolichopeza sylvicola*, Curt., Tongue (Verrall).
97. *Pachyrrhina histrio*, F., Golspie.
98. *P. annulicornis*, Mg., Loch Assynt, 2nd and 5th June 1911; Inveran (Verrall).
99. *Tipula obsoleta*, Mg., Kinlochewe, 23rd June 1892 (Grant), B.M.
100. *T. rufina*, Mg., Loch Assynt, 1st June 1911; Kinlochewe, 23rd June 1892 (Grant), B.M.; Inveran (Verrall).
101. *T.* sp. inc., near *scripta*, Mg., Loch Assynt, 17th June 1911. Typical *T. scripta* is recorded by Verrall from Sutherland.
102. *T. pruinosa*, Wied., Kinlochewe, 23rd June 1892 (Grant), B.M.
103. *T. melanoceras*, Schum., Inveran (Verrall).
104. *T. variipennis*, Mg., Tongue (Verrall).
105. *T. lutescens*, F., Lochinver, 23rd June 1911.

(To be continued.)

THE BRITISH SPECIES OF THE DIPTEROUS  
GENUS *FANNIA*, ROB. DSV.

By J. R. MALLOCH.

(Concluded from page 209.)

27. *similis*, Stn., ♂. Black-grey; eyes nearly confluent, frons and jowls hardly projecting; antennæ shorter than face, third joint hardly twice the second; arista bare; thorax somewhat shining, sides and dorsum behind more distinctly dusted; abdomen broader, and behind less pointed than in *sociella*, dorsal line narrow, not dilated on the segments; anal organ small; legs black, knees and base of fore tibiæ more or less yellow; mid femora as in *sociella* but not so distinctly thickened, the antero-ventral surface with a row of nine bristles to beyond the middle, the first three weak, the next four longer and stronger, the last three short but strong, followed by a row of about twelve short, nearly equal bristles close together without a break to the tip; the postero-ventral row longer and more equal in size to the constricted portion of the femora, a shorter row on that part; mid tibiæ gradually thickened, pubescence fairly long at the base, and increasing in length to the middle, of equal length from middle to tip, bristling normal; hind femora as in *sociella*, tibiæ with the usual four bristles; in other respects as *sociella*, but the last portion of the fourth vein about three times the penultimate.

♀. Stein says that the ♀ is similar to that of *sociella*, except that the middle stripe is about twice as broad as the orbits at its narrowest part, and the lower fronto-orbital bristle is nearer to the eye-margin than to the middle stripe. 5 mm.

I have received this from Mr A. E. J. Carter, Musselburgh, 29th June 1905. May be separated from *serena* by the larger size, broader shape, greyer colour, and stronger antero-ventral bristles on mid femora.

28. *postica*, Stn., ♂. Black, shining; eyes narrowly separated; frons and jowls hardly projecting; antennæ of moderate

length, arista bare; thorax black, rather shining, slightly dusted with grey; abdomen distinctly pale grey dusted, dorsal line distinct, dilated on each segment, anal organ moderately large; legs black, fore knees hardly paler; mid femora with a row of about ten bristles on the basal two-thirds, the last three closer and shorter but stronger, a row of about eight short bristles on the base of the apical third, and near the tip three or four weaker bristles; postero-ventral row somewhat similar but longer; mid tibia thickened on the apical half, pubescence increasing in length from near the base to tip, bristling normal; hind femora with a row of bristles, about nine, from before the middle to the tip increasing greatly in size as they advance, a somewhat similar row of rather finer bristles on the postero-ventral surface; hind tibia with the usual four bristles; wings brownish, last portion of fourth vein about two and three-fourths the penultimate; calyptra brownish or yellowish, equal; halteres yellow.

♀. Very close in general appearance to the ♀ of *serena* and *parva*. From the former it differs in having the orbits entirely pale grey dusted and without any perceptible gloss behind; from *aërea* it differs in having the middle stripe much less distinctly dusted when seen from in front, the basal ventral mid femoral bristle is present; the thorax is black-grey; the acrostichal bristles are two-rowed; the lower fronto-orbital bristle is nearer the eye-margin than it is to the middle stripe; and the orbits are at least as broad as the middle stripe at its narrowest part; otherwise as the ♂, except that there are only two long bristles at the tip of the hind femora, antero-ventral side. (Stein does not describe the ♀, but his ♀ of *parva* is very close to this. I have not been able to obtain this species for comparison.)

3 to 4 mm.

A very common species at Bonhill and Cardross; May to August. The ♀ described was one of two pairs taken in cop. I have also seen this species from Aberlady (Carter), New Forest (Adams), and Oxford (Hamm.).

29. *serena*, Fln., ♂. Very similar to the foregoing, differing principally in the bristling of the mid and hind femora; the antero-ventral row on the former has at most five or six long widely placed rather weak bristles on the basal half and a continuous row of about twelve on the apical, of much weaker, shorter bristles, those on the constricted part of the femora being the shortest; the mid tibia is much as in *postica*, but

rather less thickened apically; the hind femora have on the antero-ventral surface a row of short bristles, the last three being the strongest; the postero-ventral surface is bare; all otherwise as *postica*, but rather larger.

♀. Easily separated from *postica* and the other equal-sized species by the orbits being perceptibly shining on the upper half; entirely shining black, slightly dusted; legs black, knees slightly yellowish; bristling normal.  $3\frac{1}{2}$  to 4 mm.

Quite the commonest outdoor species in the group, occurring everywhere.

## NOTES.

**Hedgehog in Argyll.**—I am not well versed in the Mammalia of Argyll, but I take it from the note in the September *Scottish Naturalist* (p. 209) that the Hedgehog is considered rare in that county. I may mention that while camping at Portavadie, Loch Fyne, in August 1906, we caught a Hedgehog which made its way into our marquee in search of eatables.—CHARLES A. HALL, Meiklerigg, Paisley.

**Cuckoo reared by Rock-Pipits at Ailsa Craig.**—Ascending Ailsa Craig by the Castle road and traversing the flat on which this ruin stands, the road (or more truly goat-track) leads over a series of ledges that seem cut in turf and solid rock, and bear the name of Mochrum's Steps; on scaling these there is another flat in the heart of which is a delightful little ravine where brackens and bladder-campion grow luxuriantly. Resting here 500 feet above sea-level (on the 14th of July last), I was attracted by a bird sitting on the cliff edge, on a rock that is usually occupied by Puffins—on looking through my field-glasses I saw it was a young Cuckoo (*Cuculus canorus*). It was only able to make short and somewhat unsteady flights, and later I saw the foster-parents, viz., Rock-Pipits (*Anthus obscurus*), sufficient proof that it was reared on the rock. Mr Thomson, principal light-keeper, tells me he hears the Cuckoo's note annually on Ailsa Craig in spring, but I do not know of any previous records of its having bred there.—CHARLES KIRK, Glasgow.

**Lapland Form of Bluethroat on the Isle of May.**—In view of the fact that in the *Hand-list of British Birds* published this year the Bluethroats occurring in Britain are referred to the subspecies which breeds in Norway (*Luscinia suecica gaetkei*), it is interesting to note that the Bluethroat procured by us on the Isle of May on 14th September 1909 (see *Ann. Scot. Nat. Hist.*, 1910, p. 4) has proved to belong to the form breeding in Lapland, etc., namely, *Luscinia suecica suecica*. When examining our Bluethroat skins we were struck by its shorter and less pointed wing and lighter upper parts, and believing it to belong to the more eastern form, sent it to Dr Hartert for confirmation of our identification. He writes that after careful comparison he quite believes it to be an example of *Luscinia suecica suecica*. We are much indebted to him for his kindness in helping us.—LEONORA JEFFREY RINTOUL and EVELYN V. BAXTER, Largo.

**The Tree-Sparrow Breeding in Midlothian.**—Though there are several winter records of the Tree-Sparrow (*Passer montanus*) in Midlothian, there appears to be none hitherto of its breeding in the county. It was, therefore, no little satisfaction to me to discover, on 24th May this year, a colony nesting in holes in the walls of a ruin at Craiglockhart, near Edinburgh. I made out no less than ten pairs feeding young in the nests, from one of which I obtained an addled egg. During the last few years I have noticed Tree-Sparrows about Craiglockhart in winter on more than one occasion, so that it is quite likely they have been established there for some time.—WILLIAM EVANS.

**Variety of Heron in Wigtownshire.**—On the 14th September, on a moor in Wigtownshire, I had an opportunity of observing at very close quarters a Heron (*Ardea cinerea*) which when at rest appeared almost wholly white. There were, however, some very pale buff markings, which were probably centres to some of the feathers. In flight the whole of the primaries, secondaries, and the tail were seen to be a dull chocolate brown, quite evenly marked. Legs and bill were yellow.—M. BEDFORD, Cairnsmore, Palmure.

**Marked Grouse—Identification wanted.**—I have heard from Lord Henry Scott that on Friday, 30th August, at the County March, Roxburghshire and Dumfriesshire, by Tinnis Hill, a Grouse was shot marked L H S—1911—91. I shall be much obliged if you can arrange for the insertion of a paragraph to the above effect

in the *Scottish Naturalist*, in case we may thereby be able to identify the bird.—A. S. LESLIE, Edinburgh.

**Black-tailed Godwit in the Outer Hebrides.**—A specimen of the Black-tailed Godwit (*Limosa limosa*, L.) was killed on the 31st August 1912, by a young shore-shooter, on Broadbay, near Stornoway.—D. MACKENZIE, Stornoway.

[The specimen has been kindly presented by Mr Mackenzie to the Royal Scottish Museum.—EDS.]

**Sabine's Gull in the Firth of Forth.**—When returning from the Isle of May on 13th September (1912), I had the pleasure of watching for some minutes a young Sabine's Gull (*Xema sabini*), flying close to the steamer just outside Leith Harbour. We were about a quarter of a mile off the entrance to the harbour when I first noticed the bird; it was then not more than 50 to 60 yards from the ship, and maintained much the same position for some time as we proceeded to Granton Harbour, thus affording me an excellent view of it through binoculars. On our turning into Granton, it continued its course towards the Forth Bridge. There was no mistaking the bird, the characteristics of which—forked tail, dark ashy-brown back, black outer edge of the wings, and tern-like flight—I pointed out to Mr Kelsey, of the North Carr Lightship, who was standing beside me. This is the third occasion on which I have had the good fortune to see this rare gull in the Firth of Forth, the present being, however, a long way farther up the estuary than the previous records.—WILLIAM EVANS.

**Fulmars Breeding at Reawick, Shetland.**—When in Shetland this June, I found a small colony of Fulmars breeding on the Noup of Reawick, on the mainland of Shetland. As this locality is not included in Mr Harvie-Brown's interesting paper on the Fulmar, recently published in the *Scottish Naturalist*, I thought it might be worth recording. I saw eight nests, but I rather suspect there were more, which I could not see, owing to the formation of the rock.—ALASTAIR D. CARMICHAEL, Dundee.

**Tunny in Shetland.**—On Saturday last (31st August) a huge Tunny (*Thunnus thynnus*), somewhere about 8 ft. long, was shot by some fishermen in the north Harbour of Lerwick. It must have weighed several cwts., and had evidently lost its reckoning. A specimen has been caught in Shetland before, but how long ago I am unable to say. The fish was sent to Aberdeen on Saturday night.—JOHN S. TULLOCH, Lerwick.

**Large Sunfish in the Forth.**—It will probably interest your readers to hear that a Sunfish (*Mola mola*, L.) of unusually large size, came ashore at Kincaig, a few miles west of Elie, during the heavy weather at the beginning of September. Its principal measurements were: from nose to tail, 5 ft. 7 ins.; from tip to insertion of each fin, 2 ft.; between tips of fins, 6 ft. 6 ins.; greatest girth, 7 ft. 6 ins. Its weight was estimated at from 4 to 5 cwts. A striking feature of the Sunfish is its extremely small mouth. This specimen had a mouth not more than  $3\frac{1}{2}$  ins. across.—ALEX. B. WALLACE, Edinburgh.

**Unusual numbers of the "Painted Lady" Butterfly in Fife.**—We have noticed of late an unusual number of Painted Lady Butterflies (*Vanessa cardui*) in East Fife. The first day on which we saw them in any quantity was 6th August, when they were plentiful on the shore and links east of Largo, and also occurred some way inland. Since then we have seen them almost every day, but in smaller numbers, in various localities from Boarhills to Largo. Those seen were very fine specimens, with the exception of one or two which were faded and ragged.—LEONORA JEFFREY RINTOUL and EVELYN V. BAXTER, Largo.

**Death's Head Moth in Forth.**—It may be of interest to note that a Death's Head Moth (*Acherontia atropos*) was found in a grocer's shop in Upper Largo, about 20th July. The specimen was kept and given to us, and is the first we have had from the district.—EVELYN V. BAXTER and LEONORA JEFFREY RINTOUL, Largo.

**Ixodes putus, Cambr., in Shetland.**—On an emaciated Puffin (*Fratercula arctica*) secured in Ollaberry Bay, N. Mavine, June 1912, the writer observed a large number of ticks. Some sixty specimens (representing larva, nymph, and adult ♀) were taken. About one-third were fully grown, but of course no males were seen. The identification is due to Dr J. H. Ashworth, to whom a number of the ticks were submitted.—JAMES WATERSTON, Manse, Ollaberry, Shetland.

**Recurrence of the Cotton-Spinner off Mallaig.**—An excellent specimen,  $8\frac{1}{2}$  ins. long, of this rare Sea-Cucumber—*Holothuria forskali*, Delle Chiaje—was obtained by Mr A. Johnston off Mallaig, in the beginning of September. This—the second example from Scottish waters—together with the earlier record from Mallaig (*Ann. Scot. Nat. Hist.*, 1910, p. 11) would indicate that in this locality the Cotton-Spinner is well established.—JAMES RITCHIE.



## GLEANINGS.

In *British Birds* for September appears (pp. 107-117) an article by Abel Chapman, entitled "Spring-Notes on the Borders (1911-12)." The following birds are noted as breeding in Scottish counties: the Great Crested Grebe, Wigeon, and Pochard, in Roxburghshire and Selkirkshire, and the Little Grebe in the latter. Full details are given, with the number of known stations.

An article signed "F. N. S.," on the "Winter Birds of Oronsay," is published in the *Field* of 31st August. The paper deals with the bird-life observed during a five months' stay on the island, October 1902 to March 1903. It is stated that 69 species were noted, but no list is given.

The *Zoologist* for August contains (pp. 281-292) an article by Fredk. J. Stubbs, bearing for its title "Notes on the Habits and the Coloration of the Common Starling (*Sturnus vulgaris*)."

