THE ZOOLOGIST FOR 1865.

Pp. 9385—9848.

E. NEWMAN, PRINTER, 9, DEVONSHIRE STREET, BISHOPSGATE.

THE

ZOOLOGIST:

A

POPULAR MISCELLANY

OF

NATURAL HISTORY.

CONDUCTED BY

EDWARD NEWMAN, F.L.S., Memb. Imp. L.-C. Acad.

VOLUME THE TWENTY-THIRD.

LONDON:

JOHN VAN VOORST, PATERNOSTER ROW.

M.DCCC.LXV.

But let me to the vale once more descend,
And mingle with the woodland choir, and join
Their various song, and celebrate with them
The woods, the rocks, the streams, the bosky bourne,
The thorny dingle and the open glade;
For 'tis not in their song, nor in their plumes,
Nor in their wondrous ways, that all their charm
Consists; no, 'tis the grove, their dwelling-place,
That lends them half their charm, that still is link'd
By strong association's half-seen chain,
With their sweet song, wherever it is sung.
And while this lovely, this congenial theme,
I slightly touch, oh, may I ne'er forget,
Nature, thy laws!

JAMES GRAHAME'S '*Birds of Scotland.*'

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THE ZOOLOGIST

FOR 1865.

Notices of New Books.

'*The Birds of India; being a Natural History of all the Birds known to inhabit Continental India.*' By T. C. Jerdon. In two Volumes. Vol. ii.; Parts 1 and 2. Calcutta: 1863—64.

(Third and concluding notice).

Very pleasant must it be to dwell in a land where the roseringed parrakeet is one of the commonest and most familiar of birds, decorating every garden and perching on every house-top, roosting together by hundreds among the bamboos, and, on returning to their feeding-ground in the morning, skimming over the surface of the country, and rising above every little obstacle that presents itself. Very strange it must be to visit bamboo-groves so full of feathered inhabitants that their cries are deafening from day-dawn to sun-rise, and from twilight to dark, giving the listener the idea of a thousand of the noisiest steam-engines, clanking, puffing, blowing and screaming simultaneously. But for ingenuity and architectural skill commend us to the weaver-bird, or "baya," as our author prefers to call it: here is a scrap of its biography:—

"*The Common Weaver-bird* (Ploceus baya).—The baya breeds during the rains, according to the locality, from April to September; but I am not aware if they ever have more than one brood. Its long retort-shaped nest is familiar to all, and it is indeed a marvel of skill, as elegant in its form as substantial in its structure, and weather-proof against the down-pour of a Malabar or Burmese monsoon. It is very often suspended from the fronds of some lofty palm-tree, either the Palmyra, cocoa-nut or date, but by no means so universally so as Mr. Blyth would imply, for a babool (*Acacia arabica* or *Vachellia Farnesiana*) or other tree will often be selected in preference to a palm-

tree growing close by, as I have seen, within a few miles of Calcutta, on the banks of the canal. Very often a tree overhanging a river or tank, or even a large well, is chosen, especially, as Tickell says, if it have spreading branches and scanty foliage. In India I have never seen the baya suspend its nest except on trees, but in some parts of Burmah, and more particularly in Rangoon, the bayas usually select the thatch of a bungalow to suspend their nests from, regardless of the inhabitants within. In the cantonment of Rangoon very many bungalows may be seen with twenty, thirty or more of these long nests hanging from the end of the thatched roof; and in one house in which I was an inmate, that of Dr. Pritchard, Garrison Surgeon there, a small colony commenced their labours towards the end of April, and in August, when I revisited that station, there were above one hundred nests attached all round the house! In India, in some localities, they appear to evince a partiality to build in the neighbourhood of villages or dwellings; in other places they nidificate in most retired spots in the jungle, or in a solitary tree in the midst of some large patch of rice cultivation. The nest is frequently made of grass of different kinds, plucked when green, sometimes of strips of plantain-leaf, and not unfrequently of strips from the leaves of the date-palm, or cocoa-nut; and I have observed that nests made of this last material are smaller and less bulky than those made with grass, as if the little architects were quite aware that with such strong fibre less amount of material was necessary. The nest varies much in the length both of the upper part or support, and the lower tube or entrance, and the support is generally solid, from the point whence it is hung, for two or three inches, but varies much both in length and strength. When the structure has advanced to the spot where the birds have determined the egg-compartment to be, a strong transverse loop is formed, not in the exact centre, but a little at one side. If then taken from the tree and reversed, the nest has the appearance of a basket with its handle, but less so in this than in the next two species, which have seldom any length of support above. Various authors have described this loop or bar as peculiar to the male nest, or sitting-nest, whereas it exists primarily in all, and is simply the point of separation between the real nest and the tubular entrance, and, being used as a perch both by the old birds and the young (when grown sufficiently), requires to be very strong. Up to this time both sexes have worked together indiscriminately; but when this loop is completed the female takes up her seat on it, leaving the cock bird to fetch more fibre and work from the outside of the nest, whilst she works on the inside, drawing in the fibres pushed through

by the male, reinserting them in their proper place, and smoothing all carefully. Considerable time is spent in completing this part of the nest, the egg-chamber being formed on one side of the loop and the tubular entrance on the other; after which there appears to be an interval of rest. It is at this stage of the work, from the formation of the loop to the time that the egg-compartment is ready, that the lumps of clay are stuck on, about which there are so many and conflicting theories. The original notion, derived, I believe, entirely from the natives, was that the clay was used to stick fire-flies on, to light up the apartment at night. Layard suggests that the bird uses it to sharpen its bill on; Burgess, that it serves to strengthen the nest. I of course quite disbelieve the fire-fly story, and doubt the other two suggestions. From an observation of several nests, the times at which the clay was placed in the nests, and the position occupied, I am inclined to think that it is used to balance the nest correctly, and to prevent its being blown about by the wind. In one nest lately examined, there was about three ounces of clay in six different patches. It is generally believed that the unfinished nests are built by the male for its own special behoof, and that the pieces of clay are more commonly found in it than in the complete nests. I did not find this the case at Rangoon, where my opportunities of observing the bird were good, and believe rather that the unfinished nests are either rejected from some imperfect construction, weak support or other reason, if built early in the breeding season; or, if late, that they are simply the efforts of that constructive faculty which appears, at this season, to have such a powerful effect on this little bird, and which causes some of them to go on building the long tubular entrance long after the hen is seated on her eggs."—P. 344.

But I am forgetting myself, and reverting to a volume that I had laid aside, for in reality there are three volumes instead of two; although vols. ii. and iii. are paged consecutively, and thus the idea of a continuous volume kept up, there are altogether three as distinct volumes as ever need be handled, and all three are of goodly dimensions: let us dive into the third, and begin with a short quotation about the bronze-backed pigeon.

"*The Bronze-backed Imperial Pigeon* (Carpophaga insignis).—During the hot weather, from the middle of April to the first week in June, when the rains almost invariably commence on the Malabar Coast, large numbers of this pigeon descend from the neighbouring mountainous region of Coorg and Wynaad, to a large salt swamp in the neighbourhood of Cannanore, and there not only eat the buds of

Aricennia, and other plants and shrubs that affect salt and brackish swamps, but also (as I was credibly informed by several native shikarees, to whom I was first indebted for the information of these pigeons resorting there) pick up the salt earth on the edge of the swamp, and of the various creeks and back waters that intersect the ground. I visited this place towards the end of May, 1849, when many of the pigeons had gone, as I was informed, but even then saw considerable numbers flying about and feeding on the buds of the Aricennia, and then retiring a short distance to some lofty trees to rest. Although the day was unfavourable and rainy, I killed above a dozen of these fine pigeons, and several natives, who were there with guns for the purpose of shooting them, assured me that they often killed from one to two dozens daily, simply remaining in one spot. Had I not secured the birds myself in this locality, I confess I would barely have accredited the account I received of these mountain residents descending to the plains during the hottest season of the year. I presume that these pigeons breed after their return to the hills, but I have no information on this head."—P. 458.

Episodically Mr. Jerdon introduces a notice of the lyre-bird, apparently with no other object than to give his idea of its affinities. These ideas are not only interesting, but, as it appears to me, very rational. On this subject I am quite content to await the evidence which its economy and habits will undoubtedly supply, whenever these shall be satisfactorily ascertained. Mr. Jerdon is certainly right in craving a reconsideration of a question so deeply interesting to every naturalist, whether ornithologist or not. I need not inform ornithologists that the lyre-bird is Australian, and not Indian.

"*Lyre-bird of Australia* (Menura superba).—The celebrated lyre-bird of Australia has so much the aspect of a Megapodine bird, that I cannot help considering it as not far removed from this family. Its extraordinary and unique tail consists of sixteen feathers, a number unknown amongst the Insessores, not one of which has more than twelve; its great size, compared with that of the minute birds among which it is usually placed by systematists, *viz.*, the wrens and the warblers; its strong gallinaceous legs and feet; its habit of running with facility, which it always employs in preference to flight;—all these combine to remove this bird from the Insessores; and its geographic relations with the Megapodii must also be taken into account. It is said, however, to build a neat nest on a ledge of rock, to have the power of modulating its voice, and that the young are helpless at birth. If these habits are fully confirmed, I would still prefer placing it as a separate

group next the Megapodidæ, with which it undoubtedly possesses considerable affinities; and in the Darwinian theory of transmutation of species it must have sprung directly from an ambitious Megapode which had desired to raise itself in the scale of birds."—P. 494.

In gallinaceous birds India is richer than any other country in the world, and, as a matter of course, a very considerable portion of the third volume is occupied in describing them. From the lordly peacock to the diminutive quail, all are interesting, all are beautiful, and all occur in a profusion of which, in this country, we have no example. Colonel Williamson, in his notes on the Jungleterry district, says that from twelve to fifteen hundred peacocks were often in sight at once; "whole woods were covered with their beautiful plumage." In vain does the artist exclaim, "Never approximate blue and green." Ruskin tells us, "There is nothing either in nature or art more beautiful than a peacock's neck." Mr. Gosse warms into eloquence at the thought of this beautiful object. "Who does not know his empurpled neck, so elegantly bridled; his aigrette of four-and-twenty battledoor feathers; his pencilled body-clothing; and, above all, his grand erectile train, with its rows of eyelets, the kidney-shaped nucleus of deepest purple, the surrounding band of green, widening in front and filling the notch of the pupil, the broad circle of brown, the narrow black ring edged with chesnut, and then the decomposed barbs of the feather, gilded green, all presenting the effulgence of burnished metal, or rather the glitter and glow of precious gems flashing in the varying light." Impey's pheasant is almost as beautiful; its splendid metallic greens and purples can scarcely be surpassed: let us hear Mr. Jerdon's account of this magnificent bird.

"*The Monaul Pheasant* (Lophophorus Impeyanus).—The monaul is found on almost every hill of any elevation, from the first great ridge above the plains to the limits of the wooded district, and in the interior it is the most numerous of the game-birds. When the hills near Mussooree were first visited by Europeans, it was found to be common there, and a few may still be seen on the same ridge eastwards from Landour. In summer, when the rank vegetation which springs up in the forest renders it impossible to see many yards around, few are to be met with, except near the summits of the great ridges jutting from the snow, where, in the morning and evening, when they come out to feed, they may be seen in the open glades of the forest and on the green slopes above. At that time no one would imagine they were half so numerous as they really are; but as the cold season approaches, and the rank grass and herbage decay, they begin to

collect together, the wood seems full of them, and in some places hundreds may be put up in a day's work. In summer the greater number of the males and some of the females ascend to near the limits of the forests where the hills attain a great elevation, and may often be seen on the grassy slopes a considerable distance above. In autumn they resort to those parts of the forests where the ground is thickly covered with decayed leaves, under which they search for grubs; and descend lower and lower as winter sets in, and the ground becomes frozen or covered with snow. If the season be severe, and the ground covered to a great depth, they collect in the woods which face to the south or east, where it soon melts in the more exposed parts, or descend much lower down the hill, where it is not so deep, and thaws sufficiently to allow them to lay bare the earth under the bushes and sheltered places. Many, particularly females and young birds, resort to the neighbourhood of the villages situated up in the woods, and may often be seen in numbers in the fields. Still in the severest weather, when fall after fall has covered the ground to a great depth in the higher forests, many remain there the whole winter; these are almost all males, and probably old birds. In spring all in the lower parts gradually ascend as the snow disappears. In the autumnal and winter months numbers are generally collected together in the same quarter of the forest, though often so widely scattered that each bird appears to be alone. Sometimes you may walk for a mile through a wood without seeing one, and suddenly come to some part where, within the compass of a few hundred yards, upwards of a score will get up in succession; at another time, or in another forest, they will be found dispersed over every part, one getting up here, another there, two or three further on, and so on for miles. The females keep more together than the males; they also descend lower down the hills, and earlier and more generally leave the sheltered woods for exposed parts or the vicinity of villages on the approach of winter. Both sexes are often found separately in considerable numbers. On the lower part, or exposed side of the hill, scores of females and young birds may be met with, without a single old male; while higher up, or on the sheltered side, none but males may be found. In summer they are more separated, but do not keep in individual pairs, several being often found together. It may be questioned whether they do pair or not in places where they are at all numerous; if they do, it would appear that the union is dissolved as soon as the female begins to sit, for the male seems to pay no attention to her whatever whilst sitting, or the young brood when hatched, and is seldom found with them. The call of the monaul is a loud plaintive

whistle, which is often heard in the forest at daybreak or towards evening, and occasionally at all hours of the day. In severe weather numbers may be heard calling in different quarters of the wood before they retire to roost. The call has a rather melancholy sound, or it may be that, as the shades of a dreary winter's evening begin to close on the snow-covered hills around, the cold and cheerless aspect of nature, with which it seems quite in unison, makes it appear so. From April to the commencement of the cold season, the monaul is rather wild and shy, but this soon gives way to the all-taming influence of winter's frosts and snows; and from October it gradually becomes less so, till it may be said to be quite the reverse; but as it is often found in places nearly free from underwood, and never attempts to escape observation by concealing itself in the grass or bushes, it is perhaps sooner alarmed, and at a greater distance than other pheasants, and may therefore appear at all times a little wild and timid. In spring it often rises a long way in front, and it is difficult to get near it when it again alights, if it does not at once fly too far to follow; but in winter it may often be approached within gunshot on the ground, and when flushed it generally alights on a tree at no great distance, and you may then walk quite close to it before it again takes wing. In the forest, when alarmed, it generally rises at once without calling or running far on the ground; but on the open glades or grassy slopes, or any place to which it comes only to feed, it will, if not hard pressed, run or walk slowly away in preference to getting up; and a distant bird, when alarmed by the rising of others, will occasionally begin and continue calling for some time while on the ground. It gets up with a loud fluttering and a rapid succession of shrill screeching whistles, often continued till it alights, when it occasionally commences its ordinary loud and plaintive call, and continues it for some time. In winter, when one or two birds have been flushed, all within hearing soon get alarmed; if they are collected together, they get up in rapid succession; if distantly scattered, bird after bird slowly gets up, the shrill call of each, as it rises, alarming others still further off, till all in the immediate neighbourhood have risen. In the chesnut forests, where they are often collected in numerous bodies, where there is little underwood, and the trees, thinly dispersed and entirely stripped of their leaves, allow of an extensive view through the wood, I have often stood till twenty or thirty have got up and alighted on the surrounding trees, then walked up to the different trees, and fired at those I wished to procure, without alarming them, only those close being disturbed at each report. In spring they are more independent of

each other's movements, and though much wilder are more apt to wait till individually disturbed. When they alight in the trees and are again flushed, the second flight is always a longer one. When repeatedly disturbed by the sportsmen or shikarees, they often take a long flight in the first instance. The seasons also have great influence over them in this respect, as well as in their degree of tameness or wildness. In spring, when the snow has melted in every part of the forest, and they have little difficulty in procuring an abundance of food, they appear careless about being driven from any particular spot, and often fly a long way; but in winter, when a sufficiency of food is not easily obtained, they seem more intent on satisfying their hunger, and do not so much heed the appearance of man. The females appear at all times much tamer than the males. The latter have one peculiarity not common in birds of this order: if intent on making a long flight, an old male, after flying a short way, will often cease flapping his wings, and soar along with a trembling vibratory motion, at a considerable height in the air, when, particularly if the sun be shining on his brilliant plumage, he appears to great advantage, and certainly looks one of the most magnificent of the pheasant tribe. In autumn the monaul feeds chiefly on a grub or maggot which it finds under the decayed leaves; at other times on roots, leaves and young shoots of various shrubs and grasses, acorns, and other seeds and berries. In winter it often feeds in the wheat and barley fields, but does not touch the grain; roots and maggots seem to be its sole inducement for digging amongst it. At all times and in all seasons it is very assiduous in the operation of digging, and continues at it for hours together. In the higher forests large open plots occur quite free from trees or underwood, and early in the morning or towards evening these may often be seen dotted over with monauls, all busily engaged at their favourite occupation. The monaul roosts in the larger forest trees, but in summer, when near or above their limits, will often roost on the ground in some steep rocky spot. The female makes her nest under a small overhanging bush or tuft of grass, and lays five eggs of a dull white, speckled with reddish brown; the chicks are hatched about the end of May. The flesh is considered by some as nearly equal to turkey, and by others as scarcely eatable. In autumn and winter many, particularly females and young birds, are excellent, and scarcely to be surpassed in flavour or delicacy by any of the tribe; while from the end of winter most are found to be the reverse. They are easily kept in confinement, and I would imagine might, without much difficulty, be naturalized in Europe."—P. 511.

I take the remaining extracts in succession, without interspersing them with any comments of my own.