In the *Field* of 24th August (p. 441) appears an interesting article by Seton Gordon, on "The Snow-Bunting." The author states that in the central highlands of Scotland the birds are never, so far as his experience goes, found below an elevation of 3000 ft. He found the nest most commonly at an elevation of 3600 ft. Full particulars are given of the song of this interesting bird, and the article is illustrated by two photographs, showing respectively the young bird resting on the rocks surrounding the nest, and a scree where the Snow-Bunting breeds.

Ornithologists will be interested in an article by Professor C. J. Patten, on "Rock-Pipits on Migration," observed at the Tuskar Rock. It is published in the *Irish Naturalist* for September (pp. 164-170).

In the *Proceedings of the Zoological Society of London*, 1912, Part III., published in September, appears an interesting paper by Julian S. Huxley, entitled "A First Account of the Courtship of the Redshank (*Totanus calidris*, L.)." The scope of the paper may be gathered from the titles of the various sections: 1. Introduction; 2. Locality; 3. The Courtship proper; 4. Other Habits of the Pairing-Season—(a) the Love-flight, (b) the Combats of the Males, (c) Calling from a conspicuous perch; (5) Discussion. The observations were made in North Wales.

M. Portal, in *British Birds* (September 1912, p. 121), records the occurrence of an adult male Red-backed Shrike (*Lanius c. collurio*) near Portpatrick, Wigtownshire, on the 14th August. In the same journal (p. 123) F. W. Smalley mentions having received in the flesh an adult female Sooty Shearwater from the island of Graemsay, Orkney, on the 18th October 1911.

The first nesting of the Common Eider in Ireland is recorded by H. W. Robinson in the same journal (p. 106). Two nests were found on a small island off the coast of Donegal on 2nd June. [Not County Down as printed—*vide* H. W. Robinson, *in litt.*]

Two interesting notes on "The Fulmar in Ireland," by C. V. Stoney and R. J. Ussher, are printed in the *Irish Naturalist* for September (pp. 180-181). Mr Stoney's contribution refers to a breeding-place on an exposed headland on the

west coast of Donegal, while Mr Ussher draws attention to the fact that this locality is the same as that recorded last year by Messrs Malcolmson and Green. The latter also refers to the absence of the bird from the cliffs of Achill and Clare Island, although such places are eminently suitable for it. He states that as yet there are only two breeding-places for the species in Ireland—one in Co. Mayo and that in Donegal referred to above.

An article of unusual interest is printed in the issue of *Nature*, dated 22nd August 1912. It is by Dr Johs. Schmidt, and is entitled "The Reproduction and Spawning-Places of the Fresh-Water Eel" (*Anguilla vulgaris*). As the result of prolonged investigations several important conclusions seem justified. For examples, it appears probable that "all the eels which occur in the North European countries must come from the Atlantic," that "the eel does not spawn in the Mediterranean at all," that "large quantities of eel larvæ are carried by currents into the Mediterranean from the Atlantic," and that "the spawning-places must lie in the Atlantic beyond the Continental Slope, and that they must be in the Northern Atlantic."

The Dumfriesshire and Galloway Natural History and Antiquarian Society has just issued vol. xxiv. (New Series) of its *Transactions and Journal of Proceedings*. It forms a volume of 344 pages, and contains a series of papers of much interest, both locally and generally. Thirteen full-page plates are also given. Among the papers two are of interest to Scottish naturalists, viz., one on the "Destructive Forest Insects of Dumfriesshire," by W. H. Whellens, and the first instalment of a useful paper by Bertram M Gowan, entitled "A List of the Coleoptera of the Solway District." In this section of the paper the Carnivorous Ground-Beetles of the tribe Geodephaga are dealt with, and of these 159 species are recorded. It would have added to the interest and usefulness of the list if the new records had been marked with an asterisk or otherwise specially indicated.

In the September number of the *Entomologist's Monthly Magazine* (pp. 212-213) Prof. T. Hudson Beare publishes a note on the "Recapture of *Bembidium virens*, Gyll., at Loch Maree, Ross-shire." Ten specimens were taken on the 1st and 2nd August last. A list of other interesting beetles taken or seen on the loch side is also given.

Gervase F. Mathew records (*Entomologist*, September 1912, p. 278) the capture of a ♀ example of the Hawk-Moth, *Deilephila galii*, at Spean Bridge, Inverness-shire, on the 24th July.

Rev. Arthur S. Hoole, in the same journal (p. 279) states that *Metrocampa margaritaria* has been exceedingly plentiful this year at Kyleakin, Isle of Skye. At the same place he also took three specimens of *Thyatira batis* [Lepidoptera].

In the *Entomologist* for September (pp. 260-264) F. W. Edwards concludes his useful "Notes on the British Mosquitoes (Culicidæ)." The genera *Aedes Teniorhynchus*, *Theobaldia*, and *Culex*, are dealt with, and the paper concludes with a list of reputed British species and a key to the known larvæ of the whole group. We note the following Scottish records: *Aedes cinereus*, Mg., Edinburgh; and *Theobaldia theobaldi*, Meij., Dingwall.

In *Nature* of 12th September is published the Opening Address to Section C. (Geology), by its President, Dr B. N. Peach, F.R.S. It is entitled "The Relation between the Cambrian Faunas of Scotland and North America," and occupies about seven closely printed pages of the journal.



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## ABERDEEN UNIVERSITY BIRD-MIGRATION INQUIRY: FIRST INTERIM REPORT (1909-12).

By A. LANDBOROUGH THOMSON, M.A., M.B.O.U.

(Continued from page 224.)

### GREENFINCH (*Chloris chloris*, L.).

CASE 14, ring A.U. 9358:—

24th May 1910: marked as a nestling near Skene House, Aberdeenshire. (Miss D. Hamilton.)

8th June 1910: found dead (head injured) near the same place. (Marker.)

CASE 20, female, ring A.U. 7688:—

24th March 1910: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

26th March 1910: recaught in net at same place, and released. (Marker.)

CASE 21, male, ring A.U. 7142:—

8th March 1910: caught in trap, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

22nd March 1910: recaught in net at same place, and released. (Marker.)

27th March 1910: recaught in net at same place, and released. (Marker.)

CASE 22, ring A.U. 7147:—

25th Feb. 1910: caught in trap, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

5th April 1910: recaught in net at same place, and released. (Marker.)

9th April 1910: recaught in net at same place, and released. (Marker.)

CASE 25, male, ring A.U. 7602 :—

9th March 1910: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

15th April 1910: recaptured in net at same place, and released. (Marker.)

CASE 26, female, ring A.U. 7143 :—

8th March 1910: caught in trap, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

11th March 1910: recaptured in trap at same place, and released. (Marker.)

12th March 1910: recaptured in trap at same place, and released. (Marker.)

15th March 1910: recaptured in net at same place, and released. (Marker.)

15th April 1910: recaptured in net at same place, and released. (Marker.)

CASE 27, male, ring A.U. 7122 :—

3rd March 1910: caught in trap, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

18th April 1910: recaptured in net at same place, and released. (Marker.)

CASE 45, ring A.U. 7187 :—

24th Feb. 1910: caught in trap, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

25th Feb. 1910: recaptured in trap at same place, and released. (Marker.)

4th March 1910: recaptured in trap at same place, and released. (Marker.)

CASE 46, ring A.U. 7183 :—

23rd Feb. 1910: caught in trap, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

4th March 1910: recaptured in trap at same place, and released. (Marker.)

12th March 1910: recaptured in trap at same place, and released. (Marker.)

CASE 47, male, ring A.U. 7145 :—

9th March 1910: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

12th March 1910: recaptured in trap at same place, and released. (Marker.)

CASE 48, male, ring A.U. 7612:—

12th March 1910: caught in trap, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

13th March 1910: recaptured in trap at same place, and released. (Marker.)

CASE 52, male, ring A.U. 7607:—

11th March 1910: caught in trap, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

15th March 1910: recaptured in net at same place, and released. (Marker.)

22nd March 1910: recaptured in trap at same place, and released. (Marker.)

1st Dec. 1910: recaptured at same place, and released. (Marker.)

CASE 54, male, ring A.U. 7164:—

14th March 1910: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

15th March 1910: recaptured in net at same place, and released. (Marker.)

CASE 110, female, ring A.U. 9717:—

4th May 1910: caught in trap, marked, and released as an adult bird at Ascog, Rothesay, Bute, Scotland. (Mr J. Clarke.)

5th Dec. 1910: recaptured in trap at same place, and released. (Marker.)

CASE 114, female, ring A.U. 7638:—

9th April 1910: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

10th Jan. 1911 (about): caught in trap beside the Water of Leith, at Bonnington, Edinburgh. (Mr G. N. Barclay: ring returned.)

CASE 128, ring A.U. 7185:—

23rd Feb. 1910: caught in trap, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

30th Jan. 1911: recaptured at same place, and released. (Marker.)

CASE 129, ring A.U. 0911:—

22nd Jan. 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

30th Jan. 1911: recaptured at same place, and released. (Marker.)

CASE 130, ring A.U. 819H:—

28th Jan. 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

30th Jan. 1911: recaptured at same place, and released. (Marker.)

4th Feb. 1911: recaptured at same place, and released. (Marker.)

CASE 131, male, ring 817H:—

28th Jan. 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

3rd Feb. 1911: recaptured at same place, and released. (Marker.)

9th Feb. 1911: caught in Wilkie Place, North Leith, near Edinburgh. (Mr H. Craft; ring returned.)

CASE 132, female, ring A.U. 7174:—

19th March 1910: caught in trap, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

10th Jan. 1911: caught in Wilkie Place, North Leith, near Edinburgh. (Mr H. Craft: ring returned.)

CASE 144, female, ring A.U. 815H:—

28th Jan. 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

3rd Feb. 1911: caught in Leith, near Edinburgh. (Mr J. Colbron: ring returned.)

CASE 165, female, ring A.U. 0907:—

21st Jan. 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

14th Feb. 1911: recaptured at same place, and released. (Marker.)

CASE 167, female, ring A.U. 7676:—

20th March 1910: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

17th Feb. 1911: recaptured at same place, and released. (Marker.)

CASE 169, ring A.U. 826H:—

30th Jan. 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

23rd Feb. 1911: recaptured at same place, and released. (Marker.)

CASE 172, ring A.U. 438H:—

19th Feb. 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

27th Feb. 1911: recaptured at same place, and released. (Marker.)

CASE 181, ring A.U. 458H:—

6th March 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

7th March 1911: recaptured at same place, and released. (Marker.)

CASE 183, ring A.U. 267H:—

7th Feb. 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

11th March 1911: recaptured at same place, and released. (Marker.)

CASE 184, ring A.U. 445H:—

23rd Feb. 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

13th March 1911: recaptured at same place, and released. (Marker.)

CASE 186, ring A.U. 464H:—

7th March 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

17th March 1911: recaptured at same place, and released. (Marker.)

CASE 239, rings A.U. 929H and 433M:—

4th July 1911: caught in net, marked (929H), and released as a young bird at East Warriston House, Edinburgh. (Mr A. Campbell.)

10th July 1911: caught, re-marked (ring 433M substituted for original through some mistaken notion), and released at Wilkie Place, North Leith, near Edinburgh. (Mr H. Craft.)

13th Aug. 1911: recaptured at East Warriston House, Edinburgh, and released. (Original marker.)

CASE 301, male, ring A.U. 65F:—

22nd Dec. 1911: caught in trap, marked, and released at Inveresk, near Musselburgh, Midlothian, Scotland. (Mr R. Tomlinson.)

5th Jan. 1912: caught near Musselburgh. (Mr T. Archibald.)

CASE 305, male, ring A.U. 7633:—

2nd *April* 1910: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

28th *Jan.* 1912: found in a dying condition in West Norton Place, Edinburgh. (Mr T. Elder.)

CASE 307, ring A.U. 9690:—

10th *Aug.* 1911: marked as a nestling at Stow, Midlothian, Scotland. (Mr R. G. Thin.)

4th *Feb.* 1912: killed with a stone (by a boy) at North Middleton. (Mr J. M'K. M'Kinley.)

CASE 311, ring A.U. 799A:—

23rd *Aug.* 1910: caught, marked, and released in the garden at Crichton Bank, Inverurie, Aberdeenshire. (Mr J. L. Tait.)

12th *Feb.* 1912 (about): caught at Balligite, Melvich, Sutherland, Scotland: died after a fortnight's captivity. (Mr D. Sutherland: ring returned.)

CASE 320, ring A.U. 444H:—

23rd *Feb.* 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

31st *Jan.* 1912: recaptured at same place, and released. (Marker.)

10th *Feb.* 1912: recaptured at same place, and released. (Marker.)

CASE 323, ring A.U. 440H:—

20th *Feb.* 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

7th *Feb.* 1912: recaptured at same place, and released. (Marker.)

CASE 324, ring A.U. 320H:—

3rd *Aug.* 1911: caught in net, marked, and released at East Warriston House, Edinburgh. (Mr A. Campbell.)

10th *Feb.* 1912: recaptured at same place, and released. (Marker.)

CASE 343, ring A.U. 9460:—

24th *May* 1910: marked as a nestling in the Rosary, Skene House, Dunecht, Aberdeenshire. (Miss D. Hamilton.)

5th *May* 1912: found in the gardens of Castle Fraser, Aberdeenshire. (Kemnay correspondent of Aberdeen *Evening Express*, 9th May 1912.)



CASE 352, ring A.U. 357H:—

10th Aug. 1911: caught in net, marked, and released, as a young bird, at East Warriston House, Edinburgh. (Mr A. Campbell.)

19th March 1912: recaptured at same place, and released (Marker.)

CHAFFINCH (*Fringilla coelebs*, L.).

CASE 195, ring A.U. 712H:—

6th March 1911: caught in net, marked, and released at 46 Don Street, Old Aberdeen. (Mr A. G. Davidson.)

22nd April 1911: found dead in premises in Princes Street, Aberdeen. (Mr A. Taylor: ring returned.)

CASE 226, ring A.U. 806K:—

28th May 1911: marked as nestling at Stonehaven, Kincardineshire, Scotland. (Lt.-Col. A. V. Anderson.)

7th July 1911: caught in the garden of Moraybank, Stonehaven, and released. (The tenant of Moraybank.)

HOUSE SPARROW (*Passer domesticus*, L.).

CASE 23, ring A.U. 7190:—

25th Feb. 1910: caught in trap, marked, and released at East Warriston, Edinburgh. (Mr A. Campbell.)

9th April 1910: recaptured in net at same place, and released. (Marker.)