"*The Himalayan Snow-cock* (Tetraogallus Himalayensis). — This fine bird is found throughout all the western portion, at all events of the Himalayan range, as far as Nepal, but it is not certain if it extend eastward into Sikim and Bootan. It is also found across the higher ranges in Chinese Tartary and Thibet. It is probably the species observed in Cashmere by Vigne, who states that it inhabits the Snowy Punjab on both sides of the valley, but more common on the Thibet side. 'These fine birds,' says Hutton, 'are common in the Hazara mountains, and are called Kauk-i-durra, or the "Partridge of the Ghâts," by the Affghans, and they are sometimes sold in the markets of Cabool and Candahar. They rise in coveys of from ten to twenty, and usually have a sentry perched on some neighbouring rock, to give warning of danger by his low and musical whistle. They are difficult birds to shoot; I found them in patches of the so-called Tartaric furze. Captain Boys states that it is strong on the wing, and that its flights are very protracted. Its note, he says, resembles that of a dipper (*Cinclus*), finishing with the cluck of a chukor. During flight it emits a shrill whistle, somewhat similar to that of the monaul.' It is confined exclusively to the snowy ranges, or the large spurs jutting from them, which are elevated above the limits of the forest, but is driven by the snows of winter to perform one, and in some places two, annual migrations to the middle regions; in summer they are only seen near the limits of vegetation. In Koonour (Kunawur) they are common at all seasons, from Chenee upwards; but on the Gangetic hills, from June till August, however much a person wanders about on the highest accessible places, but few are met with, and I have no doubt whatever but that nearly all which at other seasons frequent this part retire across the snow into Chinese Tartary to breed. About the beginning of September they are first seen near the tops of the higher grassy ridges jutting from the snow, and the green slopes above and about the limits of the forest. After the first general and severe fall of snow, they come down in numbers on to some of the bare exposed hills in the forest regions, and remain there till the end of March. This partial migration is probably made in the night after the fall of snow, as I have invariably found them in their winter quarters early the next morning. It requires a deep fall to drive them down, and some mild winters, except a few odd birds, they do not come at all. The birds on each respective hill seem to have a particular spot for their winter resort, which they return to every year the migration is

made. The snow-pheasant is gregarious, congregating in packs sometimes to the number of twenty or thirty, but in general not more than from five to ten, several packs inhabiting the same hill. In summer the few which remain on one side are found in single pairs generally, but across the snow, where the great body migrate, I almost always, even then, found several together. They seldom leave the hill on which they are located, but fly backwards and forwards when disturbed. The ring-tailed eagle is an inveterate annoyer of these birds; inhabiting such exposed situations, where there is nothing to conceal so large a bird from his sight, as he sails along the hill-side above them, they at once arrest his attention, and are driven backwards and forwards by this unrelenting tormentor all day long. On the appearance of one of these birds, which fortunately for them are not very numerous, they seldom wait till he makes a stoop, but, on his making a wheel near the spot where they are, immediately fly off to another quarter of the hill; the eagle never flies after or attacks them on the wing; so that, although he allows them little quietude when near their resort, he only occasionally succeeds in securing one. The jer-moonal never enters forest or jungle, and avoids spots where the grass is long, or where there is underwood of any kind. It is needless to add that it never perches. During the day, if the weather be fine and warm, they sit on the rocks or rugged parts of the hill, without moving much about, except in the morning and evening. When cold and cloudy, and in rainy weather, they are very brisk, and are moving about and feeding all day long. When feeding they walk slowly up-hill, picking up the tender blades of grass and young shoots of plants, occasionally stopping to snatch up a certain bulbous root, of which they seem very fond. If they reach the summit of the hill, after remaining stationary for some time, they fly off to another quarter, alighting some distance down, and again picking their way upwards. When walking they erect their tails, have a rather ungainly gait, and at a little distance have something the appearance of a large gray goose. They are partial to feeding on spots where the sheep have been kept at nights, when grazing in the summer pastures. These places have been called 'tatters' by the shepherds, and the grass on them keeps green and fresh long after the rest of the hill is quite dry and brown. They roost on the rocks and shelves of precipices, and return to one spot many successive nights. Their call is a low soft whistling, occasionally heard at intervals throughout the day, but more generally at daybreak. It is most common in cloudy weather. The first note is considerably prolonged, and followed by a succession of low rapid whistles, and it

is by far the most agreeable song of all our game birds. This note is only heard when the bird is at rest; when alarmed and walking away, it sometimes utters at short intervals a single low whistle, and when it gets on the wing the whistles are shrill and very rapid. However far it flies the whistling is continued until it alights, and for a few seconds afterwards, but then slightly changed in tone to a few notes, which seem in a strange manner to express satisfaction at being again on the ground. However odd the comparison, I can compare the whistling of these birds, when flying and alighting, to nothing but the difference in sound produced by the wings of a flock of pigeons when flying, and when alighting on some spot where they have to flutter a few seconds before they can gain footing. The jer-moonal is not remarkably wild or shy. When approached from below, on a person getting within eighty or a hundred yards, they move slowly up-hill or slanting across, often turning to look back, and do not go very far unless followed. If approached from above, they fly off at once, without walking many yards from the spot. They seldom in any situation walk far down-hill, and never run except for a few yards when about to take wing. The whole flock get up together; the flight is rapid, downwards at first, and then curving so as to alight nearly on the same level. Where the hill is open and of great extent, it is often, for upwards of a mile, at a considerable height in the air; when more circumscribed, as is often the case on the hills they frequent in winter, it is of shorter duration, perhaps merely across or into the next ridge. They feed on the leaves of plants and grass, and occasionally on moss, roots and flowers; grass forms by far the greater portion. They are very partial to the young blade of wheat and barley, when it is first springing up and while it remains short; and should there be an isolated patch on the hill where they are, visit it regularly night and morning. They never, however, come into what may be called the regular cultivation. They are generally exorbitantly fat, but the flesh is not particularly good, and it has often an unpleasant flavour when the bird is killed at a high elevation, probably owing to some of the plants it there feeds upon. Though I have spent many summers on the snowy ranges I never found the nest or eggs, but in Thibet I often met with broods of young ones newly hatched. There were, however, several old birds, and probably more than one brood of chicks, so I could form no correct idea of the number in one brood. They are hardy birds and easily kept in confinement, but, though they will eat grain, I doubt if they will live long without an occasional supply of their natural green food of grass and plants. They may be kept

with the least trouble in large cages, the bottoms of which, instead of being solid, are made of bars of wood or iron wire, so that, the cages being put out on the grass, the birds may feed though the interstices. The eggs which have been found by travellers are about the size of those of the turkey, but, like those of the grouse, are of a more lengthened form; their ground colour clear light olive, sparingly dotted over with small light chesnut spots."—P. 550.

"*The Chukor Partridge* (Caccabis chukor).—In our part of the hills (*i. e.*, in the North-western Himalayas), the chuckore is most numerous in the higher inhabited districts, but is found scattered over all the lower and middle ranges. In summer they spread themselves over the grassy hills to breed, and about the middle of September begin to assemble in and around the cultivated fields near the villages, gleaning at first in the grain fields which have been reaped, and afterwards, during winter, in those which have been sown with wheat and barley for the ensuing season, preferring the wheat. A few straggling parties remain on the hill-sides, where they breed, as also in summer many remain to perform the business of incubation in the fields. In autumn and winter they keep in loose scattered flocks, very numerous, sometimes to the number of forty or fifty, and even a hundred. In summer, though not entirely separated, they are seldom in large flocks, and a single pair is often met with. They are partial to dry stony spots, never go into forest, and in the lower hills seem to prefer the grassy hill-sides to the cultivated fields. This may probably be owing to their comparatively fewer numbers, as I have observed that many others of the feathered race are much shyer and more suspicious of man when rare, than those of the same species in places more numerous. Their call is a kind of chuckling, often continued for some time, and by a great many birds at once. It is uttered indiscriminately at various intervals of the day, but most generally towards evening. The chuckore feeds on grain, roots, seeds and berries; when caught young it becomes quite tame, and will associate readily with domestic poultry. From the beginning of October chuckore-shooting, from the frequency and variety of the shots, and the small amount of fatigue attending it, is, to one partial to such sport, perhaps the most pleasant of anything of the kind in the hills. About some of the higher villages ten or a dozen brace may be bagged in a few hours. Dogs may be used or not at the discretion of the sportsman; they are not at all necessary, and if at all wild are more in the way than otherwise. 'The male,' says Major Brown, 'is very bold, and is tamed for the purpose of fighting. In a domesticated

state he makes no hesitation in offering battle to every animal, and pecks very fiercely, always searching for a tender part; the nose of a dog, or the naked feet of the native servants, immediately attract his attention, and he soon makes the object of his attack fain to run.' 'When reclaimed,' says another writer, 'this bird is peculiarly bold, fearless and entertaining. It trots about the house, and is familiar as a little dog. It is amusing to see its antipathy to quick motions in others. It will follow a servant who hurries into a room, pecking at his heels, scouring away when he attempts to turn upon it. It is still more persevering against the poor wight who moves backwards and forwards as he pulls the punkah. Half asleep at his task, he is aroused by a fierce attack on his legs. He attempts to continue his work, and at the same time to drive away the intruder, but it is of no use; and he is at last obliged to call for assistance to rid him of his persecutor.' The hen-chukor lays from eight to fifteen eggs, of a creamy white according to one writer, pure white according to Adams; and the male bird is said to remain near the nest during incubation, and may be heard calling all day, its call much resembling that of the domestic hen, being a 'cuc-cuc' often repeated, and the Cashmeeres call it 'Kau-kau' from its cry. The Affghans call it the 'fire-eater.' It is considered to be excellent eating. In Ladak it is said to be numerous in the cultivated part of the country, and is there called 'Nek-pa.'"—P. 565.

"*The Indian Bustard* (Eupodotis Edwardsii).— The bustard frequents bare open plains, grassy plains interspersed with low bushes, and occasionally high grass rumnahs. In the rainy season large numbers may be seen together, stalking over the undulating plains of the Deccan or Central India. I have seen flocks of twenty-five and more, and a writer in the 'Sporting Review' mentions having seen above thirty on one small hill. This writer states his belief that they are never seen in any district that is not characterized by hills as well as plains; but this, from my own experience, I would merely interpret that they do not frequent alluvial plains, but prefer the undulating country; for I have seen them on extensive plains, where there were merely a few ridges or eminences, and nothing deserving the name of a hill close at hand. Towards the close of the rains, and in the cold weather before the long grass is cut down, the bustard will often be found, at all events in the heat of the day, concealed in the grass, but not for the purpose of eating the seeds of the roussa-grass, as the writer above alluded to imagines; rather for the large grasshoppers that abound so there, and which fly against you at every few steps you

take. During the cold weather the bustard frequently feeds and rests during the day likewise, in wheat fields. When the grass and corn are all cut, and the bare plains no longer afford food to the bustard, it will be found along the banks of rivers where there is long grass mixed with bushes, or the edges of large banks, or low jungle where there is moderately high grass, or it wanders to some district where there is more grass; for though they do not migrate, yet bustards change their ground much, according to the season and the supply of grasshoppers and other insects. The hen birds, remarks the writer quoted above, generally congregate together during the rains, are very timid, and frequently, when a sportsman is pursuing a single one, she will attempt to seek safety, fatally for herself, in some large bush, particularly if the gunner turn aside his head, and affect not to see her at the moment of hiding. The cock birds, at this season, feed a mile or so apart from the hens, and, stretching their magnificent white necks, stride along most pompously. Besides grasshoppers, which may be said to be their favourite food, the bustard will eat any other large insect, more especially Mylabris, or blistering beetle, so abundant during the rains; the large Buprestis, Scarabei, caterpillars, &c., also lizards, centipedes, small snakes, &c. Mr. Elliot found a quail's egg entire in the stomach of one, and they will often swallow pebbles or any glittering object that attracts them. I took several portions of a brass ornament, the size of a No. 16 bullet, out of the stomach of one bustard. In default of insect food it will eat fruit of various kinds, especially the fruit of the byr (*Zizyphus jujuba*) and caronda (*Carissa carandas*), grain and other seeds and vegetable-shoots. The bustard is polygamous, and at the breeding season, which varies greatly according to the district, from October to March, the male struts about on some eminence, puffing out the feathers of his neck and throat, expanding his tail and ruffling his wings, uttering now and then a low, deep, moaning call, heard a great way off. The female lays one or two eggs of a dark olive-green, blotched with dusky. I have killed the young, half-grown, in March, near Saugor. The bustard has another call, heard not unfrequently, compared by some to a bark or a bellow; chiefly heard, however, when the bird is alarmed. This is compared by the natives to the word 'hook,' hence the name of 'hookna,' by which it is known to the villagers about Gwalior. When raised it generally takes a long flight, sometimes three or four miles, with a steady continued flapping of its wings, at no great height above the ground, and I never found that it had any difficulty in rising, not even requiring to run one step, as I have many times had occasion to

observe when flushing them in long grass or wheat fields. On the bare open plains it will sometimes run a step or two before mounting into the air. A writer in the 'Bengal Sporting Magazine' asserts that he has known the bustard ridden down, and that after two or three flights it is so exhausted as to allow of its capture. I imagine that a healthy bird would tire out the best horse and rider before giving in. At times a single cock-bustard can be very easily stalked so as to get within distance of a fair shot, fifty or sixty yards, or even nearer, by rapidly moving obliquely towards them; when several are together they are more wary, but even then can often be approached within one hundred yards. If there is any bushy or uneven ground to favour the gunner the task is comparatively easy. Occasionally they may be flushed in long grass or dhal fields, or even wheat fields, and an easy shot obtained; and I once brought down two birds, right and left, in a wheat field near Saugor. Many sportsmen kill it with the rifle, and one sportsman on the Bombay side is known to have killed above one thousand bustards with his rifle, chiefly, I believe, in the Deccan and Southern Mahratta country. A young bustard or full-grown hen bird are very excellent eating; the flesh is dark and very highly flavoured, but in an adult cock it is rather coarse."—P. 609.

Were I to follow my own inclination I could prolong this notice almost indefinitely, there is so much that tempts one onwards, so much to read and so much to quote. Not only is there abundant matter for notice in life-history, the highest branch of Ornithology, but even in systematic arrangement; notwithstanding the self-imposed fetters of method, there are good and genuine observations, well worth citing and well worth considering; in fact it is impossible to open these volumes without finding instructive matter, and it is impossible to close them without the conclusion that the author has well and nobly completed his task. The number of species described is above one thousand, or about double that of the avi-fauna of Europe; and the time occupied by the author in describing the whole was only two years and one month, a fact that must ever hereafter stand as a proof that energy, industry and perseverance are not incompatible with a residence under the sultry suns of India, and even though accompanied, during a portion of the time, by severe indisposition.

No very precise idea is conveyed to my own mind, and I think most of my readers will acknowledge to a similar feeling, by the title 'Birds of India.' India, as defined either by political or physical boundaries, presents as great contrast of climate as either of our continents; we ascend from the Hoogley to the Himalayas through every degree of

temperature and every kind of vegetation; and as a consequence, an inevitable result, the greatest diversity exists among the feathered tribes. In the Index to this work, as in the country itself, the most strikingly English of hawks, sparrows, crows, martins, cuckoos, pipits and herons, mingle with and jostle against the most tropical of vultures, parrots, peacocks, monauls, adjutants, snake-birds, and frigate-birds. When we use such titles as 'Birds of Australia,' 'Birds of New Zealand,' 'Birds of Canada,' or 'Birds of Britain,' we convey an idea, although perhaps not a very exact one, of the objects of which we are speaking or writing; there is a peculiarity of characters common to the entire contents of each of these avi-faunas; but that the case is entirely different with India the preceding observations will sufficiently prove. On this account, on account of this extraordinary diversity, India is the country in which a systematic arrangement of birds can be studied with the greatest probability of attaining true and satisfactory results. There are, however, some points which might, I think, be brought prominently forward as worthy of especial notice; such, for instance, as the great abundance of gallinaceous birds, both as regards species and individuals; and such as the absence of the Struthionidæ, which form so prominent a feature in Australia, Africa and South America. It was scarcely to be expected that an author, giving his mind so thoroughly to life-history and specific differences, should also enter on the wider field of generalities and statistics of bird-distribution. In this, however, no one is so well qualified as Mr. Jerdon: it is not to be imagined that the mere compiler or critic, even though furnished with these abundant materials, can hereafter arrive at conclusions with such certainty and accuracy as one who has collected the information on the spot,—one, indeed, to whom alone we still look for a well-digested summary of his own invaluable labours.

In conclusion, I can only express a sincere desire that my ornithological readers will not fail to possess themselves of a work so replete with interest and instruction: I do not hesitate to assure them that the purchase-money will be well expended, and will produce an ample return in increasing their knowledge of Ornithology.

Edward Newman.

Ornithological Notes from Shetland. By Henry L. Saxby, M.D.

(Continued from p. 9310.)

Guillemot, Puffin and Kittiwake. — The high cliffs at Burrafirth, which were covered with birds a few weeks ago, are now entirely deserted. The guillemots left their breeding-stations about the middle of August, and, after remaining in the neighbouring waters for a few days, were seen no more. It is supposed that this species does not entirely leave us at any time of the year, but that at the close of the breeding season it withdraws to the open sea, remaining there until the following spring. How far this belief may be correct it is difficult to say; but occasionally, after stormy weather, I have shot specimens near the shore, and picked up others dead at the water's edge. According to Dr. Baikie and Mr. Heddle, it remains in Orkney the whole year. During the second week of August puffins and kittiwakes collected separately into enormous flocks, and by the commencement of September not one was remaining in the cliffs. It is very rarely indeed that the puffin is seen here in winter. One shot in November had the sides of the head dusky gray, and round the eye, but chiefly above it, were numerous small black marks.

Skua (Lestris catarractes) *and Richardson's Skua.* — The time of the skua's departure seems to be early in August, probably about the second week, but, as the birds leave the breeding-ground and become scattered some weeks previously, this point in their history is difficult to determine. The same remarks also apply to Richardson's skua, although stray individuals may occasionally be seen as late as September.

Arctic Tern. — Arctic terns left, as nearly as I can ascertain, about the middle of August. Last year a small party of them suddenly appeared at Burrafirth, on the 21st of September, and as suddenly took their departure the same day. None had been seen for several weeks previously.

Wheatear. — Wheatears usually begin to leave during the second week in September, and then slowly disappear. Those which remain until the end of the month are always young birds. This year there was a perceptible diminution in their number about a week earlier than usual. Although I have seen wheatears arrive in flocks upon the south coast of England, I have never yet even heard of the vast numbers which are scattered over these islands collecting into flocks before

taking their departure. The whole number of those which return to us in summer arrive almost simultaneously.

Lesser Blackbacked Gull.— By the end of August the lesser blackbacked gulls had all disappeared, except of course the old female which has now remained for upwards of twenty-two years in the garden at Halligarth, without displaying the smallest degree of restlessness, or desire to accompany her fellows at the time of the usual migration. This bird was taken from the rocks when very young, and has since lived in the garden, summer and winter, without attempting to escape. A slight injury to one wing prevents her from flying, and the door may be left open for hours at a time, or snow may be lying upon a level with the walls, and yet she will never pass their limits. Although she has been so long in captivity, kindness has hitherto failed to make the smallest impression upon her utter aversion to the human species; any person who approaches her is sure to be attacked, and even those who carry her food are subjected to the same ungracious treatment. Almost anything which is eatable seems to suit her appetite; even oatmeal porridge is not refused, and fish, raw meat, birds and mice never seem to come amiss. Somewhat late in the breeding season she scrapes out a rude sort of nest, and sits most perseveringly in it for several weeks; and although eggs have several times been introduced into the nest while she has been away feeding, upon her return she has invariably broken them with her bill, and swallowed most of their contents. Towards the end of September the head becomes spotted with light brownish gray, remaining in that state until the following spring. One winter, during a long-continued frost, she was attacked by two hooded crows, but compelled them both to retreat, although not until after a terrible battle, in which she nearly lost her life. Lesser blackbacked gulls do not acquire their adult plumage until the end of the third year: a bird a year old has the back mottled with bluish black and various shades of light brown.

Swallow.— A summer rarely passes without our seeing a few swallows. On the 24th of September four of these birds visited the shore, and remained there for several days. I have only heard of one instance of its breeding in Shetland. Strangers to these islands are often misled by the statement of the inhabitants that it breeds abundantly in many parts; but it is the storm petrel which is here known by the name of "swallow," as well as by the more common name of "spencie."

Merlin. — Young merlins visit the garden very frequently, and appear to be fond of concealing themselves in thick bushes, and dashing out with a great noise when any person approaches: in consequence of this habit I have been able to shoot several. The old birds, on the contrary, keep more to the hills and open grounds, seldom venturing near the garden, except when bad weather has caused a scarcity of food elsewhere.

Rock Dove. — Rock doves are now beginning to visit the stubble fields. I have not seen so many as usual in this neighbourhood lately, but it is said that they have suddenly become abundant in other parts of the island. A pigeon, coloured light brown and white, was seen accompanying a flock of rock doves to the cliffs of Balta some weeks ago. This was in all probability one which had escaped from a dovecote, but such cases are of very unusual occurrence.