CASE 28, male, ring A.U. 7512:—

14th Feb. 1910: caught in net, marked, and released at East Warriston, Edinburgh. (Mr A. Campbell.)

19th April 1910: recaptured in net at same place, and released. (Marker.)

22nd April 1910: recaptured in net at same place, and released. (Marker.)

30th April 1910: recaptured in net at same place, and released. (Marker.)

CASE 30, male, ring A.U. 7662:—

19th April 1910: caught in net, marked, and released at East Warriston, Edinburgh. (Mr A. Campbell.)

20th April 1910: recaptured in net at same place, and released. (Marker.)

30th April 1910: recaptured in net at same place, and released. (Marker.)

6th *April* 1912: recaught at same place, and released.  
(Marker.)

CASE 32, male, ring A.U. 7526:—

16th *Feb.* 1910: caught in net, marked, and released at East  
Warriston, Edinburgh. (Mr A. Campbell.)

22nd *April* 1910: recaught in net at same place, and released.  
(Marker.)

CASE 34, female, ring A.U. 7529:—

16th *Feb.* 1910: caught in net, marked, and released at East  
Warriston, Edinburgh. (Mr A. Campbell.)

30th *April* 1910: recaught in net at same place, and released.  
(Marker.)

2nd *May* 1910: recaught in net at same place, and released.  
(Marker.)

CASE 35, male, ring A.U. 7666:—

19th *April* 1910: caught in net, marked, and released at East  
Warriston, Edinburgh. (Mr A. Campbell.)

30th *April* 1910: recaught in net at same place, and released.  
(Marker.)

CASE 37, female, ring A.U. 7517:—

14th *Feb.* 1910: caught in net, marked, and released at East  
Warriston, Edinburgh. (Mr A. Campbell.)

3rd *May* 1910: recaught in net at same place, and released.  
(Marker.)

CASE 38, female, ring A.U. 7522:—

16th *Feb.* 1910: caught in net, marked, and released at East  
Warriston, Edinburgh. (Mr A. Campbell.)

2nd *May* 1910: recaught in net at same place, and released.  
(Marker.)

CASE 39, female, ring A.U. 7672:—

30th *April* 1910: caught in net, marked, and released at East  
Warriston, Edinburgh. (Mr A. Campbell.)

2nd *May* 1910: recaught in net at same place, and released.  
(Marker.)

(*To be continued.*)

NOTE ON THE FOOD OF THE COMMON  
PHEASANT.

By PERCY H. GRIMSHAW, F.R.S.E., F.E.S., Royal Scottish Museum.

AS a contribution to our knowledge of the dietary of the Common Pheasant (*Phasianus colchicus*), it may be of interest to place on record the results of a detailed examination of the contents of a crop kindly sent to me by Mr A. S. Leslie, of the Grouse Disease Inquiry. He had received it from Mr H. L. Macdonald, of Dunach, accompanied by a letter to the following effect: "I send you herewith the crop of a young pheasant cock shot on the hill here, and crammed with the heather beetle. Although the grouse enquiry is closed, I thought the fact that pheasants eat the beetle was of so much interest, if not already known, that you would be kind enough to send the crop on to the proper quarter for examination. The bird was killed about 800 ft. above sea-level and far from all crops, and there are a number of pheasants on the hill. This year the beetle has done very considerable damage to the heather on this estate. As I am only a visitor here staying with the shooting tenant, I should prefer that the name of the estate should not be published."<sup>1</sup> Upon examining the crop I noticed at once that the bird had indeed fed largely upon the heather beetle; but there was also present such a large mass of small diptera, that I considered it advisable actually to count the number of specimens rather than trust to a mere estimate. I therefore give below a fairly complete statement of the contents of the crop, and I believe that the number of specimens devoured by this bird at a single meal will cause some astonishment.

General statements regarding the food of this species have been made in several works. For example, in Yarrell's *History of British Birds*, 4th edition, vol. iii., p. 99, it is stated that the Pheasant eats grain, seeds, and leaves of various kinds, the root of the Bulbous Crowfoot (*Ranunculus bulbosus*), the tubers of the Lesser Celandine (*Ranunculus*

<sup>1</sup> I am permitted to state that the bird was shot in the "Mid-Argyll district of Argyllshire."

*ficaria*), and even acorns. The bird is also credited with the destruction of enormous numbers of wireworms and craneflies, 1200 of the former having been on one occasion taken out of a single crop. Again, in a valuable paper on the food of birds published by Miss Laura Florence in the *Transactions of the Highland and Agricultural Society of Scotland* (5th series, vol xxiv., 1912, p. 210), analyses of the contents of four stomachs are given. These contained corn grains, grass, Indian corn, seeds of Birch or Alder, seeds of Hawthorn, and roots and tubers of the Lesser Celandine. There is no mention of any insect remains, so that the analysis given below shows a considerable contrast.

It should be noted that in enumerating the specimens I have not included mere fragments, such as wings, legs, or detached heads. In the case of the *Bibio*, I have only counted fairly complete specimens, while the Beetles enumerated had at least the thorax with the elytra attached. To the following numbers, therefore, it would be quite reasonable to add a small percentage:—

## ANALYSIS OF CONTENTS.

INSECTS—Diptera: <i>Bibio lepidus</i> , Lw. . . . .	2,286 specimens.
<i>Pollenia rudis</i> , Fab. . . . .	1 „
Coleoptera: <i>Lochmaea suturalis</i> , Thoms. (Heather Beetle) . . . . .	508 „
Hymenoptera: <i>Myrmica rubra</i> , L. (Ant) . . . . .	2 „
Orthoptera: <i>Stenobothrus</i> sp. (Grass- hopper) . . . . .	1 „
MOLLUSCA— <i>Planorbis</i> sp. . . . .	2 „
	<hr/>
Total . . . . .	<u>2,800</u>

VEGETABLE REMAINS.—Numerous tubers of Lesser Celandine (*Ranunculus ficaria*), one seed-capsule of Mouse-Ear Chickweed (*Cerastium*), fragments of mosses and grasses, small stem with leaves of Heath Bed-straw (*Galium saxatile*), tiny shoot of Heather (*Calluna vulgaris*), many fragments of leaves of the Bulbous Crowfoot (*Ranunculus bulbosus*), and a few leaflets of the Cuckoo-flower (*Cardamine pratensis*).

On the evidence of the above figures I think we may fairly claim that the Pheasant is likely to be of use in the checking of the ravages caused by the Heather Beetle, and may be classed with the Blackcock as a beneficial visitor to our grouse moors.

ON *MACKAYIA DIMORPHA*, A NEW GENUS  
AND SPECIES OF MALLOPHAGA FROM THE  
MANX SHEARWATER.

By JAMES WATERSTON, B.D., B.Sc.

(Read at the International Congress of Entomology, Oxford,  
7th August 1912.)

THE *Mallophaga* found on the various species of Tubinares—a group of birds including the Petrels, Fulmars, Albatrosses, Shearwaters, etc.—have furnished some of the most noteworthy ectoparasites hitherto investigated. Besides more ordinary forms, such as *Docophorus*, *Lipeurus*, and *Menopon*, there have been described from the hosts referred to, the peculiar genera *Giebelia*,<sup>1</sup> *Philocannus*, *Ancistrona*, etc., which are not only morphologically very distinct, but of importance, alike for the phylogeny and for the distribution of the order. It was therefore with great interest that the writer, some two years ago, received from a correspondent a consignment of Philopteridæ taken on *Puffinus anglorum*. In this material two species were represented, viz., a single ♂ *Docophorus*, sensu stricto, and eight specimens of a form to which neither specific nor generic place could then be assigned. With two of the Philopterids hitherto reported from species of *Puffinus*, viz., *Giebelia mirabilis*, Kellogg, and *Docophorus coronatus*, Giebel,<sup>2</sup> comparison appeared to be necessary. Thanks to Professor V. L. Kellogg's excellent account of *Giebelia*, it was possible to decide at once that the insect now under discussion, though a close ally, could not be referred to that genus. Giebel's description of his parasite, as reported by Piaget,<sup>3</sup> is vague and insufficient. It is unac-

<sup>1</sup> GIEBELIA, Kellogg, *New Mallophaga*, pt. 1, p. 187 (1896) (Type: *G. mirabilis*).

<sup>2</sup> *D. coronatus*, Giebel, *Insect. Epiz.*, p. 116 (1874), from *Puffinus fuliginosus*.

<sup>3</sup> *Les Pédiculines*, p. 121 (1881).



accompanied by any figure. The host also is different. As was noted above, true *Docophorus* does occur on *Puffinus*, and this may be Giebel's insect. Failing that, if one wished to establish any connection between *D. coronatus* and the present parasite, one would have to suppose that characters obviously of generic value had been overlooked by Giebel in his diagnosis assigning the species *coronatus* to the genus *Docophorus*. This may be the case, as Giebel's species is founded on a single female, in which sex, of course, the antennæ are simple. Only the name *coronatus* makes one pause. It certainly suggests such projecting labral lobes as are found in *Giebelia*, *Philocanus*, and the present insect. The point could be settled only by reference to Giebel's type. On the whole, however, it seems best to assume that we are here dealing with a new form. In any case, whatever a future comparison of types may reveal, a new genus is required for the reception of this remarkable insect.

MACKAYIA, gen. nov.

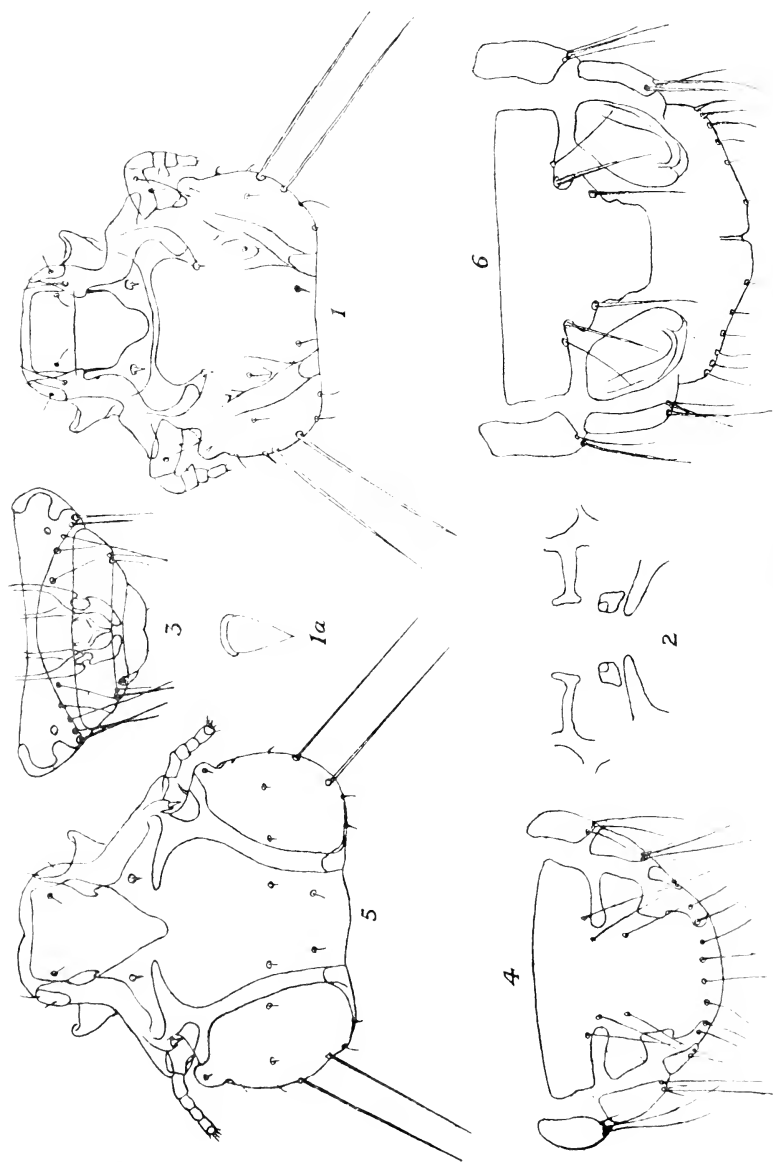
General characters those of *Docophorus*, with a broad transparent membranous collar or flap across the under surface of the forehead. In both sexes this flap projects clearly on either side of the head. The sexes are heterocerous, and the anterior angles of the temple are rather more rounded than in *Giebelia*, to which, except in the antennæ, this genus closely approaches.

*Mackayia dimorpha*, spec. nov.

♂. *Head*.—Clypeus straight or slightly rounded. Bands a little curved, with one short hair anteriorly and one or two minute hairs below. Of the latter, one projects underneath the edge. Above, between the bands and the edge of the signature, one longish hair on each side just before the suture. The signature advances beyond the clypeal suture to above the mandibles. Its clypeal portion bears one hair on each side. The termination of the signature is somewhat indistinct, as it nearly merges into a remarkable transverse internal band which stretches between and connects the antennals. On either side of the apex of the signature and in front of the internal band, is a short, heavy, peg-like spine directed backwards. The antennal bands, which are well developed, curve inwards both anteriorly and posteriorly.

At their posterior limit each bears a heavy spine like those near the apex of the signature. The square formed by the four spines is a conspicuous feature of the mid-region of the head. There is a dark, clearly limited spot before the eye, but inwards the ocular band is ill-defined. Occipital bands somewhat widely apart at base, where there is an intensely dark spot on each. These bands slant up to the oculars, which they do not quite reach, becoming indistinct in that neighbourhood. Before they become indistinct the occipital bands send off a short faint branch on the inner side. Antennæ: first joint, which bears one long hair on its upper surface, deeply inset in the head, long, though not equal to the other joints together; third joint transverse, with triangular appendage. Trabeculæ long, reaching to beyond the middle of the first joint. Eyes prominent, with one very short bristle. Across the posterior region of the head runs a row of four hairs, and there are two additional hairs near the occipital edge. Behind the eye the temples bear two spines followed by two very long hairs. Occipital edge nearly straight, with two short hairs on each side, placed outside the occiput proper. On the ventral surface of the head, at about the level of the clypeal suture, is an entire transverse membranous flap which is folded on itself at the sides, making there knobbed triangular projections. These projections, plainly seen from above, are characteristic of the genus.

*Thorax*.—The *prothorax* bears on the dorsum two minute hairs anteriorly. There is a short bristle at the angle and one hair at each side on the posterior edge. The *metathorax* bears two minute bristles anteriorly. The long bristles at the angle and posterior edge, which are about five to six in number, are placed in a row on each side with a clear space at and near the apex. On the sternum the chitinous bands between the posterior coxæ are specially well marked, four hairs on sternum, two between mid coxæ and two between hind coxæ. In colour the thorax is clear brown with darker margins. In the *prothorax* there are (according to the age of the individual) more or less indications of a clear median space in the dorsal spot. The thorax in both sexes is rounded over the abdomen.