Cormorant. — Cormorants are now returning to the voes and inlets, and a few may occasionally be seen in the lochs. The greater number are of course immature birds; adults are so shy of the land that comparatively few fall into the hands of collectors. The cormorant is very easily domesticated, and when treated with kindness it becomes exceedingly docile, exhibiting a very high degree of intelligence, and an amount of affection scarcely to be expected from a bird which in its wild state is remarkable for its extreme shyness of man. Some years ago a very young male was taken from one of the North Skerries and brought to Halligarth, where he soon became a most interesting pet. At first he required careful feeding, for it was some weeks before he became aware that the opening of his bill was the necessary preliminary to every meal; he would appear eager for food, and, uttering the usual peculiar cry, would strike at whatever was offered him with his closed bill; and in this manner he would have starved, but for human aid. Afterwards he caused but little trouble, for when the ducks were fed he would rush boldly among them, and appropriate anything in the shape of fish or flesh which happened to suit his fancy. Sometimes also, when he saw a boy coming to the house with fish, he would waylay him, and, if no contribution were then offered, he would speedily settle the matter by helping himself. One day, when food was very scarce and he had been fasting for many hours, I happened to pass by, carrying a number of starlings, one of which I tossed to him, but scarcely with the expectation that it would be accepted. However, he caught it cleverly before it could reach the ground, and next instant it disappeared down his capacious

throat; another followed, and was treated in the same manner, then more, until no less than five had been thus disposed of. This number appeared to satisfy him, and, the whole neck being now enormously distended, it was with difficulty that he waddled away to his favourite corner of the coal-shed, where I left him sitting, face to the wall, upon a lump of coal, the legs of the last starling still projecting from the corner of his mouth. After this a bird was always a favourite morsel, and he would follow me for a long distance when I happened to be carrying a gun. Once I gave him, for a single meal, two buntings, a twite, a sparrow, two snow buntings, and a ringed plover, and even then he followed me for more. Birds, fish and mice were always swallowed head foremost. During the first two years he kept almost entirely to the ground, only occasionally sitting upon a stone or a low wall, but afterwards the roof of the house was preferred, from which elevated position he used suddenly to pounce down, either to rob a fish-basket or to scatter a company of feeding ducks. But this was merely as a diversion, not as a necessity, for at the time when he first took up his position on the roof, he also commenced regularly to procure his own meals, flying to the voe for that purpose, and, after remaining there for an hour or two, returning to his former station by the chimney. He never showed any desire to escape, but, on the contrary, he became more and more attached to his human friends. Strangers who attempted to handle him ran the risk of becoming acquainted with the sharpness of his mandibles, and of being scared by the unearthly croaking which always accompanied the bite. Being one of his especial friends, I was permitted to stroke and handle him with impunity, and he would even fly several hundred yards to meet me when I called him. The kitchen fire was his great delight, and he would bask near it for hours; but at such times it was imprudent to leave either fish or flesh within his reach. Once he carried off a newly-skinned rabbit, and at another time he attacked a living duck, and even succeeded in swallowing the head and part of the neck before a rescue could be effected. He would sometimes extend his explorations beyond the kitchen, wandering through the passages as calmly as if the house were his own, but always betraying himself by the loud flap, flap, of his great webbed feet upon the flags. For about the first year of his life the iris of the eye was of a brownish colour, then it became pale bluish green, and towards the end of the second twelvemonth bright emerald-green. During the third year he rapidly acquired his adult plumage, but just as this was approaching its perfection he was unfortunately killed by an old half-blind dog, which in

former days had been celebrated for his address in seizing and killing wounded cormorants.

HENRY L. SAXBY.

Baltasound, Shetland,
September 30, 1864.

Ornithological Notes from Norfolk. By H. STEVENSON, Esq.

Little Bittern. — A very fine specimen, in perfect plumage, of this rare species, was killed off a "rand" on Horsey Mere, on the 3rd of September; and a bird, supposed, by its general colouring, to have been a roller, was also observed at Horsey about the same time; but of this I can give no more satisfactory information.

Honey Buzzard and Osprey. — A young male honey buzzard, very prettily marked about the head and neck, each feather being slightly, but distinctly, tipped with white, was sent to one of our bird-preservers in this city on the 26th of September, having been killed somewhere in Norfolk; and a fine adult osprey was shot in Ditchingham Park on the 29th of the same month.

Cormorant and Manx Shearwater. — On the 10th of October a young cormorant was brought to me in the flesh, which had been shot on the previous day at Coldham Hall, a ferry on the river Yare, about five miles from Norwich. This bird had been seen in that neighbourhood for a day or two before it was shot, and was killed off a tree, on which it usually settled when driven off the river by the swans, who attacked it fiercely in their own element. The appearance of this species at the present day, so far from the coast, is very unusual, and of late years examples have been extremely scarce, even in severe winters. This poor bird in no way deserved its name, having nothing in its stomach but about eight or ten small worms about the size of packthread, and nearly two inches long, some of which were still living when touched. A manx shearwater, also a rare bird in Norfolk, was shot at Yarmouth about the same time.

Nutcracker. — A specimen of this rare visitant to our shores was shot off a tree in a garden at Gorlestone, near Yarmouth, on the 8th of October, as I learn from the Rev. C. J. Lucas, of Burgh, in whose possession it now is. I saw this bird in the flesh, and on dissection found it to be a male in fine condition, the stomach (very muscular in texture) being filled with the remains of a large dung-beetle (*Geotrupes stercorarius*). This is the third recorded instance of the

appearance of this bird in Norfolk; the first, in Mr. Gurney's collection, having been killed at Rollesby, near Yarmouth, on the 30th of October, 1844 (see Zool. 824, and a subsequent paper by Mr. W. R. Fisher, on the same example, Zool. 1073); and the second, which was seen in the flesh by the Editor of the 'Zoologist,' is recorded (Zool. 4097) as killed off Yarmouth on the 7th of October, 1853. I cannot now ascertain whether this specimen had a thin or a thick bill, but it is worthy of note that the Rollesby and Gorlestone birds, and one killed at Wisbech, November 8th, 1859 (Zool. 6809), as noticed by Mr. F. W. Foster, of the Wisbech Museum, had all thin bills, and two out of the three (the sex of Mr. Gurney's, singularly enough, not being stated, although the contents of the stomach are said to have been coleopterous insects) were males. I have particularly mentioned these facts, since it is by no means satisfactorily decided at present whether the thick and thin-billed nutcrackers are specifically distinct, or whether, as in the case of the Neomorpha Gouldii of Australia, the difference in the form of the beak is merely a sexual distinction. I should be particularly glad of any authentic information as to the ascertained sex or sexes of any thick-billed nutcrackers, whether killed in England or abroad.

Spoonbills, Richardson's Skua, and Eider Duck.—A young Richardson's skua, a bird of the year, was shot at Yarmouth on the 5th of October; and on or about the 25th two young spoonbills, with scarcely any perceptible crest, were shot, one on Breydon and the other on Hickling Broad; the latter, now in the Norwich Museum, had the irides light gray, not rich red as in old specimens. On the 11th of November a young eider duck, in very poor condition, the stomach and gizzard being quite empty, was shot on Hickling Broad. This bird is very rare on our coast.

HENRY STEVENSON.

Norwich, November 14, 1864.

Ornithological Notes from Ulceby, Lincolnshire.

By JOHN CORDEAUX, Esq.

Blackbird, Redwing, &c.—In this open and exposed district, which contains but few plantations or hedgerows, blackbirds, redwings, thrushes, &c., resort, during the winter months, to some favourite roosting-place, often far removed from their daily haunts, there to spend the night in safety, till the first dawn of day calls them

away again. There is one such place in this parish, a small plantation of spruce and larch, not more than two acres in extent. The trees are from ten to twelve feet high, and the thick, dense boughs of the young spruce, feathered down to the ground, make an admirable roosting-place for the hundreds of the Merulidæ which resort thither for shelter during the long winter nights. I have frequently passed through this covert, when shooting, without seeing a single blackbird or redwing; but the case is very different towards the close of a short winter's day; then, on all the tall hedgerows which converge towards the corner of the plantation facing the open country, numbers of blackbirds, redwings, &c., may be seen moving by short stages from their favourite haunts and feeding-grounds to the vicinity of the little plantation. The other day (November 28th) I tried to ascertain the number of blackbirds which frequented this spot for a night's lodgings, and in the afternoon took up a position in an open spot in the covert, not far from the narrow corner which faced the open country. On my way down I had already put up several blackbirds from the hedgerows, which had all gone into the covert. It was just half-past three o'clock, and an unusually dark and gloomy afternoon. Concealing myself amongst the thick branches of a young spruce, I counted the blackbirds as they flew past. During the first twenty minutes they kept dropping in one by one, sometimes nearly a full minute occurring between the arrivals. During the next ten minutes the number was greatly increased; they were constantly passing in, and by four o'clock I had counted one hundred past, and of this number seventy during the last ten minutes. By a quarter-past four the last blackbird had come in, making altogether one hundred and thirty-eight, an extraordinary number considering the open character of the country, and this exclusive of many more which doubtless came in at other places. From half-past three until half-past four the redwings kept constantly passing in, in small parties, from two and three to twenty together. I cannot speak positively to the number of redwings, as it was quite impossible to count them, my time being fully occupied by the blackbirds; but there certainly could not have been less than ten redwings to one blackbird. Occasionally I detected a thrush which came in alone, but very few; and no fieldfares, although the latter birds are found in great numbers during the day, feeding in the low meadow-grounds in the neighbourhood. Numerous flocks of linnets, greenfinches and chaffinches also passed in, seeking the friendly shade of the dark spruce. The blackbirds invariably entered the plantation flying low down amongst the tree-tops, and then dashed

suddenly down into the deeper shades below. The redwings, as a rule, flew higher, would perch for a moment on the outer rows of trees, and then fly forward again; several perched, within a yard of my position, on the slender boughs of a young larch, to the great astonishment of the retriever at my feet, who seemed fairly puzzled at their conduct. What was most remarkable was the almost perfect silence with which this large company of birds settled down for the night; only the occasional, simple, low note of a blackbird was heard, as if quarrelling with his neighbour on the adjoining bough. The latest birds in were the redwings. Then came the whistling of wings overhead, and the forms of the peewits could be dimly discerned as they went flapping past to their feeding-grounds on the higher lands; and sometimes the swift rush and melancholy note of the golden plover sounded high above in the gathering gloom. It was surprising to see the ease with which the green plover detected me, almost concealed as I was in the dark covert, and partly shrouded in the thick spruce-boughs; scarcely a flock passed over without swerving rapidly on one side, and this at a time when I could only barely distinguish them by the white gleam of the under parts.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire.

Some further Notes on the Birds which Breed on Walney Island.

By J. EDMUND HARTING, Esq.

I AM pleased to see (Zool. 9321) the observations of Mr. Ecroyd Smith with regard to the birds found breeding on Walney and the adjacent islands.

In many cases I believe the truth is only to be arrived at by comparing the notes of different observers at different times, and therefore I am glad that my notes (Zool. 9156) have not been left entirely without comment.

Mr. Ecroyd Smith points out some singular differences between his observations and my own, and I should like therefore to offer a few remarks upon his notes, taking them in the order in which he has given them. I would first observe, however, that, considering I visited Walney Island only a few days beforehand, and worked the ground thoroughly, especially the western shore, quartering it, in fact, like a pointer, I am not surprised that Mr. Ecroyd Smith experienced

some little disappointment in his search, and found comparatively so few eggs.

In commenting upon his notes I cannot do better than pursue the plan which he has adopted, and place his observations in inverted commas, for the sake of distinction.

Common Tern.—With reference to my remark that I had disturbed the birds from their eggs, he says :—

"June 3, 1863. None seen on or near their eggs. 10—12 A.M."

"June 9, 1864. None seen on or near their eggs. 10 A.M.—2 P.M."

I have referred to my note-book, and find that I made no memorandum of the *time* at which the birds were on their eggs, but, considering that I was on the island by 5 A.M., I think it must have been about 9 A.M. when I found the first common tern's eggs, and saw the birds rise from the ground. I can only find one line in my note-book in which I have made any mention of time, and that is as follows : — "11 o'clock. Sandwiches (lunch—not terns)." Before this hour I had collected by far the greater number of common tern's eggs, had seen the birds rise from the ground, and had shot one of them. I would now suggest that perhaps the birds cover their eggs until the sun has acquired sufficient power to heat them and the pebbles or sand on which they lie, and that they then leave them for the purpose of fishing. I remember to have seen the blackheaded gulls and Sandwich terns on their nests between 6 and 7 A.M.

"1863. No nest."

"1864. But few eggs deposited on the bare pebbles, or even sand, and these invariably in hollows."

In this we appear to agree, and are confirmed by Dr. Saxby, who, I am glad to see, has made some observations upon this point in his "Ornithological Notes from Shetland" (Zool. 9313).

"1863. In every instance *outside* (seaward) of the sand-hills."

"1864. Mostly *outside* the sand-hills."

It is very singular that in no instance did I find eggs of the common tern outside the sand-hills : they were all on the *inside*, sheltered from the wind, and out of sight of the sea ; and this struck me at the time as being so remarkable that I made a note of it, with a view of ascertaining whether the common tern invariably breeds in more sheltered situations than some of its congeners, as for instance the lesser tern, which was only found breeding *outside* the sand-hills, and exposed to wind and wave. Had Mr. Ecroyd Smith made no observations in 1863, but merely visited the island after I left it this spring, I should not have been quite so much surprised at his finding some

eggs of the common tern outside the sand-hills, on the supposition that the birds had shifted their ground in consequence of having been robbed. But since their eggs were also found outside the sand-hills in 1863, I must needs infer that the common tern does not always lay in such sheltered situations as I had supposed.

Lesser Tern (Provincial, Sea-mouse.) "1863—4. A few birds; no eggs found."

The only three nests which I found were all *outside* of the sand-hills, and I made a memorandum of this at the time, as being worthy of note. These eggs were found before 11 A.M., and the birds were not then sitting. I regret now that I did not pay more attention to the hours at which the birds were incubating.

Arctic Tern.—"1863—4. No certain nestings. My friend Mr. A. Cooke doubts either this or the following species (roseate) breeding here: he regards the shooting of a bird in *mere proximity* to any nest by no means conclusive as to the parentage of the eggs, and that nothing short of capture upon the nest or eggs can be held conclusive."

The plan which I pursued to obtain eggs of this species was as follows. On observing a bird upon the ground, or seeing one alight, I proceeded rapidly towards it in a direct line, and, as soon as it rose, fired at it. Several times, from being in too great a hurry, I missed the bird, but eventually succeeded in killing three. In two instances the birds dropped at some considerable distance from where they rose, but leaving them on the ground, and, without having altered my direction or the position I was in at the time the bird rose, I went directly to the spot and found eggs. Pencilling these and putting them in a basket, I went to pick up the birds. These proving to be arctic terns, I felt no hesitation in concluding that the eggs were eggs of that species. I have read somewhere, but cannot at present recollect where, that, in the opinion of some naturalists, the guillemot, which breeds in colonies, does not always return to the egg which it left, but, being led by instinct to cover an egg, it settles down upon one, without being particular whether it is its own or not. If this be the case with the terns, it must be quite impossible to distinguish eggs of the common, arctic and roseate species, when placed in proximity. But I do not suppose that this is so; on the contrary, I am inclined to believe that every bird has the power of distinguishing its own eggs; and it appears to me not improbable that the reason we find hardly two eggs of the guillemot alike is that Nature has thus ordained it, to enable the birds more readily to distinguish them when laid close

together in numbers on the bare cliff. I am, therefore, yet of the opinion that if a bird is observed sitting on the ground, is seen to rise and is shot, and, on proceeding to the spot from which it rose, eggs are found, we may fairly presume the eggs to be those of the species killed. Mr. A Cooke considers that "nothing short of capture upon the nest or eggs can be held conclusive." But if we were always to follow that rule, we should sometimes have to wait a long time before we could add many species of eggs to our collection. I think that, in most cases, if a bird is seen on or near the eggs, we may fairly presume that the eggs are those of the bird.

With regard to the breeding of the oystercatcher, ring plover, shieldrake, and a few other birds mentioned by Mr. Ecroyd Smith, we appear to agree in material points, with this exception,—that whereas out of more than a dozen nestings of the oystercatcher which I found last May, only one of them was formed with shells, the others being mere hollows scooped in the sand, Mr. Ecroyd Smith observed that this bird, besides using bits of shell, occasionally employs fragments of drift-wood and sea-weed in the lining of its nest.

In conclusion, I am quite of the opinion that we ought not to dogmatize on observations made in any single locality, which may be far from presenting us with the truth, but should rather offer our notes with the view of comparing them with the observations of others, and thus elicit information which will tend to prove general facts.

J. Edmund Harting.

Kingsbury, Middlesex,
November 11, 1864.

On the Power possessed by Birds, natives of warm climates, to resist with impunity the cold of higher latitudes. By J. Jenner Weir, Esq.

It is well known that natatorial and grallatorial birds have their bodies clothed with down in far greater abundance than birds which seek their sustenance entirely on land; and doubtless this warmer clothing enables them to combat with the damp and cold by which they are in their haunts continually surrounded.

When, however, insessorial birds from hot countries are contrasted in this respect with those from temperate or even cold countries, this distinction in the relative warmth of their clothing does not appear to exist.

There are a few families of insessorial birds which are distributed nearly over the globe, and many throughout the Northern Hemisphere, except of course in the highest latitudes.

The extensive family of finches (*Fringillidæ*) is cosmopolitan, being represented by species in the most northern districts in which birds can exist, both in the New and Old World, and being found as far south as New Zealand and South Georgia; most islands also are inhabited by species of this numerous family; the Gallapagos, for instance, have a genus—Geospiza—peculiar to them, and many of the islets have peculiar species of that genus. The African Atlantic Islands also have peculiar species of the restricted typical genus Fringilla, and also of other genera, such as Crithagra and Estrelda.

A single genus may exist through all the degrees of latitude from the temperate regions to the tropics, and so may even a single species. The sparrows (*Passer*), for instance, are found in abundance in Northern Europe. The Indian house sparrow (*Passer Indicus*), although inhabiting the greater part of India, differs but little from our common house sparrow (*P. domesticus*); and our other indigenous species, the tree sparrow (*P. montanus*), is found also eight degrees south of the Equator, being the common sparrow of Java; it has also been observed in Arracan, China, Japan, and thence westward in the Himalayas, Affghanistan, Erzeroum, and through Europe to these Isles.

Another species—Passer simplex—is found in the hottest parts of Western Africa.

It does not appear that species inhabiting cold climates are more warmly clothed than those found in very hot regions. To illustrate this point compare the plumage of the Javan grosbeak (*Padda oryzivora*) with that of the siskin (*Carduelis spinus*); the tropical species would appear even to have the advantage of a warm clothing, the feathers being remarkably closely arranged; yet it is found in Java and the hottest parts of India, while the siskin is found commonly in Norway and Sweden, visiting this country only in the winter.

Climate, therefore, has little influence in the geographical distribution of the family of birds under consideration, except indirectly, as will be shown.

Why, therefore, it may be asked, is the large sub-family of Tanagrinæ confined chiefly to the warmer parts of America? The answer is this,—they feed very much on insects, and therefore can only exist where that food is abundant; so that the absence of insect life in high latitudes, during the winter months, is fatal to the existence

there of the most insectivorous and least granivorous of all the finches.

But it may be replied that the Javan grosbeak feeds entirely on seeds, and yet its geographical distribution does not extend to temperate regions. This is true; but as its food is mainly confined to the very driest kinds, such as rice and millet, and as it is not found to eat any green food, it can only exist in very hot countries, like India, where the supply of seeds of this character is perennial.

Why, then, is it that the Passer montanus of Java is also tolerably common in England? The reply is that it is nearly omnivorous; it will eat most kinds of seeds whether oleaginous or farinaceous, many vegetables, insects, and even flesh; and, also, it passes the night in holes in trees, well lined with hay and feathers, which it conveys there during the winter months for the purpose of warmth.

To test the effect of cold upon birds which naturally are not found beyond the tropics, the following experiment was made at Blackheath.

In the angle of a house an aviary was constructed, having the top and one side of glass, the front being secured by open wire-work: old materials were used in its construction, and no part fitted very accurately, so that there were many draughts: during the most inclement weather a piece of American imitation leather was hung in front to keep out the wet, but, as this was flapped by every gust of wind, it kept out but little cold air.

The aspect of the open side was nearly south-west, but, as the rays of the sun were much intercepted by trees, the situation could scarcely be considered favourable for warmth.

The experiment was commenced in the autumn of 1863, and was continued through the winter of 1863—4, which was very severe.

It was with difficulty that, on many days, water could be kept liquid sufficiently long to enable the birds to drink; this was generally effected by placing the fountain on a hot tile during the day, and removing it at night.

The birds experimented on were the Javan grosbeak (*Padda oryzivora*), before adverted to—two specimens, male and female; the rufous-necked weaver-bird (*Hyphantornis textor*), from Western Africa—two specimens, both males; the red-beaked weaver-bird (*Euplectes sanguinirostris*), also from Western Africa—male and female; and the blue-bird (*Spiza cyanea*), from the warmer parts of North America. In addition the aviary contained nearly all the British finches, including the Passer montanus before adverted to.