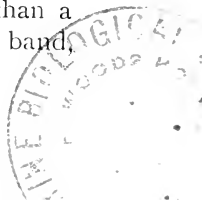
*MACKAYIA DIMORPHA*, n. sp.



*Abdomen.*—The bands on segments 1, 2, and 8 are wide, but narrowed on segments 3-7. There are two median hairs on segments 1-8. In colour these bands, which are entire, are of a clear brown. The stigmata are large and prominent. On each band behind and inside the stigma, segments 2-6 show one fine hair and two or three stouter hairs near or at the angle. These hairs are longer on the hinder segments. Segment 7 has one or two extra hairs on the edge of the band and shows an almost complete transverse row save in the middle. Segment 9 has on the upper surface two patches of short hairs, five in each, symmetrically placed about the middle line. There are one or two terminal hairs and some at the sides. The lateral band of the segments is  $\neg$  shaped and there is only a slightly entrant appendix. The genitalia are figured. The development of the paramera is relatively great transversely. The penis is stout, with blunt apex. On the under surface the segmental bands are sharply limited and do not join the lateral bands. Each transverse band bears a row of about six hairs (3, 3). The genital mark results from a broad median connection of bands on segments 6, 7, 8. The lateral bands here bear one to two long hairs not visible from above. The colour of the abdomen is clear dark brown, on which the stigmata stand out distinctly. The lateral bands are much darker than the ground colour of the segments, being almost black.

*Legs.*—These are short, moderately stout, and docophoroid.

♀. *Head.*—The clypeal outline varies and may be even distinctly concave, as in the example figured. In general chætotaxy the sexes are alike. They differ, however, in the relation of the bands to one another. In the ♂, as already noted, the occipital band runs directly to the ocular spot, becoming indistinct there. Before it reaches this point it sends off an internal branch, which fades away in the direction of the hindmost heavy spine described. There is a distinct gap between the occipital band and its connections on the one hand and the antennal band on the other. In the female the occipital band does not join the ocular spot directly. It runs evenly to the base of the antennal and there fuses with (*a*) the ocular band (which is more than a spot in this sex), and (*b*) the heavy internal transverse band.



and (c) the hindmost part of the antennal band proper, which as in the male bears a heavy peg-like spine. This portion of the band is in the ♀ exceedingly short, with the result that the heavy spine is placed above the insertion of the antenna ; so that the figure formed by the spines is not, as in the ♂, a square, but rather trapezoidal.

The internal transverse bands do not meet in the ♀, so that the rounded apex of the signature is distinctly seen.

First antennal joint rather shorter than the trabecula, and equal to the second ; third and fourth short, fifth longer (see comparative lengths in table).

*Abdomen.*—The 1st segment much narrower than the others, with rounded angles. The following segments (2-7) strongly angulated. The 9th segment is fringed with hairs.

The genital mark covers segments 7 and 8. On the 7th it is entire while on the 8th it is tripartite, the median portion being joined on to the band on segment 7. The two lateral spots have a dark external margin, which seems to cover some internal chitinous structure.

*Legs.*—Femora short and broad. Tibiæ longer than femora.

*Measurements of Mackayia dimorpha.*

	♂.		♀.	
	Length.	Breadth.	Length.	Breadth.
	Mm.	Mm.	Mm.	Mm.
Head . . . . .	·500	·478	·528	·542
Prothorax . . . . .	·128	·335	·142	·357
Metathorax . . . . .	·171	·457	·171	·471
Abdomen . . . . .	·757	...	·971	...
1st segment . . . . .	...	·428	..	·457
4th " . . . . .	...	·607	...	·678
Total . . . . .	1·55	·6	1·81	·67
<b>Antennal joints—</b>				
1 . . . . .	·1	·046	·05	·05
2 . . . . .	·05	·03	·05	·023
3 . . . . .	·023	·05	·023	·023
4 . . . . .	·023	·03	·023	·023
5 . . . . .	·043	·026	·046	·023
Length of antenna . . . . .	·24	...	·19	...

The types of *M. dimorpha* are a pair in the writer's collection. Two ♂♂ and six ♀♀ were taken by Mr Hugh Mackay on a specimen of the Manx Shearwater (*Puffinus anglorum*), from the island of Eigg (Scotland). The host was sent to Mr Mackay by the Rev. J. M'William, on 30th May 1910.

KEY TO THE GENERA GIEBELIA, MACKAYIA,  
PHILOCEANUS.

*Gen. characters.*—Philopteridæ with broad transverse laterally projecting membranous flap on under side of forehead.

- |      |   |                      |
|------|---|----------------------|
| A.   | Antennæ differing in the sexes.   | A.A.                 |
|      | Antennæ simple in both sexes.   | <i>Giebelia</i> .    |
| A.A. | Form slender, nirmoid; metathorax with distinct backward-projecting postero-lateral angles. | <i>Philoccanus</i> . |
|      | Form stout, <i>Giebelia</i> -like; metathorax continuously rounded behind.                  | <i>Mackayia</i> .    |

It remains to note some points raised by this and the allied species.

1. *Mackayia*, *Giebelia*, and *Philoccanus* agree in having a well-marked labral collar or transverse lobe. The function of this laterally folded outgrowth of the under side of the clypeus may be to hold the food in position during detrition. This peculiar structure is possibly not strictly comparable with the similar outgrowth in the Liotheid *Physostomum*.
2. Systematically *Mackayia* falls between *Giebelia* and *Philoccanus*. With the former it agrees in general facies, structure, genus of host, but the antennæ connect it with *Philoccanus*. We have here, then, a true link between two somewhat isolated forms, which is precisely what one would expect in view of the marked tendency which the genera of this order (Mallophaga) show to run into one another.
3. *Giebelia*, up to the present, is a New World form of *Puffinus*-parasite. The range of the genus may be wider, but if not, *Mackayia* may be the Old World representative. The Shearwaters, however, are notorious wanderers, and without further evidence it would be rash to venture an opinion.

4. Most interesting of all is the question suggested as to the phylogenetic position of these three genera. *Mackayia*, *Giebelia*, and *Philoceanus* are complicated forms in a group where the general note is one of severe simplicity. Their respective hosts belong to an ancient stirps of the Bird Kingdom. The life conditions of these parasites must have been long unchanged, to a degree remarkable even in an order noted for the constancy of the environment of its members. *Giebelia*, *Mackayia*, and *Philoceanus* must therefore be first beginnings or amongst the last expressions of Philopterid evolution. According to Professor Kellogg's interpretation of the developmental history of the order, the latter alternative must be accepted.

## EXPLANATION OF FIGURES.

- |                          |                     |
|--------------------------|---------------------|
| 1. Head of ♂.            | 4. Genital mark, ♂. |
| 2. Sternal marks of ♂.   | 5. Head of ♀.       |
| 3. Terminal segments, ♂. | 6. Genital mark, ♀. |

A NEW SPECIES OF *MACKAYIA*  
(*M. HETERACANTHUS*).

By JAMES WATERSTON, B.D., B.Sc.

While the foregoing article was in the press, the writer had submitted to him, by Dr Péringuez, director, Cape Town Museum, a still more remarkable form of the same genus. The types of this new species will be fully described later. Meanwhile, for the benefit of students of the group, the following notes may be given:—

- A. *Third joint of ♂ antenna with appendage. Head in both sexes bearing four short, heavy, peg-like spines. Host, Puffinus anglorum. M. dimorpha, Waterst.*
- A. A. *First and third joints of ♂ antenna with appendages. Head in both sexes bearing two bristles and two heavy spines, arranged as in dimorpha, the bristles being in the place of the anterior pair of spines. A slightly larger form than the preceding. Host, Procellaria gigantea. M. heteracanthus, sp. nov.*

## NOTES.

**The Hedgehog in Arran.**—Whilst reading the accounts given in the September and October numbers of the *Scottish Naturalist* of the rarity of the Hedgehog in Argyllshire, I thought it might prove interesting to mention an occurrence which shows the rarity of this animal in the island of Arran. I was sitting one evening in front of the house, when a workman approached and showed me a fairly large specimen of the common Hedgehog. On asking him, I found that it had been discovered on the west side of the island, at Shiskine; and was such a rare find that many of the men, including the one who unearthed it, did not know what it was. Several elderly people came to me that evening to see the animal, not having seen one before. It afforded an object of great interest to the school children next day. I found out later from an old man that the Hedgehog has been seen once or twice before—always in the same district, although most of the people here believed them to be non-existent in Arran.—WILLIAM D. CONGALTON, Brodick.

**Bird Notes from the Solway.**—A specimen of the Green Sandpiper, *Totanus ocropus*, was obtained at Skinburness on 30th August. This year appears to have been a remarkable one for this species, judging by the number of records from various Scottish districts. Mr Nichol, to whom I am indebted for these notes, informs me that he saw a Spotted Redshank, *Totanus fuscus*, near his house at Skinburness recently. A Peregrine attempted to capture it, but did not succeed. One Black-tailed Godwit, *Limosa belgica*, was seen, the only one to come under his observation this autumn. Commenting on the early arrival of "Geese" in the Solway, he states that, in all his experience he has never known these birds to arrive so early as they did this year—quite a fortnight before their usual time.—HUGH MACKAY, Edinburgh.

**Female Greenland Wheatear assuming Male Plumage.**—With reference to the Duchess of Bedford's interesting note on this subject in the September number of the *Scottish Naturalist*, we think it worth recording that we have a similar specimen. This female Greenland Wheatear was killed at the lantern of the Isle

of May on the night of 27th May 1911. It is in much the same plumage as that described by Her Grace, except that the wing feathers are rather browner than in the full-plumaged male, and the secondaries, wing-coverts, and outer-webs of the inner primaries have brownish edgings. The tail feathers of the left side only have white tips; the wing measures 101 mm.—EVELYN V. BAXTER and LEONORA JEFFREY RINTOUL, Largo.

**Late Stay of Swifts about Edinburgh.**—From my house, Swifts (*Cypselus apus*) were observed flying over Morningside Park, Edinburgh, every evening right through August and up till the 11th of September, when the last (two) were seen. Up till 1st September the usual number was eight or nine, but on one or two occasions I counted as many as twenty-five to thirty in sight at one time. After 1st September only two or three continued to put in an appearance. On 8th September I also saw two at Liberton, hawking for flies in company with Swallows and Martins.—WILLIAM EVANS, Edinburgh.

**Notes on the Fulmar Petrel.**—Whilst in Orkney and Shetland these past three months (July, August, and September) I have been on the look-out for any fresh nesting-places of the Fulmar. Whilst in Orkney, we visited the Calf of Eday, an islet which lies to the east of Eday, and there, on the Grey Head cliffs, we found two eggs and two young birds of the Fulmar Petrel (15th July). There appeared to be about ten adult birds on the wing, but as the nests were for the most part situated at the top of these cliffs, and also were overhung, it was impossible to tell how many "sitting" birds there were exactly. That there were nests one felt certain by the behaviour of the birds on the wing—a bird being noticed to stop and hover at one particular spot on the cliff every now and then—a rather characteristic habit of the Fulmar when there is a "sitting bird" about. On the two occasions on which the Red Head, Eday, was visited a single Fulmar was seen flying close to the cliffs, but no nest was actually found (July 1912). The natives told me that this was the first year the bird had been known to nest on the Grey Head. It was known to them at the sea-fishing as the Mollymawk. On the neighbouring island of Westray, where Dr J. A. Harvie-Brown records them as nesting in 1901, at the Noup Head, we found them in great numbers (July 1912). They have now extended their nesting throughout the whole of the cliffs which stretch along the west side of the island from Noup Head; little isolated colonies of from three to ten pairs being found every hundred yards or so. This year, for the first time, these birds have begun to nest on the low-lying cliffs extending from the Noup

Head on the east side of the island, where we found two nests and about half a dozen pairs of birds. One of the Noup lighthouse-keepers told me that he thought there were nearly double the amount of Fulmars at the Noup this year (1912) as compared with last year. He also thinks that the Fulmars are driving away the Herring-Gulls from their former nesting-ledges on the cliffs.

When in Shetland I visited a small island (Uyea) which lies to the south-east of Unst. Here the shepherd told me that he had seen five or six Fulmars "hanging around" the low-lying cliffs of the island, and had actually seen an egg of this bird on a ledge (June 1912). The bird had never been seen by him near the island before, although there are great numbers at the north of Unst. However, when I visited these cliffs on 3rd September this year I saw neither signs of old nests nor birds. I was informed, however, that two or three birds were nesting on the cliffs which lie to the north of Uyeasound, about one mile distant, and they may have gone there from Uyea. Certainly I saw a Fulmar flying close to the Uyeasound cliffs as I passed in the steamer (2nd September), but I never had an opportunity of searching these cliffs thoroughly. The natives told me that this was the first time that these cliffs had been visited by Fulmars within their memory.—G. D. FERGUSON, Edinburgh.

**Micariosoma festiva, C. L. Koch, in Linlithgowshire.**—

While collecting insects on Drumshoreland Moor, on 7th July 1912, I picked up a specimen of this curious Spider, which appears to be of very local distribution in "Forth." When captured it was running actively in sunshine on a grassy bank, in close proximity to one or two colonies of the Ant *Formica fusca*, to which the Spider bears considerable superficial resemblance.—S. E. BROCK, Kirkliston.

**The Painted-Lady Butterfly at the Isle of May, etc.**—

On the afternoon of 16th August last, I saw nine Painted-Lady Butterflies (*Vanessa cardui*), two of which I captured, on the Isle of May. Some of them were flitting about the lighthouse gardens; while others were in the enclosure where the ruins of the old chapel stand, and about the little harbour on the east side of the island. They had not—so I was informed—been noticed previous to the morning of that day, and, except one, four days later, were not again observed. That they were immigrants from abroad, I have no doubt; and it is interesting to note that on 18th August, about a dozen were seen by Mr D. Bruce on the coast at Skateraw, a few miles south of Dunbar. The first I myself observed was on

the sea braes west of Elie, Fife, on 10th August, but my son saw one on the sandhills behind Gullane, on 29th July, and others, I understand, were seen about the same date on that part of the Haddingtonshire coast.—WILLIAM EVANS, Edinburgh.