The success was complete: none of the foreign birds showed any

symptoms of distress, and at the end of the winter were in the most robust health ; it seemed, indeed, that they bore the severe cold better than some of our indigenous species, such as the yellowhammer (*Emberiza citrinella*) and the cirl bunting (*E. cirlus*), but this might have arisen from the usual sluggish nature of the buntings.

If, therefore, birds from the tropics can survive the cold of so severe a winter as 1863—4, under the unfavourable conditions of exposure and confinement, by which their natural exercise is very much restricted, and their food not being of so varied a kind as in a wild state, and therefore neither so nutritious nor so well adapted to their constitutions, it may reasonably be inferred that the absence of proper food is the main reason why, in this country, so few birds are found which naturally inhabit tropical regions.

It must, however, be admitted that purely insectivorous birds, such as the nightingale (*Philomela luscinia*), blackcap (*Curruca atricapilla*), and other Sylviadæ, are much less able to bear exposure than granivorous species, and I think this applies to nearly all the Dentirostres : their differentiation from the Conirostres probably took place at a very remote time, and their constitutions have become adapted to warm climates only ; yet even in this tribe there are species, such as the wagtails (*Motacillæ*), the robin (*Erythaca rubecula*), the stonechat (*Saxicola rubicola*), that remain in Britain the whole of the winter.

But any experiment made upon such species in an aviary would be incomplete, because of the great difficulty of keeping any insectivorous bird in confinement, even during the summer months.

It is not, therefore, urged that climate has no direct effect in the geographical distribution of birds, but that it has much less effect than is generally supposed, and doubtless numbers of birds perish annually, even in our exceedingly well-managed Zoological Gardens, from the close, warm, impure atmosphere of the bird-room, that would be living in perfect health in the open air of the aviary.

J. Jenner Weir.

Haddo Villas, Blackheath.

The Autumnal Migration at the Land's End, Cornwall. — I have had a conversation with our townsman, Mr. Michael Roberts, who is a preserver and collector of birds, and is conversant with our native birds. He is now employed as an officer under the Trinity Board, in connexion with the new granite lighthouse now in course of erection at the celebrated Wolf Rock, which is situate about nine miles to the south west of the Logan Rock, and about the same distance from the Land's End. He is in

the habit of going to and fro, in fine weather, the Rock, and generally remains there the whole day till towards evening. He called my attention to the arrival of some of our smaller birds during the first week in November, which, at different times, and in twos and threes, passed the Rock, some alighting, and others flying close by and towards the land. In every instance the birds came from a south-westerly direction, from the direction of Scilly, and not from north to south. Singular enough, these birds consisted of robins, wrens, and a few whitethroats and willow wrens, and also linnets, starlings, fieldfares and redwings. They flew so close to the lighter where he was that they were perfectly distinct, and some of the men caught a whitethroat and let it fly again. Michael Roberts observed two wrens alight, and they jumped about with their tails erect, and were off again in a few minutes. These arrivals were at different times and on different days, but the movements of all were from south to north. There is yet a considerable mystery about the *lex migratorius*. We can understand in some measure why some large flights of woodcocks and snipes appear here with a south-east wind, and others with a north and north-east wind. They are, I think, both a part and parcel of the great migratorial movement from the north to the south. The north and north-east winds bring down, in a tolerably direct line, to the Lizard, Land's End, Scilly Isles and Irish districts, the body of birds from Norway, Sweden, &c. There is no doubt a similar flight from the northern countries of Russia in Europe and Asia; and these birds, in the course of their southward flight to Albania, Egypt, &c., with a strong east or south-east wind, are quite likely to adopt a lateral course, which would very soon bring them to the shores of Great Britain; but then comes the question, How come the small birds in separate troops, during intervals in a week in the early part of November, from the south? The only way that it can be at all accounted for is that all these birds might have encountered an adverse wind, or perhaps current, in going south, and thus were driven back; but then comes also the fact that the weather was apparently as tranquil, and as free from storms and tempests, as at midsummer, and there was no appearance of exhaustion in the birds. We are all, as naturalists, interested in the subject of migration, and I have mentioned the above fact not only as likely, probably, to afford some interest, but also to elicit from your other correspondents their views and suggestions, which will very materially add to the development of the secret.— *Edward Hearle Rodd; Penzance, December* 6, 1864.

Redfooted Falcon, or Orangelegged Hobby, at the Mouth of the Humber. — During the first week of November last, 1864, a female specimen of this extremely rare falcon was shot by a sailor from his ship, as the bird was hovering over the vessel. This was at the time the ship was entering the mouth of the Humber. The sailor took the bird for preservation to a birdstuffer at Hull, whilst it was in the flesh. The birdstuffer, not knowing the species, mentioned it to Mr. Richardson, of Beverley, who gave me a description of the hawk. I recognized the species at once, and have succeeded in purchasing the bird. It was forwarded to me this day, November 8th, 1864, and is still quite soft and pliable. It is a very perfect specimen of the redfooted falcon, and, judging by the plumage, I should pronounce it to be a mature female.— *W. W. Boulton; Beverley, November* 8, 1864.

Osprey in Bucks and Hertfordshire, and Great Gray Shrike and Cirl Bunting in Bucks. — During the greater part of the month of September a pair of ospreys frequented the large reservoirs of the Paddington Canal Company, which are situated in the parishes of Wilstone, a hamlet of Tring, Herts, and Marsworth, Bucks. They

were very tame, and used to take fish in the reservoirs, and in the two canals which adjoin them, whilst persons were standing close by. I had earnestly hoped that they might have been allowed to remain in peace, but I could not help being afraid that their fearless and sociable habits would in the end prove fatal. My suspicions proved but too true, for on September 30th the female bird was shot by a country lad whilst fishing in the canal at Wilstone. The lad, ignorant of the value of his prize, sold it to a broker at Aylesbury for 4*s*. It thence passed into the hands of Mr. James, of Halton, who sent it to the village birdstuffer; the latter unfortunately placed it on the floor of his outhouse, where, during the night, a rat managed to get in and terribly mutilated the head. Mr. James, as soon as he knew of the interest I took in the bird, kindly presented me with the skin. It is now in the hands of a clever birdstuffer, and, with the aid of a skin which has been kindly presented to me by a friend, I hope the damage may be remedied. In other respects the specimen is a very fine one. It appears to be a last year's bird: the male was seen about a week after the female was shot, but then disappeared. Mr. Gould tells me that about that time a male osprey was killed on the Thames at Maidenhead. There can be little doubt that this was the male of my bird. It is rather singular that rather more than ten years ago, in 1853, a third specimen of the osprey was killed on the banks of the canal at Halton, a small village about three miles from hence. It was shot by a labouring man whilst in the act of devouring a dead pigeon which had been thrown on the towing-path out of an adjoining dove-cote. This specimen is now in the possession of Sir Anthony de Rothschild, Bart.—On the 5th of November a very fine male specimen of the great gray shrike was brought to me in the flesh. It had been killed the previous day, by a labouring man, in the parish of Weston-Turville, about four miles from hence. On the 17th the skin of the female bird was brought to me. It had been shot in the adjoining parish of Windorn, about a week previously. — On June 4th, whilst walking with my sisters on a rough grassy down in this parish, one of the latter found a cirl bunting's nest, containing three eggs, in one of the juniper bushes with which our downs are in some places thickly sprinkled. I saw the female bird leave the nest, and have therefore no doubt on the matter. I have an idea that this bird is not uncommon on the downs in this neighbourhood. I have several times noticed the male bird in winter and spring, and have twice had specimens brought me which had been killed with other birds in the farm-yards in winter.—*H. Harpur Crewe; The Rectory, Drayton-Beauchamp, Tring, November* 28, 1864.

Merlin near Beverley.—On August 5th, 1864, a beautiful specimen of this, the smallest British falcon, was shot by William Holmes, farmer, of Arram, near Beverley, in the immediate vicinity of that village. It was sent to me in the flesh, and on dissection proved to be an immature female. I have never seen but two other specimens of this falcon shot in this part of the East Riding. Both of them were females; one was an old bird, the other a bird of the year; and both are in my own collection. *W. W. Boulton; Beverley.*

Voracity of young Sparrowhawks.—I have in my possession a fine female sparrowhawk and six young ones, which Mr. Wilson, of Woodsome Hall, steward to the Earl of Dartmouth, gave me. I will give his history of them:—"One evening last June I was out rabbit-shooting, and on returning home through the wood my attention was drawn to a thrush (*Turdus musicus*) that was chattering, evidently annoyed at something. I had the curiosity to try and find out the cause. Going in the direction of the noise, I saw a hawk fly out of a tree, and, looking round, I saw a nest in a low

tree; from its appearance I believed it to contain young hawks. Stopping near the tree, with gun in hand, the old bird kept flying round; at last it alighted on the top of a tree within shot. I let go, and brought it down. I gathered the bird, and then went up the tree, and found six young hawks, just in white down, which I left. On my way home I met one of the members of the Huddersfield Naturalists' Society, and gave him the bird I had shot, which he pronounced to be a female sparrowhawk (*Falco nisus*). I told him if he would send to my house on the day but one following, I would give him the young ones, with the other parent, if we could get it. The next morning I took the watchers to show them the nest: one of them went up the tree, and found three small birds laid on the young hawks. I gave orders to the men that one of them should be near the nest on the following morning at break of day, and try to shoot the other bird: he went and waited several hours, but never saw it: according to my orders, he then went up the tree to take the young ones, and found no less than fourteen young birds, chiefly sparrows, laid on the young ones, and they were all dead. The only inference I can draw is this, — that the male bird has to provide the food, and the duty of the female is to stay near the young and feed them, and because she was wanting they all died in the midst of plenty. I may add that the birds were all stuffed, and the young ones put into a nice nest, the female standing by tearing up a sparrow and feeding her young. A male bird of the same kind is introduced into the case, and they have been exhibited during the Exhibition of the Huddersfield Naturalists' Society, which was opened by the Earl of Dartmouth on the 14th of October, where they have been admired by thousands." Thinking the history of the hawks might interest some of the readers of the 'Zoologist,' I forward it for publication. — *James Varley; Almondbury Bank, Huddersfield, November* 14, 1864.

Common Buzzard in the East of Cornwall. — A great number of the common buzzard have made their appearance in the eastern part of the county, over a large area of country, during the late easterly winds. The appearance of all our birds of prey is always interesting, from their natural wild character, as well as from their form, plumage, habits and flight. In looking at the economy of Nature in all her productions, very little trouble is necessary to find the law of compensation apply in a more or less degree to every creature; thus, in the common buzzard, the contents of the craw of one lately preserved by Mr. Vingoe showed predatory mischief only in the capture of a blind snake and a mole.—*Edward Hearle Rodd; November* 5, 1864.

Honey Buzzard near Beverley.—During the latter part of September last, I added to my collection two fine specimens of the honey buzzard. Both of these birds were shot near Beverley, and within three miles of one another. The first was shot on September 22nd, 1864, and was sent to me in the flesh. In colour it was light brown, excepting the primaries, which were blackish brown. Many of the feathers were edged or tipped with a creamy gray colour, especially on the nape and beneath the chin. This bird proved, on dissection, to be an immature male. The stomach contained the remains of one of the Coleoptera only. The second specimen was shot on September 26th, 1864, and was also sent to me in the flesh. In colour it appeared to me most peculiar, although I am aware how liable these birds are to vary in plumage. It was of a uniform dark blackish brown colour throughout. In size it was rather larger than the first specimen. On dissection I found that it was an immature male, I should say about the same age as the first specimen, although so different in colour. Its craw and stomach were both filled to distention with wasp-grubs, on which it must have

been feeding immediately before its capture. The iris in both these birds was very dark brown or hazel.—*W. W. Boulton; Beverley, November* 1, 1864.

Great Gray Shrike near Beverley.—On October 7th, 1864, a splendid old male specimen of this species, in full plumage, was shot by one of the farm-servants in the employ of Mr. Cressey, of Frodingham, on Mr. Cressey's farm. Frodingham is a village fourteen miles from Beverley. I am informed that the bird was extremely shy and wary, and was only shot at last by careful stalking. I have secured the specimen for my own collection. It is the fourth I have seen that had been shot in this neighbourhood, three of which are in my own collection.—*Id.*

Great Gray Shrike at Preston.—A fine female was shot near here last month, in the same district that one was shot three years ago.—*J. B. Hodgkinson;* 31, *Christ Church Street, Preston.*

Parti-coloured Blackbird.—My attention has been drawn by a farmer, a neighbour of mine, to a blackbird, whose haunt is a low hedge in a cow-pasture and close to the pond. It is beautifully marked with white. On the breast there are several white feathers, which are in shape like a crescent. The wings are also barred with white, and two of the tail-feathers are of the same colour. I have had several opportunities of seeing this pretty bird.—*J. Ranson; Linton-on-Ouse, York.*

The Roller in Lincolnshire.—A specimen, evidently in immature plumage, was shot at Louth, in North Lincolnshire, in October, 1863, and is now in my possession. —*Thomas H. Allis; York, November*, 1864.

Late Stay of Swallows.—On Saturday morning, November 5th, about 11 o'clock, I observed three swallows hawking for insects, and apparently as active on the wing as in the summer time. There had been a frost on the previous night: the morning was bright, and temperature about 42° in the shade, when I noticed the birds. Perhaps there is nothing very unusual in the appearance of these birds so late in the season, but it seemed to me so contrary to their usual habits that, while performing my daily avocations, I could not help stopping for a few minutes to witness the evolutions of these interesting little creatures.—*James Dutton; Hammersmith, November* 11.

Late Swallow.—On the 11th of this month a swallow flew within four or five feet of me: a friend standing with me saw it as well. As this is very late for this species, I thought it might be worthy of mention.—*E. D. Hamel; Bole Hall, November* 21.

Note on the late Nesting of the Wood Pigeon near Worthing.—A pair of young wood pigeons were taken from the nest, in the neighbourhood of Worthing, on the 10th of November, 1864.—*J. H. Gurney; November*, 1864.

Creamcoloured Courser in Cumberland.—A specimen of this very rare British bird was killed at Allonby, near Maryport, in October, 1864, and is now in my possession. —*Thomas H. Allis; York, November*, 1864.

Purple Gallinule in Hampshire.—A specimen of the purple gallinule was shot by Mr. Charles Stares, on the 10th of August, 1863, in the marshes of The Grange, in the parish of Rowner, Hants, while shooting flappers.—*William Stares; December* 1.

Spoonbill on the Coast of Norfolk.—About the 27th of October last an immature specimen of this species was killed at Hickling. It was purchased by a gentleman and presented to the Norwich Museum. It is now in the hands of Mr. T. Knights, birdstuffer, of this city, for preservation. A second individual was seen about the same time in the neighbourhood of Burgh St. Peter, near Great Yarmouth: it was shot at, but not hit, as the bird succeeded in making its escape. An immature male (in all probability the same individual) was shot a short time afterwards by a young

man, at the village of Freethorpe, a few miles distant from the last-named place: it measured 32 inches from the tip of its bill to the end of its tail, and 4 feet 8 inches across its wings to the point of each. The stomach was empty.—*T. E. Gunn.*

Bittern near Epworth, Bawtry. — I have just seen a very fine example of the bittern, shot to-day by Mr. T. Bletcher, on his farm near Epworth, who has placed it in the hands of Mr. H. Gravil, of this town, for preservation. About thirty years since this magnificent species was very abundant here, but the improved drainage has caused their visits to be few and far between. One specimen was shot here last year. I am truly sorry that this, one of our noblest species, should be so fast disappearing from among us.—*Samuel Hudson; Epworth, Bawtry, November* 14, 1864.

Squacco Heron near Yarmouth.— On the 8th of July, 1864, during a short stay in London, I obtained a splendid specimen of the adult squacco heron in the flesh. It was killed near Yarmouth on the previous day by a gardener, and forwarded by him to Mr. Ward, of Vere Street. The weather being very hot at that time, I had the bird skinned at once, and upon dissection it proved to be a male. The plumage was peculiarly rich and fine; in fact I never saw so good a specimen. It has been very beautifully set up by Mr. Henry Shaw, of Shrewsbury, and is now in my collection.—*John Rocke; Clungunford House, Shropshire.*

Great Northern Diver on the Sussex Coast.— I have to-day seen a specimen of the great northern diver in the flesh, which had been recently killed off the coast. From the plumage I should take it to be a young male, the general colour of the upper parts being ash-gray, the rings on the neck faintly visible.—*W. Jeffery, jun.; November* 23.

Leach's Stormy Petrel at Worthing.—A specimen of Leach's stormy petrel was picked up exhausted, on the beach at Worthing, on the 21st of November, 1864: the bird was in good plumage, but much emaciated.—*J. H. Gurney.*

Habit and Description of the Larva of Acidalia immutata.—I received eggs of this species from Dr. Knaggs on the 18th of July, 1863, and the larva hatched on the 22nd. They chose for their food Polygonum aviculare, but did not attain any great size before hybernating. Through the winter they rested on the withered stems of their food-plant, and did not begin to feed again in spring till the young seedlings of the Polygonum had put out their second pair of leaves, when they seemed to find out that it was time to commence eating again. They attained their full growth during the last week in May and first week in June of the present summer, and spun themselves up in silken cocoons under some short moss which had grown up on the surface of the earth in their flower-pot. The first moth emerged on the 2nd of July. When full grown the larva is about $1\frac{1}{8}$ inch long. In shape cylindrical, slightly puffed at the spiracles, tapering evenly towards the head, which is small and round; the whole skin is ribbed in rings, which go quite round the body. The ground colour is a warm stone-coloured tint, and there is a dusky dorsal line forming two small dots at each segmental division; above the spiracles an irregular double dusky line; spiracles black, placed in a stripe, rather paler than the ground colour, below which comes another dusky line, darkest on its upper edge and fading off below. The larva described above in structure and colouring resembles those of Acidalia fumata, A. promutata and A. imitaria, except that the two last are longer; and it is altogether different from the type furnished by the shorter, stiff and flattish larvæ of A. subsericeata, A. incanata, A. aversata, A. inornata and A. osseata.—*Rev. J. Hellins, Exeter, in 'Entomologist's Monthly Magazine.'*

Description of the Larva of Tethea subtusa.—The eggs of this species are probably laid at the end of July and throughout August, on the young twigs of poplar. The larva hatches in the folllowing spring, as soon as the young buds burst into leaf; it immediately spins two leaves together, and continues this practice during the whole of the larval state. Like some other species it effects the various changes of skin in the same situation. In confinement it appears to feed only at night. The following is a description of the full-grown larva, which is not at all variable either in colour or markings,—pale yellowish green, rather glossy, not unlike N. dictæa. The dorsal stripe broad pale yellow, much more so than the ground colour. Spiracular line the same; along the latter is a row of black rings, somewhat oval, having a pale yellow centre. There is one such ring in the second and ten following segments. Just midway between the dorsal and spiracular lines is another slender, clear yellow stripe, slightly interrupted by the segmental divisions. Head chrome-yellow, bordered with black. Mouth and prolegs black, slightly mottled with yellow. The larva lies curled up between two leaves spun together, and in this position, when in a state of nature, may easily be detected by looking up at the leaves. Pupa subterranean; pupa-case weak. The larva is full-grown about the end of May, and the perfect insect appears throughout July. It appears widely distributed, and not uncommon.—*Rev. J. Greene; Cubley Rectory, Doveridge, Derby, July* 12, 1864, *in* '*Entomologist's Monthly Magazine.*'

Habits and Description of the Larva of Lozogramma petraria.—A captured moth laid me some eggs on the 10th of May, 1864. These at first were pale straw-coloured, soon turned bright red, and afterwards became dingy. The larvæ hatched on the 28th of May, and fed throughout most freely on common fern (*Pteris aquilina*); they rested at full length, but when disturbed twisted into knots and jumped about angrily. They went to earth during the last week in June. The larvæ assimilate well in appearance to their food-plant, and must be hard to detect. When full-fed their length is rather over an inch, shape cylindrical and of uniform size throughout, except that the segmental folds look contracted and the head is rather flattened. The ground colour olive-green, belly paler, more olive-gray; some individuals had a slight reddish tint. At first sight the whole larva seems to be covered with very slender chocolate-brown longitudinal lines; I could count at least twenty-four all round the body, but on examination it is seen that these are arranged in pairs; thus, there is a double dorsal and three double subdorsal lines, the lowest being darkest and thickest. The spiracles black, below them a creamy white line; and the belly is striped somewhat like the back, only that the lines are more diffuse and not so numerous; the segmental folds are red. —*Rev. J. Hellins, Exeter, in* '*Entomologist's Monthly Magazine.*'

Proceedings of Societies.

Entomological Society.

December 5, 1864.—F. P. Pascoe, Esq., President, in the Chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—'Catalogus Specierum Generis Scolia,' conscripserunt Henricus de Saussure et Julius

Sichel; presented by the Authors. 'Elatérides Nouveaux,' par M. E. Candèze; by the Author. 'Tijdschrift voor Entomologie,' Vol. vii. Parts 1—5; by the Entomological Society of the Netherlands. 'Sepp, Nederlandsche Insecten,' 2d Series, Nos. 35—46; by S. C. Snellen van Vollenhoven, Esq. 'Synopsis des Agrionines, 4e légion: Platycnemis,' par M. Edm. de Selys-Longchamps; by Dr. Hagen. 'Die wirbellosen Thiere der Provinz Preussen'; 'Die Odonaten und Neuropteren-Fauna Syriens und Klein-Asiens;' by the Author, Dr. Hagen. 'The Journal of Entomology,' No. 11; by the Proprietors. 'The Zoologist' and 'The Entomologist' for December; by the Editor. 'The Entomologist's Monthly Magazine,' No. 7; by the Editors. 'The Journal of the Society of Arts' for November; by the Society. 'The Reader' for November; by the Editor. 'The Athenæum' for November; by the Editor.

The following additions by purchase were also announced:—Voyage de Découvertes de l'Astrolabe—Partie Entomologique, par le Docteur Boisduval; Fabricius (J. C.), Species Insectorum; Paykull (G.), Fauna Suecica, Insecta; Paykull (G.), Monographia Staphylinorum Sueciæ; Paykull (G.), Monographia Caraborum Sueciæ; Gravenhorst (J. L. C.), Coleoptera Microptera Brunsvicensia nec non Exoticorum quotquot exstant in Collectionibus Entomologorum Brunsvicensium; Percheron (A.), Monographie des Passales; De Laferte-Senectére (F.), Monographie des Anthicus; Sturm (Jacob), Catalog der Kaefer-Sammlung; Catalogue de la Collection Entomologique du Muséum d'Histoire Naturelle de Paris, par MM. Milne-Edwards, Blanchard et Lucas; Fairmaire (Léon), Essai sur les Coleoptères de la Polynésie; Fallen, Monographia Cimicum Sueciæ.

Election of Members.

The Rev. Herbert Milnes, of Crich, near Matlock; William Hume, Esq., of 9, Gracechurch Street, London; and Trovey Blackmore, Esq., of The Hollies, Wandsworth, were ballotted for and elected Members of the Society.

Exhibitions, &c.

Mr. J. Jenner Weir exhibited some microscopic preparations of the spiral tongues of butterflies, for the purpose of showing the diversity of striation of the spiral tongue in different species, and of certain papillæ existing at the end of that member; the papillæ in Vanessa C-album were very different from those of the closely-allied species of Vanessa, whilst in the genus Argynnis they were found to be extremely brittle.

Mr. Bond exhibited a coloured drawing, by Mr. Buckler, of the larva of Acronycta strigosa, feeding on hawthorn; and a photograph of a remarkable negro variety of Abraxas Grossulariata.

The Rev. H. Clark exhibited a collection of Coleoptera made by Mr. Pickard-Cambridge above Cairo.

Mr. W. F. Evans sent for exhibition a box full of Lamellicorn beetles, or fragments of beetles, which had been picked out of some New Zealand wool; in some of the fleeces there were thousands of them. He inquired whether the beetles were in any way parasitic on the sheep, or sheep-tick feeders, or how they came to be in the wool? Mr. McLachlan said that thousands of the beetles occurred also in Australian fleeces. Mr. Janson determined the species to be Pyronota festiva; he believed that in the course of their flight the insects came in contact with the sheep, and became entangled in the wool so as to prevent their escape.

The President exhibited some globular spiders' nests from South Australia, whence they had been sent to him by Mr. Odewahn, of Gawler. The nests were found on branches of trees; the spiders were hanging near them, and were described as looking like the excrement of a bird, or as resembling the Longicorn beetle Onychocerus Scorpio, whilst the nests bore a remarkable resemblance to the fruit of Leptospermum, one of the Myrtaceæ, the native tea-tree of Australia.

Mr. S. Stevens exhibited several pairs of Cheirolasia Burkei, one of the rare Goliath beetles, recently received from Africa; and read a letter addressed to him by M. Du Chaillu, dated Fernand-Vaz River, 20th August, 1864, in which the writer announced the despatch to London of a large collection of insects, a live gorilla, and a number of gorilla-skins and skeletons; he intended to start in a few days for the interior, and would probably remain two years. Mr. Stevens mentioned that the gorilla had died on its passage to this country, but the collection of insects had arrived, and some of the Coleoptera were exhibited, including four or five species of Goliath beetles, G. Savagei, G. Sayii, G. torquatus, G. micans, &c.

Mr. F. Smith exhibited a parti-coloured wasps' nest belonging to Mr. Stone, of Brighthampton. Mr. Stone had a nest of Vespa Germanica in a window on the ground-floor, and in a corresponding position in the first-floor window, immediately over the other, was a nest of Vespa vulgaris; his attention was called to the nest on the ground-floor by the different colours of different parts thereof, some of which were found to be constructed of decayed wood, such as would be used by the common wasp, but not by Vespa Germanica. Examination showed that the lower nest owed its construction to the united labours of both species of wasps, the different material employed by each determining the colour of the portion built by that species. Further observation proved that specimens of the common wasp, when returning homewards with a low flight, entered the nest of V. Germanica, apparently by mistake, and deceived by the similarity of situation of the two nests.

Mr. F. Smith also exhibited the large larva and pupa of Ripiphorus, found in queen-cells of the common wasp, referred to at the previous meeting (Zool. 9378), and read the following communication from Mr. Stone:—

"It is certainly not the fact that female Ripiphori are found exclusively in female cells of wasps, and males in those of workers; for I have bred scores upon scores of both males and females from the cells of workers; nor can I perceive any very great difference in the size of the sexes, although the females are unquestionably somewhat larger, and much more plump in appearance, than the males; still there is nothing approaching the vast disproportion in size which exists between full-grown larvæ found occupying the cells of queens and those found in the cells of workers. The former must produce specimens of gigantic size. Then there must either be two distinct species, or there must be a permanently large and small variety, the former invariably depositing its eggs in the cells of queens, the latter in those of workers; or, if there is only one species, and no permanent variety of the insect, it must be that the difference in size arises solely from the fact that some larvæ have been placed, or by a piece of good luck have placed themselves, in a situation in which they have met with an abundant supply of food, thus enabling them to attain the full and proper size, and so produce *Ripiphorus as it ought to be;* while the others must be looked upon as diminutive examples of the insect, dwarfed and stunted by the limited and insufficient supply of food allotted to the larvæ from which they were produced. May I direct

Prof. Westwood's attention to page 294, vol. i., of 'An Introduction to the Modern Classification of Insects'? He will there find the following statement:—'The larger specimens of the Ripiphorus paradoxus, which are much more rare than the smaller ones, are uniformly found only in the cells of female wasps.' This statement appears to be made on the authority of the Rev. F. W. Hope, and from it I think may be plainly seen that that gentleman did not consider these large examples to be exclusively females, and the smaller ones, bred in the cells of workers, exclusively males."

Mr. Smith remarked that, according to Mr. Hope's experience, the Ripiphorus was found only in the nests of Vespa rufa, whereas Mr. Stone never found it in the nest of Vespa rufa, but only in that of V. vulgaris. Prof. Westwood thought this apparent discrepancy probably arose from some mistake in the nomenclature or synonymy of the species of wasp, rather than from an actual difference of habit of the Ripiphorus in different localities.

Mr. W. F. Kirby read the following:—

Notes on the Synonymy of certain British Butterflies.

"The following notes on priority are taken chiefly from Staudinger's 'Catalogue.'

"Genus Pyrameis, *Hüb.*, *Doubl. & Hew.*—This genus, which can be immediately distinguished from Vanessa by the rounded and scalloped hind wings, contains a number of very closely-allied species from different parts of the world, and forms an exceedingly natural group. This genus is admitted by many writers on exotic Entomology; but our European writers generally place the only two European species (Pyrameis Atalanta and P. Cardui), under the genus Vanessa. I think that so natural and well-marked a genus should be universally admitted.

"Genus Melanagria, *Meigen* (Arge, *Esp.*, *Hüb.*, *Bd.*)—This genus contains the group of Hipparchiæ, represented in England by Melanagria Galathea. The name Arge is inadmissible, because it is the specific name of one of the European species. Those who adopt the name Arge for the genus employ for the species Amphitrite, a name subsequently given to it.

"Erebia Epiphron, *Knoch* (Cassiope, *Fab.*)—If Staudinger is right in referring Erebia Epiphron and E. Cassiope to the same species, the latter name must sink, as Epiphron has the priority by ten years.

"Erebia Medea, *W. V.* (Blandina, *Fab.*)—The name Medea should be retained, as it has a priority of seventeen years.

"Polyommatus Medon, *Hufnagel* (Agestis, *W. V.*)—The former name has a priority of ten years, and should be retained.

"Polyommatus Icarus, *Rottemberg* (Alexis, *W. V.*)—The name Icarus has a slight priority, but that of Alexis is extremely objectionable, as there is an East Indian species of Stoll's (Œlicurus of Fabricius) bearing that name. The British species in question need not be confounded with the Icarius of Esper, a European insect, as we can adopt Schneider's name Amandus for that, as, if the two names are not simultaneous, it is probable that Schneider's has the priority.

"Polyommatus Serviargus, *Rottemberg* (Acis, *W. V.*)—Rottemberg's name has a slight priority over the other.

"Pyrgus Malvæ, *Linn.* (Alveolus, *Hüb.*)—Both Wallengren and Staudinger agree with Westwood in assigning Linneus's name to this insect. Illiger's P.

Malvarum, to which Linneus's description is generally referred, does not appear to occur in North Europe at all.

"Genus Cyclopides, *Hüb.* (Steropes, *Bd.*) — Boisduval's name is quite inadmissible, as it is the specific name of the type of his genus, for which he uses the name Arminthus, given to the insect eighteen years after the former one. His genus Syrichthus (Pyrgus, *Hüb.*) is also objectionable, as it is the Fabrician synonym of the North American Oileus of Linneus, a species most certainly belonging to Boisduval's genus Syrichthus."

Papers read.

Mr. W. C. Hewitson communicated "A Monograph of the Genus Ypthima, with Descriptions of two New Genera of Diurnal Lepidoptera." The new genera Cœnyra and Xöis consist each of a single species — Cœnyra Corycia, from Natal; and Xöis Sesara, from Fiji. Of Ypthima twenty-four species are enumerated, of which seven are new, viz., Y. Inica (East India), Y. Itonia (White Nile), Y. fasciata (Sarawak, Sumatra), Y. Ceylonica (Ceylon), Y. Loryma (Macassar, Celebes), Y. Methora (North India), and Y. Sepyra (Gilolo, Batchian).

Captain Hutton, of Mussooree, N.W. India, communicated a paper "On the Reversion and Restoration of the Silkworm." In this, the concluding part of a former communication to the Society (see 'Transactions,' 3rd series, ii. 143), the author details the progress of his experiments during 1864, with a view to the restoration of the silkworm to its pristine state of health. The selected black worms were hatched on the 21st March, some of the eggs having been laid in the spring and others in the autumn of 1863; all were decidedly unhealthy, the autumn batches less so than those of the spring; the latter were so terribly afflicted with jaundice, and with some disease that turned the worms dull green, that the whole of them had to be thrown away. The worms from the autumnal batch of eggs went on satisfactorily and spun good cocoons, the moths from which deposited a goodly number of eggs at the end of May, and these began to hatch for a second crop in September. With a few of this brood the author expresses his intention of carrying on his experiments for amusement, but he now feels fully persuaded that the constitution of the worm has been so thoroughly undermined, that, although it may be restored to its natural appearance, it will never be able to shake off the various diseases to which it has so long been subject. The only way open to the sericulturist is therefore to re-seek, in the original habitat in China, for the wild worms in their natural state of freedom on the trees, and, should any be procurable, the entire stock in Europe may be gradually renewed. The author, after arguing at length against the opinion of Indian sericulturists that the several forms of silkworm are but varieties of a single species, then proceeds to evolve eighteen silk-producing species of Bombycidæ, twelve belonging to the genus Bombyx (six domesticated and six wild species), five belonging to the genus Ocinara, the remaining one being the Trilocha varians of Moore.

New Part of 'Transactions.'

A new Part of the 'Transactions' (Third Series, vol. ii. Part 3) was announced as ready for distribution.—*J. W. D.*

Notices of New Books.

'*A Descriptive Catalogue of the Raptorial Birds in the Norfolk and Norwich Museum.*' Compiled and arranged by John Henry Gurney. Part I. containing Serpentariidæ, Polyboridæ, Vulturidæ. London: John Van Voorst, Paternoster Row. 1864. 90 pp.; crown.

The word "descriptive," in its usual acceptation, is scarcely applicable to this very agreeable work. The term, as used by naturalists, implies that each species is described after the technical manner adopted by ornithologists: this is not so; there is no specific description, but, instead thereof, a pleasant selection from the narratives of travellers, connected together by the author's own appropriate observations. I give the author's simple but explanatory Preface entire, and his account of a single species: the first sets forth his object and intention; the second abundantly shows how that intention has been carried out.

"In compiling the first portion of a Catalogue of the Raptorial Birds in the Norfolk and Norwich Museum (which I hope at a future time may be followed by the remainder), I have considered it desirable, in the first place, to give a list of the several species contained in the collection, in the order in which they are there arranged (that order being such as has appeared to me to be, on the whole, the most conformable to their natural affinities). Secondly, to affix to each species the specific name to which it is by priority entitled, to which I have added one or more subsequent synonyms in order of priority, where I have thought the older in any respect objectionable. Thirdly, to give a list of the specimens of each species, as well as of the localities from which each specimen has been obtained, when known, together with the name of the donor; or, in the case of specimens which I have myself placed in the Museum (and to which the letter G is affixed), the name either of the original collector or of the person from whom such specimens passed into my hands, both these names being given where I have been able to supply them. Fourthly, I have stated such particulars as I have been able to ascertain respecting the geographical distribution, food, nidification and habits of each species, and also as to the colour of the irides, and of other parts of which the natural hue cannot be accurately known by an examination of stuffed specimens only. Fifthly, although, as these pages are primarily intended for the use of visitors to the Museum, I have not

thought it needful (with the above exception) to describe the form, size or colour of the birds which may there be seen; I have given, for the convenience of readers at a distance, should these pages be perused by any such, a reference to one or more plates of each species and of its egg, in every instance in which I have been able satisfactorily to do so. In conclusion, I have only to add that, as the following pages contain very little original matter, I have done my best to insure that their contents, if not original, should at least be accurate. With this view I have, as far as possible, abstained from inserting any statements of the correctness of which I have felt at all doubtful, and whenever I have deviated from this rule I have indicated in the text any doubts which I have entertained. I postpone till the completion of this Catalogue a reference to the authors from whose works I have drawn my principal materials, and also my acknowledgments to those ornithological friends to whose kind assistance I have been greatly indebted in studying the Natural History of the birds of prey, and in arranging the collection to which these pages are intended to refer."

"*Southern Caracara* (Senex Australis).—The southern caracara is found within very restricted geographical limits, which contrast curiously with the wide range of Polyborus tharus. Mr. Darwin, who describes this bird in the 'Zoology of the Voyage of H.M.S. Beagle,' under the synonym of Milvago leucurus, thus defines its geographical distribution:—'The Milvago leucurus is exceedingly numerous at the Falkland Islands, and, as an old sealer who had long frequented these seas remarked to me, this Archipelago appears to be their metropolis. I was informed by the same authority that they are found on the Diego Ramirez Rocks, the Il Defonso Islands, and on some others, but never on the mainland of Tierra del Fuego. This statement I can corroborate to a certain degree, as I never saw one in the southern part of Tierra del Fuego, near Cape Horn, which was twice visited during our voyage. They are not found on Georgia or on the other antarctic islands.' Mr. Darwin adds the following remarks on the habits of this species:—'In many respects these hawks very closely resemble in their habits the Polyborus Brasiliensis.* They live on the flesh of dead animals, and on marine productions. On the Ramirez Rocks, which support no vegetation, and therefore no land animals, their entire sustenance must depend upon the sea. At the Falkland Islands they were extraordinarily tame and fearless, and constantly

"* Mr. Darwin refers, under the name of Polyborus Brasiliensis, to the Brazilian caracara, which I have designated in these pages by the prior synonym of Polyborus tharus."

haunted the neighbourhood of the houses to pick up all kinds of offal. If a hunting party in the country killed a beast, these birds immediately congregated from all quarters of the horizon, and, standing on the ground in a circle, they patiently awaited for their feast to commence. * * * * They readily attack wounded birds. One of the officers of the 'Beagle' told me he saw a cormorant in this state fly to the shore, where several of these hawks immediately seized upon it and hastened its death by their repeated blows. I have been told that several have been seen to wait together at the mouth of a rabbit hole,* and seize on the animal as it comes out. * * * * The 'Beagle' was at the Falkland Islands only during the early autumn (March), but the officers of the 'Adventure,' who were there in the winter, mentioned many extraordinary instances of the boldness and rapacity of these birds. The sportsmen had difficulty in preventing the wounded geese from being seized before their eyes; and often, when, having cautiously looked around, they thought they had succeeded in hiding a fine bird in some crevice of the rocks, on their return they found, when intending to pick up their game, nothing but feathers. One of these hawks pounced on a dog which was lying asleep close by a party who were out shooting; and they repeatedly flew on board the vessel lying in the harbour, so that it was necessary to keep a good look-out to prevent the hide used about the ropes being torn from the rigging, and the meat or game from the stern. They are very mischievous and inquisitive; and they will pick up almost anything from the ground. A large black glazed hat was carried nearly a mile, as were a pair of heavy balls used in catching wild cattle. Mr. Usborne experienced during the survey a severe loss in a small Kater's-compass, in a red morocco case, which was never recovered. These birds are, moreover, quarrelsome and extremely passionate; it was curious to behold them, when impatient, tearing up the grass with their bills from rage. They are not truly gregarious; they do not soar, and their flight is heavy and clumsy. On the ground they run with extreme quickness, putting out one leg before the other and stretching forward their bodies, very much like pheasants. The sealers, who have sometimes, when pressed by hunger, eaten them, say that the flesh when cooked is quite white, like that of a fowl, and very good to eat, a fact which I (as well as some others of a party from the 'Beagle,' who, owing to a gale of wind, were left on shore in Northern

"* The rabbits of the Falkland Islands, here referred to by Mr. Darwin, are descended from English rabbits which have been turned loose on the Islands."