**Some Lepidoptera and other Insects from St Kilda.**—

In a miscellaneous collection of terrestrial invertebrates, made by Mr Eagle Clarke at St Kilda in the autumns of 1910 and 1911, I find the following Lepidoptera represented, each by one example:—

<i>Agrotis lucerneae</i> , L.,	September 1911.
<i>Triphæna pronuba</i> , L.,	„ 1910.
<i>Apamea gemina</i> , Hub.,	„ 1911.
<i>Hydræcia micacea</i> , Esp.,	„ 1910.
<i>Coremia didymata</i> , L.,	„ 1911.

None of these moths would appear to have been previously recorded from St Kilda.

There is also a specimen (male), taken in September 1910, of the Trichopteron *Stenophylax permistus*, M'Lach. (*concentricus*, M'L. *nec* Zett.), a Caddis-fly not previously on the St Kilda list. Mr K. J. Morton, to whom I have shown this specimen, has confirmed my identification.

The collection contains a number of examples of the small brown Ant, *Myrmica rubra*, race *ruginodis*, and of the common Earwig, *Forficula auricularia*, both of which have, however, been already recorded from the island. For previous lists of insects from St Kilda, the *Ann. Scot. Nat. Hist.* for 1906-1908 should be consulted.—WILLIAM EVANS, Edinburgh.

**Docophorus melanocephalus, N., a straggler on the Knot in Shetland.**—During the last half of August (1912), a great flock of Knots (*Tringa canutus*) made their appearance near Sullom, N. Mavine, and a number passed through the writer's hands for examination. From these birds over 500 Mallophaga, representing 4 genera and 7 species, were taken. One of them, *D. melanocephalus* (1 ♂ and 2 ♀ ♀), is interesting from the fact that its usual hosts are members of the genus *Sterna* (Terns). In Shetland the *Docophorus* occurs sparingly on *S. fluviatilis* and *S. macrura*, but it seems unlikely that the transference from one host to the other was effected here. More probably this took place in the Knots' summer quarters, where they may have been breeding in company with Terns. The original host was probably *S. macrura*.—JAMES WATERSTON, Ollaberry, Shetland.





## GLEANINGS.

The vexed question of Zoological Nomenclature is at present receiving much attention from British workers. Thus, in recently published literature many articles and reports are noticeable. In the first place, one observes in the Report of the British Association Committee on "Zoology Organisation" an allusion to a circular prepared and circulated among British zoologists with a view to obtaining a census of opinion on the question of the *strict application* of the law of priority, or otherwise. Of one hundred and eight slips returned to the Committee twenty-six were in favour of strict priority, and eighty-two against it. Again, at the second International Congress of Entomology held recently at Oxford considerable time was devoted to the question of nomenclature, and at the closing meeting an important suggestion forwarded to them by the Entomological Society of London was for all practical purposes adopted. This suggestion was to the effect that a permanent International Committee be established to deal with questions of nomenclature as affecting entomology, to consider modifications in the International Code, and to confer on various points with the International Commission. This is fully reported in our three British entomological journals. Lastly, we note a paper in the *Entomologist's Monthly Magazine* for October (pp. 225-227) on "Some Arbitrarily Formed Scientific Names," by August Busck, and one on "Aberrational Names" in the *Entomologist's Record* for October (pp. 229-230), by the Rev. George Wheeler. It is devoutly to be wished that such increased attention to the use of valid names and proper methods of naming may result in some degree of uniformity being soon established. But there is still a great deal of disagreement, and the whole question threatens to become a serious hindrance to the prosecution of good scientific work.

Several papers likely to be of interest to our readers were read during the recent meeting of Section D of the British Association at Dundee. An account was submitted by W. J. Dakin and M. Latache of a prolonged study of the plankton of Lough Neagh, Ireland. The investigation was a quantitative one, extending over a year, and is described as the first of its kind to be made in the British Islands. A paper was also submitted by J. F. Gemmell, entitled "A Preliminary Account of the Development of the Starfish *Asterias rubens* (L.)," based on researches made at the Millport Marine Biological Station. Other papers of interest are, "Some Observations on Boring Mollusca," by Miss B. Lindsay; "On the Cestode Parasites of Trout, with special reference to the Plerocercoid Disease of Trout from Loch Morar," by J. W. Chaloner; "Notes on the Skull of a Grampus," by Professor R. J. Anderson; "On the Distribution of *Saccammina sphaerica* (M. Sars) and *Psammosphæra fusca* (Schulze) in the North Sea," by E. Heron-Allen and A. Garland; and lastly, an important Report by the Committee appointed to investigate the Biological Problems incidental to the Belmullet Whaling Station.

Our ornithological readers will be interested in an account of the Fulmar which appears in the October number of the *Zoologist* (pp. 381-388), from the pen of Dr J. A. Harvie-Brown. This paper is an extension of that which recently appeared in our pages, and is devoted mainly to the past and present status of the species beyond the Scottish area. The present instalment is entirely devoted to "Introductory Remarks," but we notice that the statements refer entirely to Scottish localities.

In *British Birds* for October (pp. 154-155) appears a note by C. E. Stracey Clitherow on the "Probable Nesting of the Pied Flycatcher in Moray." A nest was found in a hole of an old birch tree on the bank of the Moriston River, Inverness, on 17th August. It is described as a typical Pied Flycatcher's, made of moss and strips of honeysuckle bark, was situated about three and a half feet from the ground, and contained a single egg which had evidently been laid for some considerable time. The nest was submitted to Mr F. C. R. Jourdain, whose opinion concurs with that of the author.

In the *Field* for 21st September (p. 629) Peter McRae records the shooting of a Turtle Dove at Dundonnell, Ross-shire. In the succeeding number of the same journal (p. 669) Major Haines records the occurrence of a specimen about four years ago, at Achnahaird, in the same county. Again, in the issue of 5th October, A. H. Mackenzie-Cotton (p. 720) records the shooting of an example in a turnip-field at Gairloch in 1880.

We note in the *Zoologist* for October (pp. 361-380) an interesting paper, entitled "On Scottish Marine Fishes, 1898-1912," by Prof. McIntosh, St Andrews. This paper was communicated to the meeting of the British Association in Dundee, on the 6th September. After giving careful summaries of the yearly captures by trawlers and liners for the period concerned, some general remarks are made bearing on the question whether the large amount of fishing prosecuted off our coasts is likely to result in a serious depletion of the food-supply. The author considers that the gloomy ideas which have become prevalent in certain quarters are hardly justified, and taking the Plaice as an example, he shows that at present there seems to be no great danger of its serious diminution. He questions, too, the benefit of maintaining marine fish-hatcheries for the open sea.

At a meeting of the South London Entomological and Natural History Society, held on 22nd August (vide *Entomologist's Monthly Magazine* for October, p. 245), Mr Newman exhibited a long series of *Pachnobia hyperborea* from Rannoch showing much variation, a short uniform series of the same moth from Shetland, and a few *Crymodes exulis* also from Shetland [Lepidoptera].

In the *Entomologist's Monthly Magazine* for October (p. 239) N. Charles Rothschild publishes two notes of interest to students of Lepidoptera. The first, on the food-plant of *Erebia blandina*, records the deposition of eggs of this species on the grass *Molinia caerulea*, this being the first notice of the food-plant in a wild state. The plant, with ova attached, was sent to the author by L. G. Essex from a locality in Scotland where the insect was common. In the second note, which deals with the food-plant of *Erebia epiphron*, it is definitely shown that the larvæ feed upon the grass *Nardus stricta*, plants having been carefully marked by H. A. Beadle, of Keswick, and when in flower forwarded to Mr Rothschild.

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THE TUFTED-DUCK (*FULIGULA CRISTATA*)  
IN THE NESTING SEASON.

By S. E. BROCK.

THE notes, of which the following is a summary, have been made chiefly at certain small pieces of water situated in the eastern district of Linlithgowshire, the convenient accessibility of the locality having allowed of systematic observations on the birds frequenting it. Here the Tufted-duck might almost be described as summer-visitors, arriving in pairs from mid-March onward, and taking their departure almost immediately after the young broods have attained independence. Winter occurrences are quite irregular, and each of brief duration. On other waters of larger dimensions in the county these ducks are regular winterers, in small parties; and the total numbers resident at that season are approximately equal to the breeding-stocks of the district generally. They are most numerous during the autumn months, when flocks of unusual dimensions are sometimes to be met with.

Adult drakes commence to assume the full plumage early in September, and by the beginning of the following month the earlier birds have nearly completed the moult: but many individuals, some of them perhaps birds of the preceding season, remain in imperfect feather much later, often well into the new year. There is some reason to believe that drakes are numerically superior to the other sex. In a summary of a considerable number of notes on comparative numbers of the sexes, made during the last few years, the males outnumber the females on a considerable majority of occasions, the balance in their favour on all records amounting to some 9 per cent.

Although odd pairs may be found consorting together as early as late January, it is not before the latter part of the following month that sexual influences begin to show appreciable outward effect on



the birds. In display Tufted-duck are rather quieter and less excitable than some other species, and the attitudes adopted are seldom salient. The earliest evidences are vague and uncertain in character. In the intervals between sleeping and feeding, the drakes evince some unusual restlessness, swimming to and fro with rapidity either towards the ducks or towards each other. The head is held erect and the long crest becomes more than ordinarily prominent. At frequent intervals the beautiful note (confined to the drakes)—a soft, liquid, several-syllabled utterance rarely penetrating to any distance—is uttered, commonly in chorus by several birds together. A slight upward toss of head and bill is occasionally shown, but this is perhaps more characteristic of the duck, expressive in the latter of varying mental conditions of excitement, both sexual and otherwise. At irregular intervals the drake throws the head sharply backwards so as to touch, or almost touch, the dorsal feathers—an action much resembling a similar one of the Goldeneye, but less forcible and spasmodic, and without vocal accompaniment. An action not frequently displayed is one wherein the drake (and more exceptionally the duck) raises the fore part of the body in the water in a somewhat slow and deliberate manner, as though about to flap the wings, the head and neck being simultaneously extended almost perpendicularly upward. This movement may be easily mistaken for a mere stretching motion, but close observation, with comparison of occasions of occurrence, seems to show that it is a veritable aspect of display. The backward throw of the head in the drake, and the bill-tossing action of both sexes, continue to be shown after the pairing-season. The ducks take a less active share in courtship, but may be occasionally seen to approach the drakes with neck extended and the head-tossing motion. At such times the drakes appear to take up a more constrained attitude than usual, floating on the water with the head and neck closely drawn into the body. Mutual jealousy or rivalry in the drakes is curiously little in evidence, and such, when it occurs, is confined to slight threatening gestures, or short pursuits over the water. I have not witnessed anything in the nature of a fight.

As the days pass, these displays become more frequent and definite in character, and the flocks begin to show a tendency to split up into pairs. This is a gradual process, the mutual attachment of the sexes being at first easily affected by weather-conditions or other influences, but becoming more absolute with the advance of the season.

When the pairs have settled down in their nesting-quarters, and from that period until well through the nesting season, a prominent

feature of incessant occurrence is the pursuit of the females by males of other pairs. The intruding drake, on such occasions, displays his hostility by a characteristic pose, the head being laid back on the shoulders and the tip of the bill slightly raised—an expressive gesture at once recognised by the female, which immediately moves aside. The aggressor then splashes over the surface in pursuit, and the female may seek escape by means of diving, or it may rise on the wing, when the two birds circle rapidly over the water for some short distance before the drake desists from the chase. The mate of the attacked bird makes usually only a half-hearted effort to assist his partner, merely following closely in the rear of the others. The pursuit is seldom continued on the wing to any great distance, and thus is not so obvious a feature as in the case of the Mallard, with which such affairs, originating under similar conditions, may be very prolonged, the birds (most frequently in trios) careering high in air for long distances together. The significance of the trait is not clear, since the drakes of neither species appear to treat their own mates in like manner.

Like other duck, Tufted-duck pass much of their leisure time in preening the plumage, but there is an aspect of the habit during the few weeks previous to nesting which suggests some particular meaning of its own; and this is especially the case in the female. When preening in the water under ordinary circumstances, the bird gives a large proportion of attention to the wing-feathers, some of which are passed through the bill, and the bases nibbled and otherwise manipulated. The rump and breast are also attended to, and while working at the latter, the bird tips itself over on its side, and, splashing in the water with one foot, rotates itself with a slow and irregular motion. At intervals the body is raised in the water, and the wings are vigorously flapped, lashing the water into spray. This last action frequently leads on to that form of play most characteristic of the species. The bird shows unusual animation, swimming to and fro in erratic fashion with nodding head, and finally diving excitedly and rapidly, the wings held half-open at the moment of submergence. Such play, which is readily to be distinguished from the more deliberate and systematic diving for food, is thus very similar to the diving of the Mallard in like conditions, but is perhaps less common of occurrence and performed with less abandon than in the latter species. The features of preening which seem to be more typical of the nesting season, are best seen in a duck ashore, as is so often the case at that time of year. Standing in a semi-erect attitude, the bird confines its attention largely to the upper part of the breast, nibbling and pulling at the bases of the feathers, and

intermittently using the bill as a comb, running it through the feathers with unusual persistency and force. The duration of the preening seems likewise to be unusually prolonged, and it is a common sight to see birds surrounded by a considerable quantity of down and contour-feathers dislodged during the process. The general aspect of the proceedings is, in fact, strongly suggestive of some irritating factor at work, inducing the birds to preen with greater frequency and with more than customary vigour. Such an irritating factor, if it exists, is of obvious interest in its possible bearing on the well-known habits of the species in connection with the nest. This tendency to emphasised preening extends to the male—although in his case any dislodgment of feathers is much less in evidence—and that such is the case might appear to be an objection to the view suggested: but there is, it appears, sufficient independent evidence to show that the nesting-instincts of the race are not confined to the female sex.

Apart from the nesting season Tufted-ducks are to be seen ashore only on infrequent occasions, but in this respect their habits undergo a notable alteration subsequent to the settling down in the breeding-quarters, when much time is passed ashore. Some of their activities on land are suggestive. Perhaps in this connection I may be permitted to give from my notes one or two representative extracts:—

“*22nd April* . . . .—A drake in the water swam up to a pair of birds sitting side by side on the grass by the edge of the pond. As he approached he adopted the typical attitude of hostility, the head laid back on the shoulders and the tip of the bill raised. He jumped ashore and drove off the female, and settled down in the vacated place, but almost immediately took to the water again. The drake on shore thereupon went into the same spot (a shallow hollow in the grass) and squatted in it. After a short period of inactivity he began to pluck with his bill at the surrounding vegetation, and later took a few steps forward to the water's edge and plucked at pieces of grass or other substance, returning afterwards to the same hollow. A Coot now came on shore and commenced grazing, and on passing near the drake made a threatening motion, whereupon the latter bird moved hastily aside a few feet. On the disappearance of the Coot, the female Tufted-duck went in turn to the hollow, and settling down in it, began pulling at the surrounding grass in the manner previously shown by the male, also reaching out to the water's edge and attempting to pluck some long vegetation growing there. I could not, however, actually discern anything in her bill. A Waterhen next proved a fresh source of disturbance,

and the duck withdrew somewhat from the hollow. Here she continued to pick at the vegetation, and her mate, sitting alongside her (also out of the hollow), behaved in a similar way, going through the pantomime of pulling up grass and dropping it beside him, or even throwing it over his back. As before, I failed to detect anything held in the bill."