Patagonia, until we were very hungry) can answer for is far from being the case with the flesh of the carrancha, or Polyborus Brasiliensis. It is a strange anomaly that any of the Falconidæ should possess such perfect powers of running as is the case with this bird, and likewise with the Phalcobænus montanus of D'Orbigny. It perhaps indicates an obscure relationship with the gallinaceous order, —a relation which M. D'Orbigny suggests is still more plainly shown in the secretary bird, which he believes represents in Southern Africa the Polyborinæ of America. The Milvago leucurus is a noisy bird, and utters several harsh cries, of which one is so like that of the English rook that the sealers always call it by this name. It is a curious circumstance, as showing how, in allied species, small details of habit accompany similar structure, that these hawks throw their heads upwards and backwards in the same strange manner as the carranchas (the tharu of Molina) have been described to do.' The following particulars respecting the nidification of this species are extracted from a very interesting paper on the birds of the Falkland Islands, contributed by Captain C. C. Abbott to the third volume of the 'Ibis':—'This is one of the commonest birds in East Falkland; one or two of their nests are sure to be found near a penguin rookery. During an expedition I made to the North Camp in December, 1860, I found at least fifteen nests along the cliffs of the north shore; all these had two young ones in them, covered with down of a light yellow colour. The nest is generally composed of the dead fibres of the tussac grass, and frequently has some sheep's wool in it. The eggs are laid the first week in November, and are generally two, sometimes three, in number. In a nest that I once robbed of three eggs, on going to it again about a week later, I was surprised to find two more laid, one of which was a very light-coloured one. * * * * I once had my cap knocked off by this bird while taking its eggs, and had it not been for a friendly piece of tussac growing near, I should have fallen into the sea from the perpendicular cliff where the nest was situated.' The iris in this caracara is dark brown; the cere, legs and feet are a bright lemon-yellow, and the bare skin of the crop is of the same colour, but paler and not so bright. In immature birds the cere and feet are of a slaty colour."—P. 20.

EDWARD NEWMAN.

Otters in Middlesex. — In compliance with your wish, I have endeavoured to collect all the information possible regarding the otters which have been killed at various times in this county, and which I have before alluded to (Zool. 9155). I am now enabled, with the assistance of my friend Mr. Bond, to send you some further particulars respecting them. In the spring of 1829, I believe in the month of March, a young otter, probably about eight months old, was killed at Kilburn, in a brick-field which is now the site of the railway station. In the autumn of 1831 an otter haunted the Brent, where the head of Kingsbury Reservoir now is. The Reservoir was not then formed, and at that particular spot there was a famous bed of flags, well calculated to afford shelter to an otter. About the end of September or beginning of October this otter was shot by a sporting butcher, who declared afterwards that, as it moved through the cover, he mistook it for a hare. A third otter was seen for several months during the autumn of 1847, about the brook between Hendon and Edgeware, and was several times hunted by the harriers of Mr. Dancer, of Kenton, but, I believe, was never killed. A fourth, which was described as a very fine, large animal, was observed early one morning, by a policeman on duty, crossing the park belonging to Lord Mansfield at Hampstead, and making for the water. It was subsequently seen by Mr. Ward, jun., of Millfield Lane, Hampstead, and several other persons, some of whom laid in wait to try and shoot it, but did not succeed: this was in the spring of 1855. One of the most extraordinary places that I have heard of, in which to find an otter, was Aberdeen Place, leading from Maida Hill to St. John's Wood. Early in the morning, on the 25th of March, 1863, a coachman was proceeding to his stables in St. John's Wood, when he observed an otter trotting along close to the wall, and, overtaking it, he succeeded, by repeated kicks on the head with his heavy boots, in killing it. It was then taken to Mr. Gardner, of Holborn, for preservation, and I heard of it the following day. If this was not an escaped specimen, I can only account for its appearance in such a place by supposing that the animal had come up the canal to Maida Hill, and, being unwilling to follow the water *under* the canal bridge, or, more properly speaking, through the tunnel, had taken to land, and was following the course of the water *above* ground, and would probably have entered the canal again in Regent's Park if unmolested. The last otter killed in this county, as far as I can learn, was the one killed in May last at Kingsbury Reservoir. As I have before stated (Zool. 9155), it was surprised in some long grass near the water, and, after a severe struggle, was killed with the aid of a powerful dog. It is conjectured that all these animals, with the exception of the one killed at Maida Hill, must have come up the Brent from the Thames. I shall be glad if any correspondent can add any further particulars or observations upon this interesting subject. — *J. Edmund Harting; Kingsbury, Middlesex, November* 11, 1864.

Otters near Salisbury.—On the 15th of November I obtained a female otter in the flesh; it weighed nine pounds, and appeared to be about half-grown: a person named Downer killed it in a meadow near Charlton, a village four miles to the south of Salisbury; he discovered it towards the close of the day, in a drain or small water-course, and, with the aid of a dog which accompanied him, after a chase of ten minutes he succeeded in capturing it. I had another brought to me by Downer on the 8th of this month (December), which he killed close to the spot where he captured the former: this one is also a female, but weighs only seven pounds. On the 8th of November an old female otter was trapped in the same locality, near the adjoining village of Britford; it weighed thirteen and a half pounds, and from the circumstance

of its having milk in the mammæ I think it probable that the two whose capture I have recorded above were her offspring. The Rev. A. P. Morres, of East Harnham, has the adult specimen; the two young ones are in my own possession. On the 7th of November a female otter, which weighed fourteen pounds, was killed in the parish of Houghton, a village fifteen miles to the north-east of Salisbury; and on the following day a very fine male or dog-otter, weighing twenty-three pounds, was trapped on nearly the same spot: both animals were sent to Mr. Cotton, of Stockbridge, to be stuffed. —*Henry Blackmore; Salisbury, December* 12, 1864.

Common Hare.— Have any of your readers noticed that the hares shot this winter have more white about their heads and faces than usual? This seems curious, as the weather has hitherto been very mild. The white is principally on each side of the face between the nose and the eyes, a patch above each eye, and another behind each ear. My attention was first called to the fact by a friend who had observed it in Ayrshire. It would be interesting to know if it has been also observed in other parts of the country.—*E. R. Alston; Stockbriggs, Lesmahagow, N.B., December* 15, 1864.

Rustic Shrew.—Would you, or some correspondent, kindly give us a short description of the rustic shrew (Sorex rusticus of Jenyns), by which observers might identify that species? It is not described by Prof. Bell, and perhaps if its characters were better known it might be found in new localities.—*Id.*

A Tame Field Vole.— A friend gives me the following interesting account of a tame field vole, or short-tailed field-mouse (*Arvicola agrestis*), which he kept for about two months, several years ago. My friend was walking in a field in Ayrshire, when he observed the poor little beast, hardly able to crawl, and covered with some kind of "tick." Picking it up he removed the vermin, and took it home, where a box was at once fitted up for its accommodation, and so familiar was it from the first that it ate from its master's hand as soon as it was taken to the house. Little "Peter," as he was named, soon learned to come when called, and was let out of the box every day to play about the room. Strange to say he showed a decided appreciation of fun, a favourite amusement being to hide himself in a basin of corn which was kept for his benefit. In this he would bury himself, refusing to answer to his name, and evidently expecting to be looked for. If my friend took no notice of him, however, Peter's slender stock of patience soon became exhausted; first a shrill squeak was heard, then the corn flew up in showers, and at last up came Peter's little round head to the surface. By his tricks and tameness he soon became a universal favourite; but mice, like men, are mortal, and at last, when his master was from home, poor Peter fell a victim to his own popularity. One of the servants gave him a large jargonelle pear before going to church, and on her return she found that Peter had feasted "not wisely, but too well," and was evidently expiring of surfeit! In vain she administered castor oil and wrapped the sufferer in flannel; in vain she shed tears over his deathbed; after a few struggles Peter departed for the happy hunting-grounds, "deeply lamented by all who knew him." I do not recollect ever meeting with a similar anecdote of this species. Of the strict accuracy of the above, however, your readers may rest fully assured.—*Id.; December* 26, 1864.

Food of Quadrupeds: Mustela vulgaris.— Rambling along a country lane near Appleby, in Westmoreland, I was startled by what sounded singularly like the feeble cry of an infant not far off. Whilst pausing to ascertain from what quarter the cry came, a full-grown weasel popped its head above some rather long grass growing in a ditch about ten yards before me, and, after eying me curiously for a few seconds,

disappeared again. Once more I heard the plaintive cry, and, now suspecting where it came from, I crept near enough the spot to see the weasel seize upon a goodly-sized frog, with which it scampered off. My walking-stick, rapidly thrown after the fugitive, compelled it to relinquish its burthen, and enabled me to ascertain that, beyond a few teeth-marks in one side, poor froggy was not much the worse for the encounter. Do frogs form a part of this animal's food?— *Henry Moses; Russell Street, Reading.*

Rats carrying off Hen's Eggs. — The rector of a parish in Westmoreland assured me he had witnessed this feat. Having lost many eggs belonging to a laying hen, he was induced to watch to discover the thief. One morning, soon after the cackling bird had given warning that she had deposited an egg, he observed two rats come out of a hole in the hen-house and proceed direct to the nest. One of the rats then laid down upon its side, whilst the other rat rolled the fresh egg so near it that it could embrace it with its feet. Having now obtained a secure hold of the egg, its companion dragged it into the hole by its tail, and disappeared. We may ask how the rats got at the contents of the egg?—*Id.*

Does the Ship Rat drink Salt Water? — This question I once put to the skipper of a merchant ship I sailed in as a passenger to India. His own impression was that they did. I still doubt it. Once again, alluding to this subject, a relative told me that he had been informed by a tide-waiter, whose duty it was to sit frequently in a little hut on the George's pier-head, Liverpool, and there await the arrival of vessels, that while at his post, very early one summer morning, he heard a strange pattering noise outside the hut, and, peeping through a window, he saw what he described as a mighty army of rats marching past in regular order. Curious to ascertain what they were about, he ventured out from his retreat, and watched them descend the slip leading direct to the River Mersey, where they quenched their thirst, after which they returned in the same regular order, and soon dispersed among the warehouses in the neighbourhood. This anecdote was told in proof that rats would drink salt water when pressed by urgent thirst; but the relator forgot that river water is specifically lighter than salt water, and if the tide was low at the time, which, if I remember correctly, it was, the probability is that, after all, the rats quenched their thirst on fresh water, and also knew at what hour to procure it.—*Id.*

Black Specimen of the Common Squirrel. — On the 18th of last October, while shooting near Watford, I distinctly saw a black squirrel, but, not knowing they were not often seen in England, I did not shoot it. I have frequently seen, near here, squirrels with fur as dark as that of the sable on their tails, and their whole body very dark.—*M. R. Pryor; High Elms, Watford, December* 17, 1864.

Eggs of Ornithorhynchus.—About ten months ago a platypus (*Ornithorhynchus paradoxus*) was captured, and is in possession of Mr. Rumley, gold-receiver, Wood's-point. It has laid two eggs, which were white, soft and without shell. It is to be regretted that no opportunity was afforded of examining them more minutely, as they were soon afterwards thrown away. It has hitherto been a matter of dispute among naturalists as to whether this extraordinary animal, the connecting-link between birds and mammals, produced living young, or whether it laid eggs. It may now, however, be considered as a settled question.— *From the 'Illustrated Melbourne Post' of September* 24, 1864. [Valeat quantum!—*E. N.*]

Capture of a Wild Cat in Devon. — A specimen of the now rare Felis catus was taken in a vermin-trap at Moreton, on the 12th of December. It is a male, and measures about thirty inches in length; the fore legs are ten inches long; the tail, as

in all wild cats, is short and bushy, with a black tip, and striped, as is the rest of the body, with black. It was stuffed by Mr. Tucker, of Exeter, in whose shop I saw it. —*J. L. Langdon Fulford; Woodbury, near Exeter, December* 24, 1864.

Singing Mouse.—I have just seen a phenomenon in the Natural History line which is entirely new to me. A person of my acquaintance has lately captured a mouse which, instead of squeaking like its fellows, spends its time in singing. He tells me that for some time past he had, when all was quiet, heard a subdued singing noise in his house, which at first greatly puzzled him; but, some friend having informed him that mice sometimes sing, he kept a strict watch, and one night was rewarded by seeing a small mouse sitting outside its hole, and singing away to its heart's content: he set a trap and soon caught it, and has now had it in captivity about eleven days, and its voice is as good as ever. I first saw the mouse about two evenings ago; it was then curled up in its bed: on his disturbing it I could hear a low chirping, such as is frequently made by young birds in a nest, but presently the sound began to increase, until it could be heard all over the room; the mouse then came out and sang for about ten minutes, when a sudden fright drove it into its nest. The song is very pleasing, although rather monotonous; it somewhat resembles the lower notes of a nightingale, but of course it never reaches those rich deep tones for which that bird is noted. The mouse seemed fully to appreciate the fact that he was singing in public, as he kept standing on his hind legs and raising himself up as his lower notes grew louder, very much as you may have observed a canary or nightingale. — *Howard Fry; Ashford, Kent, December* 22, 1864.

[Singing mice have been great favourites with the exhibitors of curiosities for many years, and a particular account of murine individuals gifted in this way has on several occasions appeared in the 'Zoologist;' see particularly pp. 288, 2474, 2475 and 5591: the facts are not only beyond question, but have supplied the substantial evidence of a good income to several of the fortunate owners of these musical phenomena. On more than one occasion I have had the privilege of observing the performance very carefully, and have arrived at the conclusion that the performers were afflicted with some lung disease, perhaps tubercular phthisis, or that infirmity which in horses is called "whistling," an accomplishment, I am assured, not tending to enhance the value of a horse as it does that of a mouse.—*E. Newman.*]

Early Copulation of the Kestrel. — Is it not peculiar for the kestrel to copulate so early as the 6th of November? To-day two hawks appeared to me as if fighting in the air: they at last fell behind a wall: by creeping up I could look over at them without being seen, though not three feet from them. I have no hesitation in stating that they were copulating. The whole time the female uttered a low, pleasing cry.—*H. Blake-Knox; Dalkey, Co. Dublin, November* 6, 1864.

Habits of the Water Ouzel—As the history of this most interesting bird has hardly yet been fully worked out, the following notes, from daily observation, may perhaps be of interest to some of your readers. The water ouzel, or dipper (*Cinclus aquaticus*), is generally solitary in its habits, one, or at most a pair, haunting a part of the stream, and allowing no interlopers to poach on their preserves; in summer, however, the young brood accompany their parents for some time. Often the dipper may be observed to sit on one stone for several minutes at a time, constantly dipping its entire

body a kind of "courtesy," and frequently preening its thick, close plumage. Now it climbs over the rocks, picking insects out of the moss and lichens; now it wades breast deep into the water, seizing the insects and spiders as they float by; now it suddenly disappears under the surface, and does not emerge for many seconds. Although the water ouzel is by no means a timid bird, it will hardly dive if any one is near, and I have always been disappointed in trying to observe its motions under water. But the observations of Mr. McGillivray, Col. Montagu and others, have long ago disproved the fable of its walking at the bottom of the water, in defiance of the laws of gravity; yet Mr. Morris states that this is "an established fact"! In reality it uses its wings in diving, just as the true water-fowl do; as Von Tschudi (in his admirable 'Thier-leben der Alpenwelt') expresses it, the bird "paddles strongly with its wings." Yarrell says that the dipper swims with facility, but I believe that Col. Montagu is correct in stating that it cannot swim on the surface. The water ouzel seldom flies far when flushed, and, as Captain Hadfield observes (Zool. 9174), it "follows regularly each bend in the river, never cutting off an angle." When suddenly alarmed it sometimes dives, and is not seen to come again to the surface; but if the observer will search closely he will perhaps catch a glimpse of the cunning bird, standing, with only his head above water, under some overhanging stone. Doubtless the dipper often escapes in this manner from the attacks of hawks, to which it would otherwise be much exposed. In one instance in which this happened to me this winter, the bird sat so close that the gamekeeper got behind the stone and put both his hands in front of the opening; the bird, however, dived under his hands, and came up on the other side. I have also seen the water ouzel conceal itself under stones when wounded. The note of the water ouzel is a rapid "wheet-whit," and is generally uttered on the wing. The song, which is loud and sweet, but rather unconnected, is continued throughout the winter, and Bechstein states that it is heard by night as well as by day. One point in the anatomy of this wonderful bird seems to have escaped the notice of most authors, *viz.*, the small size of the eyes and ears. The exterior openings of those organs, in a specimen which I killed lately, were hardly larger than those of a hedge-sparrow. The gizzard is also very small; that of the specimen just mentioned contained fragments of the fresh-water shrimp (*Gammarus Pulex*), larvæ of some species of Ephemera, and a number of minute pebbles. Under the skin (which is thick and tough) lay a quantity of yellow fat: Tschudi states that its flesh is eaten in Switzerland, and is of very delicate flavour.—*Edward R. Alston; Stockbriggs, Lesmahagow, N.B.; November* 14, 1864.

Black Redstart in the County Dublin.—The black redstart (*Sylvia tithys*) appeared here on the 21st of November this year. The bird was solitary and a female. It is curious I should only notice this bird every second year.—*H. Blake-Knox; Bartragh, Dalkey, Co. Dublin, November* 26, 1864.

First Arrival of the Snow Bunting and Purple Sandpiper in the County Dublin in 1864.—The first snow buntings (*Emberiza nivalis*) appeared within my district on the 29th of October; three were upon the west pier of Kingstown Harbour: on the 8th of November the flock had increased to seven. The purple sandpiper (*Tringa maritima*) made its first appearance on the 7th of November: since then I have repeatedly seen it.—*Id.*

Great Spotted Woodpecker at Reading.—For the last two Sundays a male specimen of this rare bird has been seen ascending fruit trees in the gardens attached to Mordan and Oxford Villas, in Russell Street. How strange that so wary a bird should

have ventured so far into the heart of a large and busy town in search of food.—*Henry Moses; Russell Street, Reading.*

Migration of the Swallow and Martin. — Though both swallows and martins remained in the Undercliff fully a month later than in the neighbourhood of York, as recorded in the 'Zoologist' (Zool. 9328), still they have taken their departure this season rather before the usual period of migration, as they not unfrequently remain here, and in considerable numbers too, until the first or second week in November; for instance, in 1855 hundreds of swallows and a few martins were seen on the 11th, nor did they finally disappear until the 14th. Though mild (the thermometer averaging about 55°), the end of October was boisterous and stormy; however, numerous swallows and martins were seen on the 27th, and several of both species again noticed on the 28th, but none later in the month, the glass having fallen to 49° on the 31st. Last swallow seen on the 1st of November. (Swallows were first observed here on the 9th of April). It would appear from your correspondent's observations that in the northern counties swallows begin to migrate much earlier than with us, confirming my remark (Zool. 5751) as to their congregating on the southern coast before final departure, towards the end of October or beginning of November. The stragglers occasionally observed here late in November and early in December are, as I have already stated, young or late broods.—*Henry Hadfield; Ventnor, Isle of Wight, December* 3, 1864.

Arrival of Summer Birds in 1864.—Last year I noted (Zool. 8816) the scarcity of some of our summer visitants, and, as the subject is now again before the readers of the 'Zoologist,' I will, if I may be allowed, make a few more remarks on the same. The arrivals here this year were in general about the usual time, and not late, as many were last year. The wryneck, which I first heard on the 5th of April (though I had a single bird of this species sent me as early as the 19th of March; see Zool. 9044), has been unusually scarce again this summer, and I think bids fair soon to become a very rare bird in this part. The redbacked shrike is another bird which is fast decreasing in numbers. Of the redstart I have no note this year, not having seen one during either the spring or autumnal migration; but this bird is always somewhat irregular in its movements; some years they are plentiful for a week or ten days in the spring. Tree pipits, again, may one year be seen in small flocks for a week or two in the month of August, and the next year, perhaps, scarcely a bird of the sort is visible. Adverse winds may, I think, partly account for these irregularities, *i. e.*, they may wait for a favourable wind before crossing the Channel, and so collect near the south coast; and the redstart may perhaps regulate the length of its stay here in the spring by the weather, not caring to reach its breeding-quarters so soon in a cold and backward spring, but preferring to stay about in the lowlands between the hills and the coast; or, on the other hand, having been detained on the opposite side of the Channel by rough and cold weather, it makes the best of its way northward, not even stopping a day with us. Plenty and scarcity of food is, no doubt, often the cause of a partial migration; thus the moorhen and kingfisher appear in greater numbers than usual this autumn on a clear and constant stream near here: this I attribute to the dry summer that we have had, and the consequent drying up of many ditches which had afforded these birds food and shelter at other times. I have not been able to discern any decrease in the swifts in this district: after the young are out I have seen as many as forty or fifty flying round the spire of Bosham Church. May not the absence of convenient nesting-places have something to do with the scarcity of swifts at Beverley? have no old buildings been pulled down or repaired? Yet this point

can scarcely have been overlooked by Mr. Boulton. — *W. Jeffery, jun.; Ratham, Chichester, November* 10, 1864.