"*23rd April, 7.55 A.M.*—Three pairs of birds sitting on grassy bank close to the water's edge, each couple a little apart. One pair at same spot as yesterday. 8.5—Male of this pair settles in hollow used yesterday, and pulls a little at surrounding vegetation, later dozing; female of second pair plucking slightly and vaguely at grass beside her. All six birds doze intermittently, but frequently rising to preen. 8.15—Male of first pair, after a spell of preening, plucks at grass; nearly all now preening . . . the females more persistently than the males. 8.25—Male of first pair (still in the hollow) plucks at grass, wheels round in his place and settles down again, renewing his plucking actions a little later. 8.40—Male of third pair goes through similar antics, and now, for the first time, strands of grass are clearly visible in the bill; they are pulled up and dropped by the bird's side. Later he goes to sleep, his head nodding forward. 8.50—Male of first pair plucks a little and goes through the action of swallowing."

"*29th April, 10.20 A.M.*—Five pairs on bank of pond, all walking to and fro rapidly and restlessly, pecking as they go amongst the grass as if feeding. 10.29—Some begin to settle down, preening themselves, one female 'combing.' 10.35—A female makes repeated efforts to pluck the blossom of a *Narcissus*, which rises a little above her head. . . . 11.9—Female of a pair on the water swims into a rush-clump growing at the edge of the pond, her mate following; both disappear from sight. Two minutes later the male reappears on bank behind rush-clump; he plucks a little in usual manner, later preening. 11.14—His mate appears on bank beside him; both now plucking a little, vaguely. . . . 12.5—Male of pair close to shore swims to a rush-clump, into which he vanishes. His mate follows him, pausing a little at the edge of the clump to pull at the rushes, before disappearing. Both soon come out again, the female now leading and going into another clump a few yards further along the shore; the drake follows. Three minutes later the duck emerges, proceeding straightway to a third *Juncus*-clump, into which she disappears as usual. The male awaits her at the edge. Later both set out for the island, the female in the van; and the latter, after one or two abortive efforts, succeeds in springing up its somewhat steep banks. Making her way into a bed of *Epilobium*, she

appears to pull at the last-year's dry stems, but my view is obscured, and her exact movements are not seen. In a few minutes she comes out to the edge of the island, using her bill amongst the grass, but almost immediately returns to the willow-herb clump.<sup>1</sup> Meanwhile her mate remains in the water close to the island, awaiting his partner's return. Soon he is approached and attacked by another drake, and is pursued to some distance, where he is later joined by his mate from the island. The mate of the newly arrived drake cruises to and fro by the island, with an evident half-formed intention of going ashore: but she does not do so, eventually commencing to dive for food."

Such behaviour as this is to be witnessed daily from mid-April onward, and is shared in equally for several weeks by the two sexes; but a rapid waning is to be noted in the drake about the period of egg-laying. The described grass-plucking habit is often curiously vague and uncertain in character, and is obviously at least semi-unconscious on the part of the birds. It is difficult to doubt its (indirect) connection with the instinct of nest-construction. If this be so, the drake's participation has a peculiar interest.

Egg-deposition takes place at an early hour of the day. When the female goes to the nest to lay, the drake commonly accompanies her, and remains a while in close proximity. His attitude is one of expectancy, and a feature is the repeated opening and closing of the mandibles, suggesting the regular utterance of a note, which must, however, be very low in tone, since it has never been audible to me. It is, perhaps, the common liquid note of other occasions. Under such circumstances the drake acts as a guard of the nesting-site, and displays great jealousy of the approach of other individuals, male or female, driving them off with determination. Females likewise show jealousy in the neighbourhood of their chosen nesting-site, and may occasionally be witnessed repulsing others of the same sex. Nevertheless it is evident that interlopers may make use of the same nest: and this is no doubt more commonly the case where suitable nesting-sites are limited in comparison with the number of birds.

The young dive freely for food when still only a few hours old. The instinct is no doubt congenital: but there are indications that it is not perfectly so. Young broods newly on the water may sometimes be watched for hours without being seen to dive, feeding entirely on surface-insects and vegetable matter. When they do commence to go under, some little awkwardness and uncertainty is

<sup>1</sup> Which contained a nest later in the same season.



apparent, though such disappears within a very short period. At this early age they spend from five to eight seconds submerged, which period increases to ten to fifteen seconds at ten days, and in proportion at other ages; but the depth of water has a modifying influence. They are nearly full-grown when five weeks old, and are able to fly at six weeks.

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A LIST OF THE DIPTERA MET WITH IN  
WESTER ROSS, WITH NOTES ON OTHER  
SPECIES KNOWN TO OCCUR IN THE  
NEIGHBOURING AREAS.

By COLONEL J. W. YERBURY, R.A., F.Z.S.

(Continued from page 232.)

ORTHORRAPHA BRACHYCERA.

STRATIOMYIDÆ.

106. *Oxycera nigripes*, Inchnadamph, June and July 1911; in numbers (Verrall). Mr Verrall found this species common in a wet spot on the banks of the river Tarragill, near Inchnadamph. Although I believe I found this exact spot in 1911, the species was quite absent; it occurred, however, in abundance on the banks of the burn running down from Ardmore. It seems to be doubtfully distinct from *O. pygmaea*.
107. *Sargus flavipes*, Mg., Golspie, 13th August 1900.
108. *S. rufipes*, Wahlb., The Mound (Verrall).
109. *S. iridatus*, Scop., Golspie, 29th and 31st July 1900.
110. *Chloromyia formosa*, Scop., Golspie, 11th and 29th June 1904.
111. *Microchrysa polita*, L., Golspie, 31st July 1900.
112. *M. flavicornis*, Mg., Golspie (Verrall).
113. *M. cyaneiventris*, Zett., Golspie, 13th June 1904.
114. *Beris clavipes*, L., Tongue (Verrall).
115. *B. vallata*, Forst., Golspie (Verrall).
116. *B. chalybeata*, Forst., Golspie (Verrall).
117. *B. geniculata*, Curt., Golspie (Verrall).
118. *B. morrisii*, Dale, Golspie (Verrall).

## LEPTIDÆ.

119. *Xylophagus ater*, F., The Mound (Verrall).  
 120. *Leptis scolopacea*, L., Loch Assynt, 17th June 1911; Golspie, 19th August 1904; and Tongue (Verrall).  
 121. *L. notata*, Mg., Syre, 28th May 1896.  
 122. *L. tringaria*, L., Golspie, 13th and 31st July 1900.  
 123. *L. lineola*, F., Golspie, 13th June 1904.  
 124. *Symphoromyia crassicornis*, Panz., Loch Assynt, 26th July 1911 (only specimen); Golspie, 22nd August 1900; Tongue (Verrall).  
 125. *Chrysopilus cristatus*, F., Loch Assynt, 9th June 1911; The Mound, 20th June 1904; Tongue (Verrall).  
 126. *C. aureus*, Mg., Inchnadamph (Verrall).  
 127. *Ptiolina atra*, Staeg., Loch Assynt, 3rd June 1911 (the only specimen).  
 128. *Spania nigra*, Mg., Loch Assynt, 10th June 1911; The Mound, 20th to 28th June 1904; Tongue (Verrall); Gairloch (Verrall).

## TABANIDÆ.

129. *Hematopota pluvialis*, L., Inchnadamph (Verrall)—not met with by me; Invershin, 13th August 1900.  
 130. *H. crassicornis*, Wahlb., Lochinver, 8th July 1911; Loch Assynt, 8th June and 19th July 1911; Inchnadamph (Verrall). This species was flying round me in countless numbers during the few hot days of early July, and was a terrible pest; the following occasions may be particularly cited, viz.—Kirkaig Valley, 12th July 1911; shores of Glencanisp Loch, 11th and 13th July 1911.  
 131. *Tabanus (Therioptectes) montanus*, Mg., Lochinver, 1st to 16th July 1911, in great numbers; Kylesku, 5th July 1911; Loch Assynt, 19th July 1911; Invershin, 19th July 1911. Verrall records it from Invershin and Sheil House, Ross. This species was unpleasantly in evidence during early July in the valley of the Inver; it was comparatively rare at Inchnadamph. The variation in the marking on the eyes of this species is worthy of note. Some have three distinct bands, others have either the upper or the lower band, or both bands faint and indistinct, and sometimes quite absent.  
 132. *T. (Therioptectes) tropicus*, Mg., The Mound (Verrall).  
 133. *T. (Therioptectes) luridus*, Fallen., Golspie, 9th June 1904.  
 134. *T. (Therioptectes) distinguendus*, Verr., The Mound (Verrall).

135. *T. cordiger*, Wied., Lochinver, 24th June to 13th July 1911; common. The first Tabanus to put in an appearance in the valley of the Inver.
136. *T. sudeticus*, Zeller., Lochinver, 7th to 12th July 1911; common. Occurs in some numbers along the road to the Kirkaig River, but is not numerous elsewhere.
137. *Chrysops relictus*, Mg., Lochinver, 20th June to 10th July 1911, common; Loch Assynt (Verrall). To me it seems probable that the dark *Chrysops* referred to by Verrall (*British Flies*, p. 428) is the male of this species, and not *C. sepulchralis*, as suggested. I saw no ground round Lochinver at all like the places frequented by *C. sepulchralis* on Studland and other Dorset heaths. Pleské (*Ann. Mus. Zool. S. and P.*, xv. (1910), p. 436) has apparently overlooked Verrall's remarks regarding *C. sepulchralis* and *C. maurus*, and the probability of these two names being synonyms for one species. Previous to the above record, I had not met with any species of *Chrysops* to the north of Nairn.

## THEREVIDE.

138. *Thereva arcuata*, Lw., Golspie (Verrall).
139. *T. nobilitata*, F., Golspie (Verrall).
140. *T. plebeia*, L., Golspie (Verrall).
141. *T. bipunctata*, Mg., Golspie (Verrall).
142. *T. annulata*, F., Sutherland (Verrall).

Though *Thereva* is a common genus at Golspie, it seems to be quite absent from the neighbourhoods of Lochinver and Inchnadamph; this may be due to the paucity of broad-leaved trees, and in the case of *T. annulata* and *bipunctata*, to the absence of murrum grass and sand-dunes.

## ASILIDE.

143. *Isopogon brevirostris*, Mg., Lochinver, 24th June 1911, in fair numbers, sitting on stones in an inclosure marked on the Ordnance Survey map as "Market Site"; Loch Maree (Verrall). Lochinver on the west coast, and Golspie on the east, seem to be the northern limit of what may perhaps be called the southern fauna: this species and the next reach their northernmost boundary at these two places, and many other conspicuous southern insects seem to do the same, e.g., *Brachyopa bicolor*, *Leucozona lucorum*, *Chrysops relictus*,

*Chrysochlamys cuprea*, etc. Many indeed seem to be isolated at these places, their nearest congeners being far away.

144. *Leptogaster guttiventris*, Zett., Golspie, 13th and 18th August 1900.

## EMPIDÆ.

145. *Hybos femoratus*, Müll., Lochinver, 27th and 29th June and 7th July 1911; Loch Assynt, 12th June 1911; Tongue, 18th June 1884 (Verrall).
146. *H. grossipes*, L., ♂, Lochinver, 22nd June 1911. This specimen agrees with Lundbeck's identification of this species, but its correctness is by no means established.
147. *H. culiciformis*, F., Lochinver, 1st July 1911; Golspie, 28th July 1900.
148. *Cyrtoma spuria*, Fall. (= ? *pilosa*, Lundb.), Loch Assynt, 18th June 1911.
149. *C. nigra*, Mg., ♂, Lochinver, 27th June 1911; ♀, Loch Assynt, 8th June 1911.
150. *C. sp. inc.*, Golspie, 25th August 1900.
151. *Rhamphomyia anomalipennis*, Zett., ♀, Loch Assynt, 5th June 1911.
152. *R. stigmosa*, Macq., Loch Assynt, 2nd and 6th June 1911. Apparently the *R. albosegmentata* of Verrall's list.
153. *R. sulcata*, Fall., Loch Assynt, 2nd, 7th, 10th, and 21st June 1911; Golspie, 9th June 1904.
154. *R. nigripes*, F., Loch Assynt, 1st, 7th, and 16th June, 1911.
155. *R. tarsata*, Mg., Lochinver, 23rd June 1911.
156. *R. sp. inc. (nitidula, Zett. ?)*, ♀, Loch Assynt, 3rd June 1911.
157. *R. sp. inc.*, ♂, Lochinver, 24th June 1911.
158. *R. dentipes*, Zett., ♂, Lochinver, 21st June 1911 (the only specimen).
159. *R. geniculata*, Mg., Loch Assynt, 2nd, 3rd, and 5th June, 1911; Lochinver, 20th, 21st, and 23rd June, and 7th and 13th July, 1911.
160. *R. hybotina*, Zett., Loch Assynt, 9th June 1911.
161. *R. flava*, Fall., Golspie, 16th June 1904.
162. *R. spirsirostris*, Fall., recorded by Verrall from Tongue, 18th June 1884; but Mr Collin informs me that these specimens are apparently *R. dissimilis*, Zett.
163. *Empis stercorea*, L., Loch Assynt, 2nd June 1911; Golspie 13th June 1904.
164. *E. tessellata*, F., Loch Assynt, 5th June 1911.
165. *E. sp. nov. ?* Loch Assynt, 1st June 1911. This species stands

- in Mr Verrall's collection under the MS. name of *Empis snowdoniana*.
166. *E. trigramma*, Mg., Loch Assynt, 1st, 7th, and 12th June 1911; Golspie, 14th June 1904; Tongue, 18th June 1884 (Verrall).
167. *E. vernalis*, Mg., Loch Assynt, 8th, 16th, and 18th June 1911; Lochinver, 24th and 30th June and 1st July 1911.
168. *E. borealis*, L., Loch Assynt, 1st June 1911; Kinlochewe, 23rd May 1892 (Grant).
169. *E. lucida*, Zett., Loch Assynt, 5th June 1911.
170. *E. opaca*, F., Tongue, 18th June 1884 (Verrall).
171. *Hilara matrona*, Hal. (*nec* Strobl)—*spinimana*, var. *spinigera*, Strobl—Lochinver, 30th June, and 1st, 7th, 8th, 11th July, 1911; Loch Assynt, 20th July 1911; very common.
172. *H. maura*, F., Loch Assynt, 1st, 2nd, 7th, 10th, and 17th June 1911; Lochinver, 23rd June 1911.
173. *H. interstincta*, Fall., Lochinver, 23rd, 24th, and 30th June, and 1st and 11th July, 1911.
174. *H. chorica*, Fall., Lochinver, 18th June and 1st and 7th July 1911; Loch Assynt, 8th and 11th June, and 19th, 20th, and 23rd July, 1911.
175. *H. pubipes*, L., ♂ and ♀, Lochinver, 11th and 13th July 1911.
176. *H. flavipes*, Mg., Lochinver, 22nd June and 8th and 13th July 1911.
177. *H. litorea*, Fall., ♂, Lochinver, 11th July 1911.
178. *H. canescens*, Zett., ♂ and ♀, Lochinver, 1st July 1911.
179. *Ragas unica*, Wlk., ♀, Loch Assynt, 7th June 1911.
180. *Trichina clavipes*, Mg., Loch Assynt, 17th June 1911; Lochinver, 7th July 1911; The Mound, 16th June 1904.
181. *Ocydromia glabricula*, Fall., Loch Assynt, 6th June 1911; Golspie, 14th June 1904.
182. *Clinocera (Kowarzia) bipunctata*, Hal., Loch Maree, 7th June 1884 (Verrall).
183. *Cl. nigra*, Mg., Loch Assynt, 20th July 1911.
184. *Cl. (Heleodromyia) stagnalis*, Hal., Loch Assynt, 9th June 1911; Golspie, 18th June 1904.

(To be continued.)

## OBITUARY.

RAMSAY HEATLEY TRAQUAIR, M.D., LL.D., F.R.S.

WE regret to announce the death, on the 22nd November, of Dr Ramsay Heatley Traquair, the distinguished palæontologist and authority on fossil fishes. For some months past an increasing weakness had been noticed by those who were associated with him, but he continued to work bravely on up to within a few weeks of his decease. Among the latest tasks accomplished by him may be mentioned a "Catalogue of the Type and Figured Specimens of Fossil Fishes in the Royal Scottish Museum."

We hope to publish in an early issue a more extended notice of the life and labours of our late distinguished colleague, who contributed on several occasions to the pages of the *Annals of Scottish Natural History*.

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## NOTES.

**Great Grey Seal and Coal-fish Incident.**—During a residence on the main island of the Pentland Skerries in May last I was the witness of an incident that may interest some of our readers. On the evening of the 9th I observed a fine Great Grey Seal (*Halichorus grypus*) behaving in a somewhat unusual manner, and on watching it I found that it had captured a Coal-fish (*Gadus virens*), about 4 ft. in length. The fish had been purposely only partially paralysed by its captor, inasmuch as it was unable to maintain its usual position in the water, but swam somewhat vigorously at the surface on its back. The Seal was playing with it as a cat plays with a mouse. It allowed its victim to swim away some little distance, recaptured it, took it in its mouth, dived with it, rolled over it, and struck it with its hind flippers. After these proceedings had been repeated several times, the Seal, having to all appearance thoroughly enjoyed the fun, thought it was time to proceed to business—to wit, to make a meal of its capture. It seized the fish by the stomach and tore out the entrails, which it swallowed at a single gulp. It then very dexterously stripped off the skin from head to tail, commencing on the head and using its fore flippers to hold its prey, accomplishing the operation in a manner that no fishmonger could excel. The skin formed the second mouthful. The naked carcase was then disposed of piecemeal in chunks of large size, until all was finished, the Seal diving

with the remains between each mouthful, and cutting off another steak on his appearance on the surface. During these operations the animal stood, as it were, in the water in a perpendicular position. It was by no means shy, for I was seated in an exposed position not more than 25 yards away and saw all the proceedings most clearly through my binoculars. I blew a loud blast on a shrill whistle after the acts just described had closed, but the Seal was in no way perturbed by the unusual sound.—WM. EAGLE CLARKE.

**Jays in Dumfriesshire.**—The Jay (*Garrulus glandarius*) being a local resident in this county, confined more or less to the littoral parishes, it is interesting to know that a bird of this species was seen near Dardarroch (Glencairn) from 1st to 7th October, and that three were seen near Capenoch (Keir) on 26th October, 1912. No specimens having been handled, it is impossible to say whether these individuals indicate a local movement, or are from continental Europe.—HUGH S. GLADSTONE, Thornhill, Dumfriesshire.

**The Winter Quarters of the Yellow Wagtail.**—In an article on "The New Nomenclature of British Birds," in the *Scottish Naturalist* for September 1912, p. 198, it is stated that the winter quarters of the Yellow Wagtail extend as far south in Africa as the Transvaal and Natal. In the *Handlist of British Birds*, p. 39, on the other hand, it is stated that the British Yellow Wagtail migrates through West Europe to West Africa. This is mentioned by your reviewer as a mistake on the part of the writers of the *Handlist*, but I venture to say that the statement in the *Handlist* will be found to be absolutely correct. Yellow Wagtails undoubtedly migrate south to the Transvaal, Natal, and exceptionally even Cape Colony, but these birds are not the British race, *M. flava rayi*, but the very similar *M. flava campestris*, which breeds in the Kirghis Steppes and migrates through East Africa. The British race, on the other hand, passes through the Iberian peninsula and Western Africa south to the Congo, but most birds appear to winter between Senegambia and the Benue (see Hartert, *Vögel, Pal. Fauna*, i., pp. 294-5). Seebohm regarded the two forms as identical, and they are certainly closely allied, but it is now generally admitted that they are distinguishable.—F. C. R. JOURDAIN, Ashbourne.

[We are quite aware of all that Mr Jourdain sets forth in the above note. Stark, in his standard work on the Birds of South Africa (1900), treats the two forms as identical, and we have yet to learn that it is possible to distinguish between the two races in their winter plumage.—EDS.]

**Red-breasted Flycatcher at the Pentland Skerries.—**

On 30th September there were a number of migratory birds on the island, and among them I detected what I felt sure was a Red-breasted Flycatcher (*Muscicapa parva*) from the white on its tail, which it spread out as it flitted about on the rocks. It was a very brisk little bird, and I had some difficulty in securing it in order to establish its identity. It proved to be an adult male, and is now in the collection in the Royal Scottish Museum.—JOHN BAIN, Pentland Skerries.

**Reed-warbler in the Orkneys.**—On the 28th September I saw a small bird which was unknown to me, on the island of Aukerry. It was secured and sent to Mr Eagle Clarke for determination, and proved to be a Reed-warbler (*Acrocephalus streperus*). Mr Eagle Clarke informs me that this bird has not hitherto been obtained in Orkney, and that it is the fourth known to have occurred in Scotland.—H. LAIDLAW, Aukerry.

**Late stay of Swifts in Banffshire.**—Following upon the note in the November number of the *Scottish Naturalist*, on the late stay of Swifts (*Cypselus apus*) in Edinburgh this year, it may be of interest to state that I saw one Swift here on 29th September, at 6 P.M., circling round the church steeple, apparently trying to alight but continually blown aside by the wind, which was strong. Next day I saw a Swift again, probably the same bird.—JANE GOWAN, Cullen, Banffshire.

**Common Guillemot and Barn Owl near Glasgow.—**

On 13th October I saw a Guillemot (*Uria troile*) which was found here on that day alive but unable to fly. There had been no storm previously to drive it so far inland. Four days later I found a Barn Owl (*Strix flammea*) sitting in a large yew tree, and on 21st October I saw a Barn Owl sitting in a thorn hedge about half a mile from where I saw the Owl on the 17th. Possibly it was the same bird. I have never seen a Barn Owl here before.—JAMES BARTHOLOMEW, Torrance, near Glasgow.

**Quail nesting in Kirkcudbrightshire.**—The nest of a Quail (*Coturnix coturnix*), containing eight or nine eggs, was discovered this summer, not far from Dalry. The nest was in a hay-field by the river Ken, and was unfortunately destroyed by the reaper when cutting hay.—HUGH S. GLADSTONE, Thornhill, Dumfriesshire.

**Food of the Common Partridge.**—In connection with Mr Grimshaw's interesting note (p. 249) on the food of the Pheasant,



the following observation on that of the Partridge (*Perdix perdix*) seems worth recording. On 18th October I received from Dr Harvie-Brown, part—about a third—of the contents of the crop of a Partridge shot on the 15th, “on rushy, rough, grass-land” on his Denny Hills shootings, Stirlingshire. The material sent I found consisted almost entirely of small flies, of which 1373 were counted, all belonging to one species, namely, *Bibio lepidus*, Lw. (specimens have been shown to Mr Grimshaw). The only other things noticed were a few blades of grass and bits of *Galium saxatile*, and one or two seeds of *Juncus*. If the remainder of the contents of the crop were similar to the portion sent me—and I have been assured it was—the total number of flies in the crop must have been about 4000. The crop of another Partridge killed at the same time is stated to have been filled with the same food-material. Curiously enough, *Bibio lepidus* has not previously been recorded from the Forth Area. In the above material males far outnumbered females, the ratio being something like twenty to one. —WILLIAM EVANS.

**The Little Gull near Dunbar (Forth).**—On 2nd October 1912, a Little Gull (*Larus minutus*)—young male—was shot at the mouth of the Tyne, near Dunbar, and taken to Mr D. Bruce, who kindly forwarded it to me. It was evidently a “piner”—very thin, and infested with Mallophaga. These belonged to four species representing as many genera, the most abundant being *Airmus eugrammicus*, Nitzsch, a prettily marked species apparently peculiar to the Little Gull, and only recently recorded as British (see my paper on “Forth” Mallophaga in *Proc. Roy. Phys. Soc.*, xviii., 265).—WILLIAM EVANS.

**Tunny stranded at Weisdale, Shetland.**—On 26th September a large fish was found stranded at the head of Weisdale Voe, which on examination was found to be a fine specimen of the Tunny (*Orcynus thynnus*). The fish had every appearance of having reached the shore quite a short time previous to its being found. The Tunny measured 8 feet in length, 6 feet in girth, and the tail was 35 inches from tip to tip. This is the first Tunny found in Weisdale Voe in living memory.—JOHN S. TULLOCH, Lerwick.

**Tunny in the Firth of Forth.**—On 18th October we found a Tunny (*Orcynus thynnus*) stranded in Largo Bay. It was about 8 feet long, but had been considerably mutilated, so that the sex could not be determined, as we are kindly informed by Professor M'Intosh. The skeleton has been secured for the St Andrews University Museum. This fish seems worth a record, as few Tunnies

have previously been reported in the Forth Area.—LEONORA JEFFREY RINTOUL and EVELYN V. BAXTER, Largo.

**Monomorium pharaonis, L., in Kincardineshire.**—In April 1909, numerous specimens of this species of Ant were given to the writer by Mr Campbell, Auchinblae, near Fordoun. They had become a regular plague in his business premises, being specially destructive to sugar. The identification is due to Mr Donisthorpe, who tells me that little, unfortunately, can be done to eradicate this pest.—JAMES WATERSTON, Ollaberry, Shetland.

**Mallophaga from the Ptarmigan.**—Through the kindness of Dr Harvie-Brown I had an opportunity in the end of October of examining two Ptarmigan (*Lagopus mutus*) from Inchnadamph, Sutherlandshire, and from them obtained a fair number of Mallophaga belonging to two species—a *Nirmus* (♂ ♀) and a *Goniodes* (♂ ♀). So far as I am aware, no Mallophagan parasite has hitherto been recorded from the Ptarmigan in this country. In his *Anoplurorum Britannie* (1842), Denny says of *Nirmus cameratus*, N., “Common upon the Red Grouse and Black Grouse, and I suspect also upon the Ptarmigan”; and of *Goniodes tetraonis*, D., “Common upon both the Black and Red Grouse; upon the Willow or Hazel Grouse (*Tetrao saliceti*) I find a similar but distinct species, rather broader in the abdomen, and of much darker colour. What infests the Ptarmigan I have never been able to ascertain.” Grube, in Middendorf’s *Siberian Reise* (1851), records *Nirmus cameratus* from *Lagopus albus* (= *saliceti*) and *L. alpinus* at Boganida, and *Goniodes tetraonis* from *L. albus* at Boganida and *L. alpinus* at the Taimyrsee. *L. alpinus* (Nils.) is a synonym of *L. mutus* (Montin), but the Ptarmigan met with by Middendorf in these northern districts of Siberia are more likely to have been *L. rupestris* (the Rock-Ptarmigan) than true *L. mutus*. Compared with specimens of *Nirmus cameratus* from Red Grouse—and also from the Black Grouse—my *Nirmi* from the Ptarmigan differ so far as I see only in being darker and greyer, with the marginal lines almost black. As the difference, however, is probably constant, I venture to designate them *N. cameratus*, Nitzsch, var. *nigrescens*. The *Goniodes* agree so well with *G. tetraonis*, Denny, from Red and Black Grouse, that I unhesitatingly identify them with that species. In them also the markings are on the dark side, but not more so than in some examples from the other birds. Since writing the above I have found similar specimens on an Inverness-shire Ptarmigan kindly submitted to me by Mr T. Speedy.—WILLIAM EVANS.

**Two rare Corals, and Polyzoa from Rockall.**—Whilst fishing in deep water off Rockall, between 13th and 19th October 1912, an Aberdeen fishing-boat caught upon its lines two fine colonies of Coral, which were landed in good condition.

A large creamy-white colony, 21.5 cm. high and 10 cm. across, represents the rare British Tuft-Coral, *Lophohelia prolifera* (Pallas), a representative of the Madreporae or Reef-Corals. The species has been found in deep water off Skye, and one enormous example, 6 lbs. in weight, was found between Rum and Eigg, and perhaps exists, as an unlabelled specimen, in the Natural History Museum at Marischal College, Aberdeen. The "Porcupine" obtained examples from the south and south-west of Ireland, and from the same area many colonies have recently been dredged by the Irish Fisheries Investigation, at depths from 215 to 800 fathoms. Besides occurring dispersed over the North Atlantic Ocean, the Tuft-Coral has been found in the South Atlantic and Indian Oceans.