Ornithological Notes from Shetland. By HENRY L. SAXBY, M.D.

(Continued from page 9405).

Ring Ouzel. — On the 1st of October a ring ouzel was seen at the Burn of Watley, upon the very spot where I saw a bird of the same species last June; and on the 21st of October, after a very severe gale from the north-east, I shot a fine specimen in the garden at Halligarth. In colour it precisely resembled an adult female, the semilunar mark upon the breast being clouded with light dusky brown, and the bill having no yellow upon it, except at the base of the under mandible; but dissection proved it to be a male, and its immature age was indicated by the peculiar appearance at the angle of the mouth. The bird was extremely shy and restless, flitting from tree to tree, seldom remaining for many seconds upon the same branch, and always, as it flew, uttering a sound which was similar to the well-known "chat-chat" of the wheatear. The stomach contained a few mountain ash berries, and the extraordinary quantity of fat upon various parts of the body afforded ample proof of previous good living.

Sclavonian Grebe (Podiceps cornutus).—Although a winter seldom passes without one or more individuals of this species being observed in this neighbourhood, specimens are very difficult to obtain. One which was shot in a fresh-water loch, about a mile from the sea, was brought to me on the 2nd of October. It was a female, in a state of plumage similar to that described in Morris's 'Birds' as being peculiar to autumn. The stomach was completely filled with fibrous roots and a large quantity of feathers, some of which, when washed and dried, closely resembled those upon the throat and fore neck of the bird itself. The iris was of two colours, a narrow ring surrounding the pupil being white, the outer ring crimson, tinged with vermilion; from the angle of the mouth to the front of the eye there was a naked streak of the latter colour. This species, although occasionally observed in fresh water, seems to prefer some quiet inlet of the sea, where it may usually be seen diving in shallow water among rocks and floating weeds. Its rarity has prevented me from becoming well acquainted with its habits, but it is said to be very shy and watchful, and to be capable of remaining submerged for more than a minute

at a time. It usually dives when threatened with danger; therefore it was not a little to my surprise that when one was fired at last winter, by a lad who was lying concealed among the rocks, it merely swam away from the spot, not diving until it had proceeded for about sixty yards. I was also concealed at the time, and observed, by means of a telescope, that the bird did nothing more than start slightly and quicken its pace as the shot fell around it.

Redwing. — Small flocks of redwings appeared at intervals during the month of October, entirely stripping every mountain ash of its berries, and then betaking themselves to the meadows.

Mealy Redpole. — A small flock of mealy redpoles arrived early in October, and a few more about the end of the month. In fine weather they may be observed upon the cliffs and upon exposed hill-sides, but rain and high winds soon drive them to the shelter of enclosed grounds.

Jack Snipe usually appear in October, but in no great numbers. This season the first one was seen on the 7th, and on being disturbed it alighted upon the beach about a hundred yards distant, and immediately commenced searching among the drifted weed. This species does not breed here. It frequents the same grounds which are preferred by the common snipe, but lies closer, and will frequently alight very close to the spot from which it has been disturbed.

Longtailed Duck. — The first longtailed ducks were both seen and heard on the 8th of October (wind N.E.), but their number is increasing very slowly. In rough weather they nearly always leave the sheltered voes and fly seaward, for what reason it is difficult to imagine; at such times, instead of diving for food, they merely sit facing the gale, paddling with their feet in order to keep themselves from drifting to leeward, or, when such means are not sufficient, making up their lost way by short flights, keeping so close to the surface as to strike the water with their wings.

Ring Dove. — The ring dove is very rare here, only appearing after high winds from S.W. or S.E. I saw one on the 16th of October, and another on the 29th. The latter is a young bird, and is still in this neighbourhood: unlike the old ones, it does not seek solitude, and appears to be very desirous of associating with the tame pigeons, but this they will not permit, and the instant it appears among them they dash wildly to their home, manœuvring and dodging as if a hawk were in pursuit. Occasionally it alights upon the roof of the house, but the greater portion of its time is passed in the stubble fields.

Goldeneye: Escape of Birds by Diving. — Goldeneyes are now

tolerably abundant, both upon the coast and among the lochs. One which was shot in the latter situation, about ten days ago, had the stomach filled with sand, small stones, and the empty skins of some larvæ about half an inch in length. During the winter months a few of these birds are almost constantly to be seen upon the voe at Baltasound, sometimes in deep water, but, when undisturbed, diving within a few yards of the shore, where they feed largely upon the various Mollusca which abound among the rocks. When they are employed in this manner it is easy to approach within shot by running up as they dive, and waiting for their reappearance; and in this way young birds especially may be obtained, for they are far less wary than the old ones. Occasionally, after having dropped a goldeneye or a tufted duck, it has disappeared beneath the surface, and I have seen it no more; and the circumstance was a sore perplexity to me until about a fortnight ago, when the mystery was partly explained. A friend of mine fired his last charge at a goldeneye, which fell, slightly wounded, into a mill-dam, instantly dived, reappeared for a moment and dived again, before I was able to hasten up with a fresh supply of ammunition. My friend, having reloaded, remained upon one side of the pool; I waited at the one opposite, and, setting a dog to guard the mouths of two deep burns, we eagerly watched for the bird, but we watched in vain, for at the end of about half-an-hour not so much as a feather had been seen. Resolved not to lose so favourable an opportunity of ascertaining the fate of many a lost duck, we raised the sluice and proceeded to drain the pool, one of us constantly watching the water as it flowed through, while the other wandered round the banks, keeping a constant look-out upon every side. The bird could not have escaped, neither could it have died without floating up, and that it had not risen since its second dive we both felt perfectly convinced; therefore, in our eagerness to unravel the mystery, we did not grudge the loss of the next two hours, when, the pool having become shallow and greatly reduced in size, we sent in the dog. Soon afterwards I observed a slight bubbling near the sluice, and, guessing its cause, instantly ran down the stream towards the sea; but the duck must have passed me while I was climbing the wall which crossed my path, for we soon afterwards discovered it flopping about, in a shallow part of the stream, a long way further down. One wing was so much injured by the shot as to prevent flight, and, although we naturally felt sorry for the poor bird, it was a matter of no small satisfaction to have ascertained, nearly beyond doubt, that the goldeneye, like the grebes and some other birds, eludes its enemies by entirely

submerging every part except the bill, for in that manner alone could it have so long escaped our search. No doubt many a well-worn story of a wounded bird drowning itself, by holding on to the weeds at the bottom of the water, may be thus accounted for. I know many excellent observers who would as soon deny that a duck can swim as renounce their belief in this suicidal tendency, upon the part of the cormorants and the shags at least; "for," they say, "we have *seen* them grasping at the weeds with their bills;" so have I, but I have also seen them take hold of a finger or a rope, or anything within reach, but never deliberately riding at anchor in the manner described. It should also be borne in mind that most land birds will, when wounded, cling firmly, either with bill or feet, to the herbage upon which they often fall.

Blackcap. — Another very rare visitor, a blackcap (*Sylvia atricapilla*), appeared in the garden on the 22nd of October, when a strong east wind was blowing. It was a male in good plumage, and in the stomach I found a few currants and some large flies. I was at a loss to know how the currants had been procured so late in the year, but, after a careful search, discovered several of a similar kind hanging withered upon a half-hidden bush.

Redbreasted Merganser.—There are still very few mergansers to be seen, but after the first really cold weather flocks are sure to arrive upon all parts of the coast. Owing to their extreme watchfulness they are very seldom shot.

Snipe are already abundant in the low grounds, although there has been scarcely any frost upon the hills. I frequently find them among turnips, and only a few days ago saw as many as five rise almost simultaneously, and so close together that all were within easy shot from the spot upon which I stood.

Rock Pipit. — According to their usual custom, rock pipits are now visiting the garden, where they procure abundance of food among the fallen leaves. It is not at all unusual to see them sitting in trees. Sometimes they visit the house-windows, and perseveringly endeavour to catch the flies through the panes; I even observed one enter the house and take a half-torpid "blue-bottle" from the angle of a wall.

Greenfinch. — On the 28th of October a gale from N.E. brought a small flock of greenfinches, and other flocks have since arrived. Only one other instance of the occurrence of this species in these parts has been recorded.

The only other arrivals during the month of October occurred in the following order:—

October 3; wind S.W. Two bramblings (male and female); the first snow buntings; and the first widgeon, an immature male.

October 4; wind S.W. A willow wren.

October 13; wind N.E. The first tufted duck.

October 17; wind strong N.E. Eighteen glaucous gulls flew southwards: the first this season.

October 18; wing strong N.E. The first common buntings.

October 21; wind N. Seven fieldfares (first of the season); and the first blackbird, a male.

October 22; wind E. The first hooper flew southwards.

October 23; wind strong N.E. A very large flock of fieldfares. (Left on the 28th; wind N.E.)

October 30; wind light N.E. A chiffchaff, and a male chaffinch.

HENRY L. SAXBY.

Baltasound, Shetland,
October 31, 1864.

Ornithological Notes from Lanarkshire.

By EDWARD R. ALSTON, Esq.

Red Grouse.—Without venturing an opinion on the vexed question of the identity of the red and willow grouse (*Lagopus scoticus* and *L. Saliceti*), I have jotted down the following notes on the habits of our native species, as I believe that a fuller account of the "life and conversation" of the two birds may be of some use in deciding the question. Neither Yarrell nor Morris notice the habit of the cock grouse, of sitting on a hillock, or "know," and crowing at dawn, which practice is continued from September until the hen commences to sit, especially on clear frosty mornings: the cry is peculiar, and not easily described; that of the female is a strange nasal croak, which some poachers can imitate to perfection. As far as can be judged from written words, the notes of our species seem to differ considerably from those of the willow grouse, as described by Mr. Wheelwright in Dr. Bree's beautiful work on the 'Birds of Europe' (vol. iii. p. 215). It is very difficult to express the cries of birds in writing, but the crow of the red grouse might perhaps be expressed by "bek-bek-bek," which is very different from the "errackackackah" which Mr. W. ascribes to the Norwegian species; nor does the note of our hen grouse answer to his "hjan, hjan." This difference of the notes is, at least, worthy of further investigation. Often the cock may

be seen to rise several feet in the air, and then drop down again on the same spot. The coveys unite, often about September, in "packs," sometimes in great numbers; these, again, are broken up by the pairing of the birds, which took place this year about the end of November. This early pairing is remarkable, as the hen does not lay (in this neighbourhood at least) until the month of March. Here, and, as far as I can learn, throughout Scotland, grouse are never seen in anything deserving the name of underwood, unless they have been driven into it by shooters: will Mr. Norman pardon my inquiring whether this may not have been the case with the grouse which he flushed and shot in Yorkshire in low thickets of birch, willow and braken? (see Zool. 9054). When frightened they often fly to curious places; thus on the 12th of August this year a cock grouse settled in a garden at a considerable distance from any moor, and close to where some men were working. Neither does this species affect long and robust heather, it being well known to sportsmen that a covey will seldom remain long in such places, even when driven into it. The great variety in colour in this species is well known; much of this appears to depend upon age. Young birds have, in winter, a great deal of white on the lower breast and belly, and about the beak and eyes; they also have the greater and lesser under wing-coverts both white: while old males often have the belly nearly black at that season, with hardly any white spots; and many of them have the lesser under wing-coverts dark brown. Grouse increase decidedly in weight towards the end of the season; males then average (in this district) about twenty-four ounces, females about twenty ounces; however, they sometimes are much heavier; an old male killed in November weighed twenty-eight ounces; a female shot at the same time, twenty-four ounces.

Sparrowhawk. — In June a brood of young birds of this species were placed in a cage, and in two days the old hawks brought them *ten* birds, namely, two young peewits, two young thrushes, a skylark, a meadow pipit, two young chaffinches, a willow wren, and another newly-hatched squab. This shows how destructive these hawks are among the smaller birds: I have known a male sparrowhawk kill a full-grown partridge.

Fieldfare. — These birds have been very plentiful this winter (as noticed by the Rev. F. O. Morris in a recent letter to the 'Times'); the flocks also arrived here sooner than usual, appearing at the end of September: Yarrell says that the fieldfare is seldom seen until the beginning of November. At first they inhabited the woods, feeding

principally on the berries of the rowan, or mountain ash; later in the season they resort to the moors and upland pastures. After feeding on the fruit of the dog-rose the dung is of a bright scarlet colour; the skins of the rowans are rolled up into little balls by the action of the gizzard. In the stomach of one which I dissected no grit or pebbles were found, but plenty of seeds, which agrees with Mr. Boulton's observations on the Bohemian waxwing (Zool. 8882).

Whinchat.— Rather an uncommon bird in this neighbourhood. The gizzard of one which I examined in July was full of the limbs of those destructive insects commonly called "long-legs" (*Tipulæ*), of which the bird must have destroyed an immense quantity.

Robin. — The scarcity of robins, of which so many of your correspondents complained in 1863, is not observed here: this winter they are particularly plentiful, more so indeed than almost any other species, except the chaffinch. It is common enough for these birds to take refuge in houses in severe weather, but I do not think that it is usual for them to return to the same retreat for several seasons in succession: one has inhabited the ground-floor of this house for the last two winters, and has lately returned for the third time. He is perfectly tame, finds his way through the various passages with great ease, and evidently knows what glass is, for he is careful never to dash against the windows, as birds so often do.

Meadow Pipit.— I shot one in July, seated on the topmost branch of a young spruce fir about twelve feet high, and in the middle of a plantation: is this common? Here the meadow pipit is very plentiful on the moors: it is called the "moss-cheeper."

Brambling. — This beautiful finch has appeared in large flocks in Ayrshire this winter: hitherto it has not been noticed in this neighbourhood.

Creeper. — The creeper is rather a pugnacious bird; if one settles on a tree which is already occupied, a fight is sure to ensue, which continues until one is driven away: I have seen a cole tit fly before one of these apparently delicate little birds. In 1859 a pair of creepers built here in a shed over a saw-pit, within a yard of where the men were constantly working; and although the board which concealed the nest was twice removed by boys, still they persevered, and succeeded in hatching, although not in rearing, their young, which were destroyed by a cat. The nest was built of bits of wood, shavings and straw, thickly lined with feathers.

Swallow and Martin.— These birds often nest in strange places: this summer a pair of the latter species built under the wooden cover

of a large bell which is rung every day. Two years ago a curious circumstance happened at a farm-house near here: a swallow's nest fell down, and only one young bird survived the fall; it was placed by some good Samaritan in the nest of a gray wagtail, in a "dry-stone dyke" near the house, where the little foundling was reared along with the young wagtails, and was often visited by its human friends.

Common Sandpiper. — This is usually rather a shy bird, but in June a pair built in a rose-bed in our garden, near the river, and within two yards of a walk, along which people were daily passing. The nest was very slight, merely a hollow in the ground, thinly lined with grass.

EDWARD R. ALSTON.

Stockbriggs, Lesmahagow, Lanarkshire,
December 26, 1864.

Ornithological Notes from Beverley, Yorkshire.

By W. W. BOULTON, Esq.

Great Bustard. — On Friday, November 11th, 1864, I received a note from Mr. T. Jones, of Bridlington Quay, stating that he had just obtained a specimen of the great bustard, in the flesh, weighing thirteen pounds; that it was still warm whilst he was writing to me, and that I might have it if I would give the required price. He stated, in addition, that it had been picked up in Bridlington Bay, on the same day (November 11th), by a man named Welbourn, and that when found floating on the water, although dead, it was quite warm. I at once telegraphed to request him to forward it by the following train, in the flesh. I also wrote, most particularly begging of him to send it as it had been found. To my great disappointment the bird arrived, the following morning (November 12th), already skinned. This operation had been performed only a very short time previously, as it was uncured, and portions of flesh and fat still adhered to the skin; whilst the skin itself, the bill, legs, joints, &c., were all of them quite soft and supple. The tongue, windpipe and eyes were also sent, and by their condition and appearance proved that the bird had not been long dead. I again telegraphed for the body, vainly hoping that it might yet present many features of interest for dissection, &c., as for instance the stomach, sexual organs, &c. In due time the carcass, or what was left of it, arrived, in a condition that divulged

the secret of its having been withheld in the first instance, *viz.*, disemboweled, and trussed for cooking after the most orthodox fashion. The heart, liver and stomach were the only viscera remaining, and these had been detached from their positions and cleansed. The stomach had been emptied of its contents: even the sexual organs and kidneys had been cut away, so that the only indications of sex remaining were the comparative weight and the plumage. Judging by these alone, I have little doubt that my specimen is a female of the second or third year. Her weight—thirteen pounds—is considerably more than that of birds of the year, *viz.*, seven to eight pounds; and the peculiarly slaty gray of the head and neck, and the absence of the lateral plumes from the chin, would indicate the female sex and imperfect maturity, as the female bustard does not assume these elongated feathers on the chin until the third or fourth year (see Yarrell, ii. 451; Morris, iv. 6). The plumage of my bird is very fine, not a feather having been lost. It must have fallen exhausted into the water, or dropped from fear of some threatening hawk, of which the bustard entertains a peculiar dread. I am inclined to adopt the latter supposition, as the body is in excellent condition, and does not present the slightest evidence of exhaustion or starvation, weighing, when minus head, neck, skin and feathers, legs, wings and viscera, rather more than seven pounds. Unable to rise again, it had drowned, and must have been picked up very shortly after death, as it was still quite warm when found, and did not appear to have been many hours dead when I received it. I could find no trace of internal injury or disease on subsequent dissection. Measurements:—Total length from tip of bill to tip of tail, 3 feet 3 inches; height, as the bird stands with head and neck slightly bent, from crown of head to sole of foot, 2 feet $5\frac{1}{2}$ inches; from anterior bend of wing to end of longest primary, 1 foot $11\frac{1}{2}$ inches (nearly); across wings I most unfortunately missed, as Mr. Richardson had got the bird set up before I called to obtain the measurements. Dissection:—As I have before said, the body, or rather what was left of it, was in excellent condition. The heart and liver were perfectly healthy, and seemed to me large in proportion to the size of the bird; otherwise they do not demand special notice. The tongue, on the other hand, presented peculiarities which I think are deserving of comment. Like the tongues of other gallinaceous birds, it was rather a fibro-cartilaginous expansion—narrow from side to side and pointed at the tip, and covered with a thickened, hardened epithelium—than the more highly-developed type of the same organ, as we find it in the parrot

and the duck. But, as I have already stated, it differed strikingly in more than one particular from the tongue of any other gallinaceous bird I have hitherto examined; and thus, earnestly desiring information myself on these matters of deep and mutual interest, I would beg to submit to your readers, with humble deference to their superior experience and opportunities, the following remarks. At the same time I would add that the only magnifying power I have been able to avail myself of has been a good pocket-lens: this circumstance of course renders my deductions more purely conjectural than they otherwise might have been. On the tongues of most, if not all, birds may be seen rudimentary papillæ, or epithelial processes, — types of those more highly-developed papillæ which endow the higher animals with the sense of taste. It is generally supposed that birds, if not altogether destitute of this special sense, do not enjoy it in the same degree of perfection as animals. I cannot believe that birds are completely destitute of this sense; for who can observe a parrot smacking his bill, with every evidence of enjoyment, whilst munching some dainty morsel, without believing that he approves the *taste* as well as the odour of his meal? The sense of taste appears to be more or less highly developed and modified in the various species of this great family, and occurs to the greatest degree of perfection in those species whose food is soft and tasty, under which circumstances the discriminating perceptions which the sense of taste conveys to the brain are rendered necessary to a correct selection of the food. On the other hand, in the case of birds which feed on grain and hard and comparatively tasteless substances, we find the tongue so covered with hardened epithelium as to reduce by its very thickness the sense of taste to a *minimum;* whilst it serves as a protection to the more delicate organism beneath it, from the hard and often sharp substances swallowed by these birds, either as food or with their food. Even in these birds, however, we find many papillæ of taste between the base of the tongue and the glottis, which convey to my mind direct evidence of the existence of the special sense, although it may be to a limited extent. These papillæ, or epithelial processes, are arranged in greater or lesser numbers, and occur in a greater or lesser degree of development, like a fringe, along the outer margins and the base of the tongue, around the glottis, or aperture which admits atmospheric air into the windpipe and lungs, and beyond the posterior margin of the glottis. These papillæ, as I have called them, are in some instances very small and few in number, but they are present in all birds; and in this lowest form of development we can only