The second colony is a Hydrozoan Coral belonging to the order Stylasterina. It is creamy-yellow in colour, with traces of pinkish patches, and is a complete and well-developed example of *Stylaster gemmascens*, M. Edw. and Haime. The colony is 10 cm. high and 9.5 cm. broad, with base widespread and massive, supporting a stem 12 mm. in diameter, which divides into two main branches, 7 mm. in diameter. The polyp systems (cyclostems) are very wide, sometimes 2 mm. across, and are notched to hold fourteen to sixteen protective individuals (dactylozooids). *Stylaster gemmascens*, described originally from the Indian Ocean, was found in the North Atlantic at a depth of 530 fathoms by the "Lightning" and "Porcupine." It has been recorded from great depths in the Faldenfjord, Norway, by G. O. Sars (1872), and Prof. Hickson and Miss England have examined specimens from the Sulu Sea, East Indies (1905). That it is not uncommon off Rockall is indicated by the fact that an example from this neighbourhood has already been recorded, by Prof. J. Arthur Thomson, in *Proc. Roy. Phys. Soc.*, vol. xviii., 1910, p. 61.

In company with the Corals, from the same area, was a colony, with spread of 10 cm., of the coral-like Polyzoan, *Porella compressa* (Sowerby), and on it were growing two examples of encrusting Polyzoa—*Membranipora catenularia* (Jameson), and *Lichenopora hispida* (Fleming).

The Rockall Corals are now to be seen in the British Hall of the Royal Scottish Museum.—JAMES RITCHIE.

## BOOK NOTICES.

REPORT ON SCOTTISH ORNITHOLOGY IN 1911, INCLUDING MIGRATION, by Evelyn V. Baxter and Leonora J. Rintoul. Edinburgh: Oliver & Boyd. London: Gurney & Jackson. Price 1s. 6d. net.

We heartily welcome this Report, and congratulate the authors on the excellence of their work and on the very voluminous and widespread nature of the data upon which it is based. It embraces Scotland from Tweed and Solway to Unst (the northernmost of our Isles), and from lone St Kilda to the entire Scottish littoral of the North Sea. The Report extends to no less than 80 pages, and its various aspects are treated of comprehensively under the following ten sections:—Introductory; Species new to Scotland; Uncommon Visitors and Birds new to Faunal Areas; Extension of Breeding Range; Summer and Nesting; Winter Plumage, Food, Habits, etc.; Migration-Summary, and Notes on Bird Movements. We trust that the labours of these indefatigable workers and excellent original observers will meet with the recognition they so well deserve. Their generosity, too, is worthy of mention; for not only have they borne the whole expense of the publication of the Report, but they have presented copies of it to all the lightkeepers and others who have contributed observations. We trust the Report will have a sale commensurate with its importance, and encourage its authors to prepare and publish it annually.

THE HUMBLE-BEE: ITS LIFE-HISTORY, AND HOW TO DOMESTICATE IT, by F. W. L. Sladen. London: Macmillan & Co., 1912. Price 10s. net.

This is a particularly interesting volume, based upon an intimate personal knowledge on the part of the author, of the genus *Bombus* (with its commensal *Psithyrus*), its various species as found in Britain, their life-history, nest-building, and habits. It is written in a clear, readable style, is beautifully illustrated, and tastefully printed. The descriptions of the various species are well compiled, while the plates, executed in coloured process, are excellent, representing nearly all the British forms in natural size and colour. The book should prove useful to the systematist, inspiring to the young amateur, and of much interest to the general reader.

WILD LIFE IN THE WEST HIGHLANDS, by Charles Henry Alston.  
With illustrations by A. Scott Rankine. Glasgow: James  
Maclehose & Sons, 1912. Price 6s.

The wild life of the Highlands is of especial interest to Scottish Naturalists, and the writer of this volume has presented some well-written sketches describing his observations—the result of long residence in the area—of their furred and feathered inhabitants. The chapters deal with miscellaneous subjects, such as the extermination of the last Wolf in Scotland; the habits of the Badger, Grey Seal, and Wild Cat. The Beaver, and Scottish tradition regarding it, also receives notice, while the Stoat and such “smaller deer” are likewise treated. The reader will probably find the greatest interest lies in the chapters devoted to bird-life, where the author has much original observation to record, and all his notes and suggestions are both fresh and stimulating. “The Birds’ Tree Breakfast-Table” suggests an admirable line for bird watching, and one particularly appropriate for the winter months. Again, the chapter on the “Bird-Life of a Highland Parish” shows the importance and interest of local observation. The remaining chapters are somewhat miscellaneous, and it is a little surprising to read of the Elephant and the Kea in a volume entitled *Wild Life in the West Highlands*. However, some readers may be glad to avail themselves of Mr Alston’s knowledge of two such different members among Nature’s children, and all will find the illustrations by Mr Scott Rankine decidedly pleasing: especial merit might be accorded to “in the sanctuary,” also to the Lesser Terns and Peregrine Falcons.—G. E. G. M.

## GLEANINGS.

The latest issue of the *Glasgow Naturalist* (vol. iv., No. 4), dated September 1912, contains an article by John Craig and Matthew Barr, entitled “The Birds of the Parish of Beith and Neighbourhood” (pp. 97-114). The abundance of the Yellow Wagtail, the date of the first appearance of the Starling, and the occurrence of the Stock-dove, are referred to. The only other major article of a zoological nature is by Wm. J. McLeod, and bears the title “Further Notes on the Aquatic Coleoptera of the Monklands (Lanarkshire).” It occupies pp. 115-123, and gives details of forty-eight species. Several notes are published on pp. 135-138, dealing with the occurrence in the “Clyde” Area of interesting species of mammals, birds, and insects.

The last-issued No. of the *Proceedings of the Royal Physical Society* (Edinburgh), viz., No. 4 of vol. xviii., dated October 1912, contains several papers of interest to Scottish naturalists. The following have an intimate bearing on the Scottish fauna: "Some Northern Hydroid Zoophytes obtained by Hull Trawlers," by James Ritchie (pp. 219-230); "On *Docophorus bassane*, Denny, and *Lipeurus staphylinoides*, Denny," by James Waterston (pp. 248-250); and "Note on Mallophaga from the Little Auk or Rotchie (*Alle alle*), with list of species taken on birds and mammals in the Forth Area," by William Evans (pp. 265-276). We regret that pressure upon our space prevents a more detailed notice of these communications.

In the November number of *British Birds* the following occurrences of rare species are recorded:—On 5th May a male Lesser Grey Shrike (*Lanius minor*) was shot near St Leonards, Sussex, and a female of the same species two days later (p. 184); a male Grey-headed Wagtail (*Motacilla thunbergi*) was obtained near Rye on 28th April, and two male Western Black-eared Wheatears (*Saxicola hispanica*) were shot near Winchelsea on 16th and 19th May; a White-spotted Bluethroat (*Cyanecula cyanecula*) was found dead in a house at St Leonards on 22nd September (p. 187); and on 16th September a Baird's Sandpiper (*Tringa bairdii*) was obtained at Rye Harbour—being the fourth British example.

In the *Irish Naturalist* for November we note (pp. 209-214) an interesting article, entitled "Discovery of the Tree-pipit on the Tuskar Rock, Co. Wexford," from the pen of Prof. C. J. Patten. The bird is new to the Irish list, and two examples were obtained on migration at different dates in September. The paper is illustrated by a photographic plate, which shows some of the differences between the Tree-pipit and the Meadow-pipit.

Messrs J. R. le B. Tomlin and W. E. Sharp continue, on pp. 249-253 of the *Entomologist's Monthly Magazine* (November 1912), their paper entitled "Notes on the British Species of *Longitarsus*, Latr. (a genus of Coleoptera)." Dark examples of *L. ballote*, Marsh., are noted as occurring at Forres.

Prof. T. Hudson Beare, in the November number of the *Entomologist's Monthly Magazine* (pp. 255-257), records the occurrence of a new British Beetle at Nethy Bridge. The species in question is *Thanasimus rufipes*, Brahm, of which five examples were obtained from fir tops between 15th July and 6th August. A specimen was also taken a year previously, but not recognised at the time.

The same author records (*l.c.*, p. 263) the capture of a series of *Lathrobium dilutum*, Er., in the same locality in July and August. This Beetle was introduced as British three years ago, on the evidence of specimens taken at Dalwhinnie.

Under the title "Odonata in Perthshire," Kenneth J. Morton publishes a note in the *Entomologist's Monthly Magazine* (November 1912, pp. 264-265) on some Dragon-flies obtained in July at Rannoch and Glen Lochay. The species collected were *Aeschna juncea*, *A. cerulea*, *Somatoclora arctica*, *Cordulegaster annulatus*, *Libellula quadrimaculata*, *Pyrrhosoma nymphula*, and *Enallagma cyathigerum*.

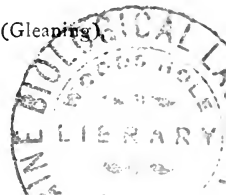
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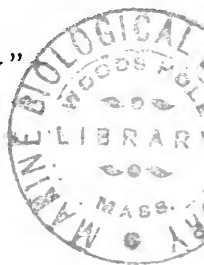
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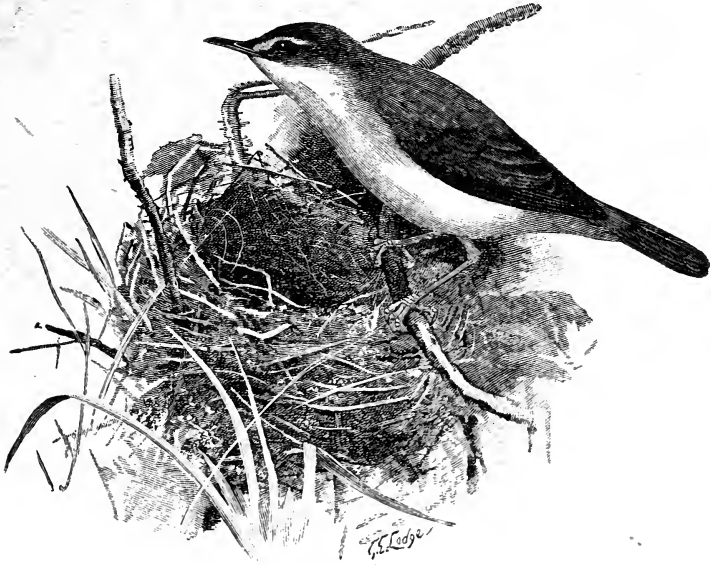
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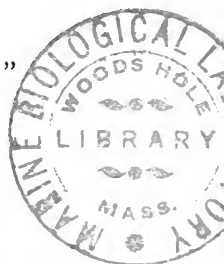
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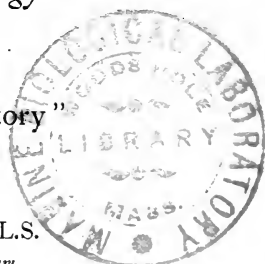
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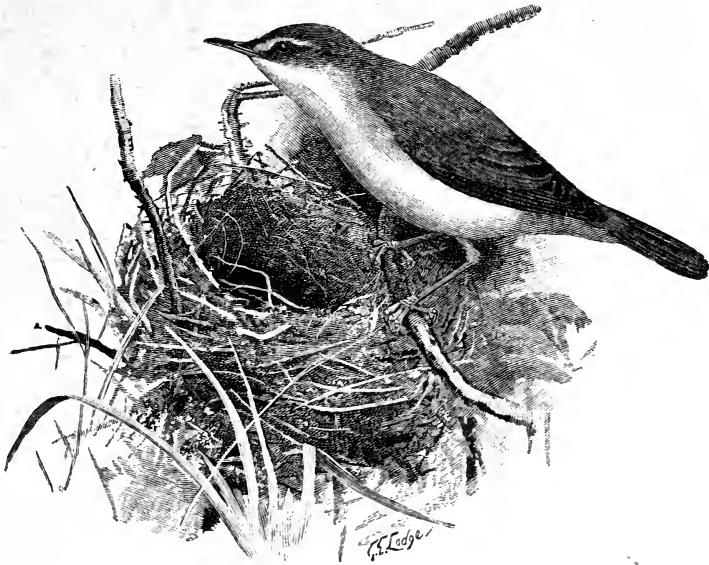
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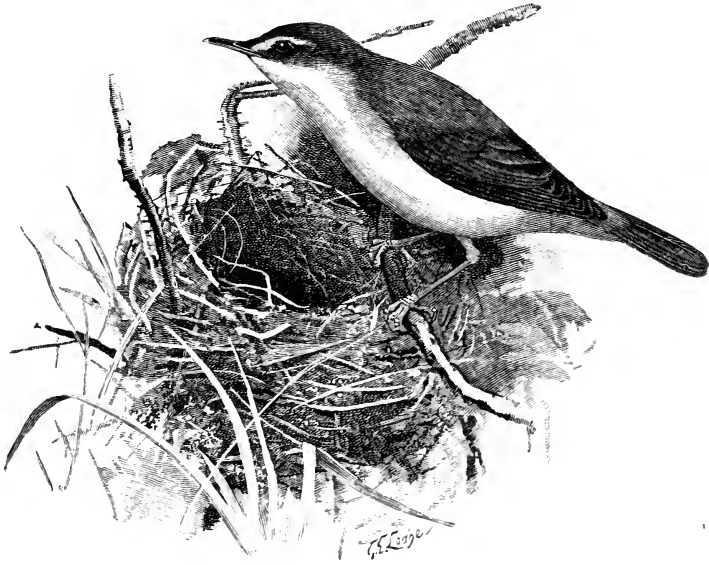
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"Mr Eagle Clarke's long-looked-for work is now before us, and as we should expect from the pen of so able an authority, we find these two volumes crowded with interesting and reliable information. These 'Studies,' as the author is careful to point out, do not comprise the 'last word' in the fascinating and intricate problems of bird migration, but deal solely with the author's own experiences, helped by the records accumulated when he was on the British Association Committee for the Study of Bird Migration, and consequently this work touches only on migrations which affect the British Isles. On this score we find the work all the more pleasing, as here we have a book which is the result of years of observation in many remote and eminently suitable 'migration stations,' written from first-hand knowledge, and free from the mass of wild speculations and theories which so frequently characterise the products of an armchair worker.

"In conclusion, we may say that we have nothing but praise for Mr Clarke's book, and congratulate him on bringing it to such a successful conclusion. It is eminently the product of a worker; to the beginner in the study of migration it will point out the right lines of investigation; to the student it gives much interesting matter for consideration, and it will be read with great pleasure by every ornithologist."—*British Birds*.

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