suppose that they serve principally as mechanical obstacles to the involuntary return of food that has once passed over them, or to the accidental entrance of food into the glottis during its passage over that orifice to the œsophagus, or perhaps as aids to the introduction of food into the mouth in the first instance, by means of their hook-like points. But in the case of the bustard I find them in large number, largely developed, and mixed up with undoubted papillæ of taste; so that I can hardly avoid the inference that this bird is endowed with the sense of taste to a higher degree than other members of its order. The tongue of the bustard presents on either side, arranged along its outer margins, a series of twelve pointed and hardened papillæ. The tenth and particularly the eleventh of these papillæ are much larger than the rest. They are directed outwards and backwards, and resemble very strongly the pointed papillæ to be seen upon the dorsal surface of the tongues of some animals, both carnivorous and herbivorous, as the lion, ox, &c. At its base is a double row of similar but smaller papillæ, about fifteen in all, and arranged in the form of the letter V, as it is written, the point of the V being directed forwards. Between these papillæ and the glottis is a space studded over with the true papillæ of taste. Fringing the lips of the glottis is another row of the pointed and hardened papillæ on either side, which terminate in two large papillæ or processes. Posteriorly to these is an arrangement of similar horny epithelial points or papillæ, fringing round and studding over two nearly circular fibrous or cartilaginous surfaces. These papillæ are more or less flattened from above downwards, to admit of the food more readily gliding over their superior surfaces. The object of these several papillæ or epithelial processes would appear to be chiefly threefold, *viz.*, 1st, mechanically, to aid the introduction of food into the mouth, and to prevent its involuntary return; 2ndly, mechanically, to prevent food finding admission through the glottis into the windpipe during its passage over it; 3rdly, it may be, from their numbers, position, form and variety, to endow the bustard with a more highly developed sense of taste than other members of its family. Stomach muscular, but less so than in any gallinaceous bird I have dissected. Its internal surface is covered with a thickened and corrugated mucous membrane. These corrugations or ridges are arranged in a circular direction around a central, circular, tendonous expansion, from which the muscular walls of the organ contract and exert their squeezing powers during the process of digestion. More correctly, perhaps, should I describe the direction of these ridges were I to say

that they are arranged on either side of the organ in a series of concentric half-circles, which, meeting a second series of similar half-circles, complete the ring around the central tendon. This arrangement is the same on both sides or halves of the organ, which are symmetrical. The ridges themselves are hardened, but not to the same extent as in other members of the order (Gallinæ), and are evidently designed for a similar purpose, *viz.*, that of crushing and mixing together the contents of the stomach. The whole structure, so peculiarly modified in its parts, would suggest a varied dietary of vegetable and animal substances, but indicating a preference for these in their softest and most readily assimilable forms. As I have already stated, the organ had been carefully emptied of its contents and well washed previously to my receiving it. A note from Mr. Jones has, however, just arrived, in which he tells me that "the stomach was filled to distention with very fine green grass, but not a particle of grit." This was altogether a voluntary statement on the part of Mr. Jones, as I had not asked him for the information. He also states that the sex of the bird was female, and that he believes her to have been fully mature. On this point I beg still to differ with him, for the reasons already assigned. I have been to-day to Scorbro, the seat of Mr. James Hall, and took that opportunity of inspecting two specimens of the great bustard in his collection, which had been captured in this East Riding: one, a female, was evidently a bird of the year; it was taken alive in the neighbourhood of Scorbro, about forty years ago, and Mr. Hall had it tethered upon his lawn: the other, an old male, Mr. Hall forgets the history of; he thinks that it was taken not far from Doncaster, but certainly in Yorkshire. In former times, when our Yorkshire wolds were a wild undulating sheep-walk, this noble bird was not uncommon, and reared its young on those plains which the discoveries of modern chemistry and agriculture have transformed into a perfect garden, capable of the very highest results of cultivation.

Shoveller.—On November 12th, 1864, a female of this peculiar duck was shot on the River Hull, near the hamlet of Wilfholme, about nine miles above Beverley, by Thomas Verity, of this town. The shoveller has become a rare bird in this neighbourhood. I have only seen two specimens in the flesh, both of which are in my own collection; one is a mature male, the other a female of the year.

Hoopoe.—At page 9361 I recorded the capture of two hoopoes near Flamborough. In that communication I stated that I had been informed of the second capture, on good authority. I have since

ascertained that, although a second specimen had been shot near Flamborough, the capture was not *since* the one shot on September 21st, 1864, but no less than three years ago. I have purchased this bird through Mr. M. Bailey, of Flamborough, and have received with it the following history. Mr. Bailey says: — "It was shot in the month of June, 1861, by Aaron Chew, gamekeeper, of Flamborough, in the Danes-Dyke, near that place."

Brambling Finch and Fieldfare.—I have never known such flocks of bramblings occur near Beverley as have visited us this autumn. In former years I have met with a few of these birds every autumn, but this year (1864) they have appeared in flocks like fieldfares. Fieldfares, too, have visited us in unusual numbers, and this fact perhaps appears more marked, as last year we had fewer of the winter migratory birds than I ever recollect.

W. W. Boulton.

Beverley, December 8, 1864.

Ornithological Notes from Ulceby, Lincolnshire.

By John Cordeaux, Esq.

Redwing, Plover, &c. — I have frequently heard remarks lately on the unusually large number of fieldfares and redwings which have arrived on our eastern shores this autumn; and these remarks have been made by persons who are not in the habit of making ornithological observations. With regard to this neighbourhood, I never remember fieldfares and redwings more plentiful, particularly the redwing, many of our tall old hedgerows, which this autumn looked quite scarlet with haws, being literally crowded with these birds; while in the low meadow-grounds large flocks of fieldfares may generally be seen feeding. In the stubble fields near the Humber are flocks of snow buntings, and in much greater numbers than have appeared since the severe winter of 1860—61. Up to the middle of December immense flights of green plovers have frequented the low grounds. These birds did not arrive in any quantity till fully a month after the usual time of arrival. This circumstance was probably owing to the unusually dry season: as soon as the ground became thoroughly saturated with the heavy rains early in November, the plovers arrived. This week (December 17th), with the exception of a few scattered flocks, the peewits have left us, and their place is taken

by golden plovers. This day I saw large flocks of these birds, feeding on the wheat lands in the marsh, one flock alone containing several hundred birds. I have invariably observed that some days before the breaking out of severe weather immense flights of golden plovers, coming from the North, arrive in the marshes bordering the Humber, and on the first severe night's frost they leave us again. The peewits are even more sensitive to the coming change, for the greater portion will depart before the arrival of their golden brethren. Here it is considered a sure sign of severe winter when large flocks of fieldfares, redwings and plovers arrive in the marshes. This rule, however, does not hold good in all cases, for I have known equally large flights of peewits in the low grounds during the whole of a mild and open season. Mr. Morris, in a letter lately addressed to the 'Times,' remarks on the almost total absence, this year, of the wild geese which are seen during the autumn in Yorkshire. The same has been the case in this county: as yet I have only seen one small flock of geese. In a second letter to the 'Times' Mr. Morris quotes extracts from the letters of correspondents in various parts of the country, from which it appears that wild geese have been observed in large numbers on the western side of the country. It would be difficult to determine to what cause we are to attribute this remarkable decrease in the wild geese on the eastern shores of England, and the corresponding large increase in the redwings, plovers, &c. If the arrival of some species, —as the little snow bunting and golden plover,—in such unusual numbers, is an indication of the immediate approach of severe weather, this cause will not account for the presence of such large flocks of the northern Merulidæ in the neighbourhood weeks before the commencement of severe weather, and, up to a few days since, a remarkably mild and open season. As yet we know little of the cause which induces some species of birds to frequent a favourite locality, at certain seasons, for some years, and then, without any apparent cause, to disappear. Are the movements of these large flocks of birds caused by any increase or decrease in their favourite food, or from an unerring instinct which warns them a severe season is approaching? This do we know, however, that

> "There is a Power whose care
> Teaches their way along that pathless coast,—
> The desert and illimitable air,—
> Lone wandering, but not lost."

I am inclined to think that these apparently eccentric movements

almost entirely depend upon the supply of food to be obtained, and that the large flocks of fieldfares and redwings have been attracted to the neighbourhood by the plentiful supply of haws which redden all the hedge-rows, whilst the almost total absence of wild geese may perhaps be occasioned by the dry summer and autumn, seasons felt more severely on the eastern side of the county, and the geese have thus been driven to seek some favourite food in the moister climate and greener and more plentiful vegetation of the western counties. Although we have had no wild geese, two small flocks of wild swans have been seen in the Humber, one flock containing six birds, all of which were shot; the other, containing seven birds, is still at large.

JOHN CORDEAUX.

Ulceby, Lincolnshire, December 17, 1864.

Ornithological Notes from West Sussex.

By W. JEFFERY, jun., Esq.

Great Crested Grebe.—On the 12th of November, 1864, I had a great crested grebe from Sidlesham, which had been killed in Pagham Harbour. This bird proved on dissection to be a male, and, having little or no crest, I suppose is a bird of the year, as, according to Yarrell, they do not lose the crest after having once attained it. In the stomach I found, beside some small fish, a hard cram of feathers, fish-bones, &c., nearly filling the stomach. Yarrell suggests that the grebes "reproduce at will" the indigestible portions of food swallowed. Another specimen was killed near Selsey, about the 27th of December, and is now in my collection. It is a female, and has a tolerably perfect crest. The stomach contained, as usual, a quantity of feathers, but not in so compact a mass as I have previously observed in this species; there were also six or seven small fishes and a shrimp, surrounding this mass, but not mixed up with it.

Great Northern Diver.—An adult female of this species was brought me on the 6th of December, having been killed that day in the Bosham arm of Chichester Harbour. This specimen weighed seven pounds, and measured from the base of the bill to the tip of the tail two feet four inches; bill along the ridge three inches. In the first stomach were two flat fish, each about four inches long, and in the second stomach a quantity of fishes' bones and a large shrimp. Another bird of the same species was seen in company with this one, and was afterwards shot. I examined it the next day, and found it to be about

two inches longer than my bird, and in the immature or sombre plumage, in which state it is not unfrequently met with on this coast during the winter months, but specimens in the adult plumage are rare.

Stock Dove.—On the 14th of December I saw two stock doves in Chichester Market, which had been killed on the coast. This bird is a winter visitant in Sussex, though possibly a few remain to breed. Two were shot at a pond on the Downs, about the 30th of May last.

Bartailed Godwit.—Eight of these birds were exhibited for sale at a shop in Chichester on the 14th of December. A few bartailed godwits appear to remain through the winter with us, and I have remarked that, generally, some are killed about the first severe frost that we get.

Redbreasted Merganser.—I have seen several in the plumage of the female and young, but not a single adult male.

Fieldfare and Redwing.— Fieldfares and redwings have both appeared in increased numbers during the late frost; the former seem to keep much in the vicinity of the Downs, while the latter frequent meadows and lowlands, feeding on grubs, &c. On the 27th of December I observed, by the aid of a pocket telescope, as many as six or seven fieldfares feeding on the berries of one small juniper bush; at the same time a missel thrush and a blackbird were busily engaged devouring holly-berries.

W. Jeffery, jun.

Ratham, Chichester, January 6, 1865.

Ornithological Notes from the Scilly Islands. (Communicated by Edward Hearle Rodd, Esq.)

Tresco Abbey, Thursday, December 22, 1864.—The late cold weather on the mainland has driven a few birds to the islands. The first intimation of a migratorial movement was the killing of eight woodcocks on the eastern islands on the 15th of December, after an easterly wind, followed by a few more killed on the Abbey Hill a day or so after (a very small and partial flight). A considerable number of shorteared owls arrived at the same time, and one or two longeared owls. On the 19th there were a few gray plovers on the beaches, and a decided arrival of small divers: saw one or two dabchicks and

others which I could not identify. Saw chaffinches, linnets, greenfinches, and a blue tit in the garden—all fresh arrivals. On the 20th, after a great fall of rain, wind S. to N.W., and getting colder, we found two couples of full snipes and two couples and a half of jack snipes by the side of a pool of rain-water, where a lot of school-boys were playing and sailing their boats: this was part of a great migration. The same evening I found about thirty full snipes by the Abbey Pool. Snipes were very noisy at night. Yesterday, the 21st, we went to St. Mary's; found an immense flight of jack snipes and a good many full snipes; the latter very wild: killed sixteen full snipes and twenty-five jack snipes, making a total of twenty couples and a half, in a very short time, we having started for St. Mary's late. I had four jack snipes and one full snipe on the ground at once, and killed six jack snipes without moving from one place. Saw some shorteared owls and fieldfares. To-day, the 22nd, we went to St. Mary's again; wind S.E. to N.E. I did not expect to get much; we found a good many full snipes, desperately wild, and the remains of yesterday's flight of jack snipes; killed six full snipes and eight jacks. A quantity of lapwings, plovers and a few golden plovers flying about in a restless way, as if lately arrived; the high ground at St. Mary's alive with thrushes, redwings and fieldfares, with the usual large number of blackbirds and larks, and a few snipes in small wisps on the highest downs, as if just come. There are unusually large numbers of widgeons and teals on the pools, and a few shovellers. Starlings remarkably scarce; I have observed a decrease in their numbers for several years past. I can think of no more ornithological news to tell you, but if this weather continues you will probably hear of some fun here. The wind is now N.E., a gale; thermometer 42°.

Christmas Day.—I resume my journal of shooting experiences this evening. Yesterday, the cold weather continuing, we started for St. Mary's; wind east, and a slight film of ice on some of the pools. We found a few snipes, and some arrived while we were shooting; they were all, even the jacks, wild. The bag was ten couples of snipes, three teals, one water rail, one golden plover, one rabbit and a bittern. I was looking with my setter "Don" for a wounded snipe, when he drew on, and stood in a desperately thick field of rushes; expecting to see the snipe before him, I followed a narrow path, and saw the bittern crouching on the ground between myself and the dog: he heard or saw me, and I observed the quick motion of his snake-like head as he turned it towards me, and proceeded to get off the ground accordingly; this he made rather a bad hand of, and I could

only observe the attempt at sticking his legs out behind, in which he rather failed, and the peculiar lapwing or heron curve which his wings took as he flew: I did not see whether he carried his head back on his shoulders or straight out, for having only No. 10 shot in the gun I was obliged to knock him down before he had time to execute any very startling manœuvres: he seems to be a good specimen: the vivid colouring of the head and legs in Gould's plate is not overdone. The living bird was quite different to stuffed specimens: I particularly remarked the beautiful *blue* feathers on the head (these must be looked at by sunlight) and the colouring about the bill and legs. I shall write to Vingoe to have him set up, I think in a standing position, with the feathers on the neck rather rampant than couchant. To-day, after church, I made a tour of the ponds with the biggest telescope I could lay hands on. There were about twenty snipes, a hunded and fifty widgeons, fifty to seventy wild ducks, fifteen teals, eight shieldrakes, a large flock of coots, moorhens, water rails, a heron, lapwings, ringed plovers, herring gulls, one gull unknown, and a perfect host of starlings, redwings, thrushes, blackbirds and a stray fieldfare or two, all within range of the glass at once. The strange gull I could not identify: rather larger than a kittiwake, very pointed tern-like blue wings with a white border, and very rapid flight: it might have been a skua, but I do not know.* The thermometer has scarcely been below 30°, but there was just the slightest white frost this morning, and it felt very cold in the afternoon, though it was 39° in the garden shaded. You will hear from me again soon if the frost continues.

The Land's End snipes do not appear to have come here yet, but we shall see what St. Mary's will show to-morrow. A small flight of cocks have arrived, mostly heavy light-coloured birds; we have only killed twenty, and that is pretty nearly all that came. This cold weather must bring game soon. I saw seven or eight shorteared owls yesterday. A singular dearth of little birds in the gardens, nothing to be seen but sparrows. You will not hear again from me till Friday, when there may be something to talk about. We had a decided snow-storm this evening. Thermometer 37°.

Tresco Abbey, New Year's Day.—"Non homini cuivis contingit," to see snipes feeding with the poultry in front of the drawing-room window; that happened, however, here yesterday, and it was a pretty sight to see an old turkey cock pursue a snipe by the Abbey Pool. What marvellous facilities are here for an admirer of Nature! I can

* Blackheaded gull.—*E. H. R.*

sit and see any amount of wild fowl from the windows, and watch their habits with a telescope. No rare ducks have arrived yet, but this renewal of cold weather ought to bring some. Besides the large flocks of wild ducks and widgeons which have been accumulating on the pool there was nothing to-day but six pochards and a female goldeneye. A fresh flight of snipes seems to have come with the gale yesterday and to-day. This wind has brought some goldfinches and linnets, and I saw a pair of goldcrests in the garden to-day, but the little birds generally keep close till a gale has subsided, when we see its results. To-morrow we hope for a heavy day at St. Mary's.

January 5, 1865.—Your account in the 'Zoologist' pleased me much, and was all new to me: I will return it on Monday, not having quite done with it yet. You may tell your friends who inquire for me that I am coming home soon, but really I cannot say when. St. Mary's yesterday yielded forty-five snipes, one woodcock and one teal to our united efforts. We struggled hard to get fifty, but it was no go. This was something like a day's sport; it will be difficult to beat it. It required pretty good shooting, as the birds were wild; there are enough left, however, for another good day, if we have luck. I prophesied a heavy bag from the numbers by the pool at Tresco. Besides the redwings and starlings in almost increased numbers, we have now got plenty of linnets, chaffinches and a few fieldfares. No fresh larks, which I rather marvel at. There was a single missel thrush on St. Agnes, and a large flock of goldfinches on St. Mary's. We saw and heard a chiffchaff quite merry and well in the garden yesterday, and a goldcrest or two. A few blackstarts, mostly young birds (an old male is a rarity), and I think there are rather more wagtails than usual. My friend shot a female sparrowhawk yesterday; a pair have been cruising about after the starlings for some evenings past. No fresh ducks or shore birds.

Glossy Ibis in Dublin Bay. — On the 15th I met with the glossy ibis (*Ibis falcanellus*) on the Muglin Rock, in this Bay. I did not procure it, on account of my gun missing fire. I had been informed some days previously that a bird of all colours, and the shape of a ("crane" *anglice* heron), was to be seen about Dalkey Island; this most probably was the same bird, the sun shining on it giving it the appearance of "all colours."—*H. Blake-Knox; Dalkey, Co. Dublin, November* 20, 1864.

Anecdote of a Pair of Storks. — "In the spring of 1862 a peasant of Eimsbüthel, near Hamburgh, observing that the thatched roof of his house was suffering greatly under the considerable weight of a stork's nest which had for many years occupied the

same place, felt himself under the, to him, very unpleasant necessity of destroying the much-honoured nest, which, when removed, in order to repair the damage done to the house, proved to be more than sufficient to fill an ordinary-sized waggon. The repairs being fully executed, the peasant then replaced, to the best of his ability, the destroyed nest; but when the occupants arrived it did not please them, and although the female, after much apparent concern, as well as improvement on the part of herself and mate, laid her eggs, she could not feel at ease, and the result was that about April 15th she threw them out. The writer of these lines occupied a room which commanded a view of the above-mentioned house, and took great interest in the extraordinary birds, and, when she saw the eggs roll down the thatch, proceeded at once to the spot, where she found one of the eggs still unbroken." The above curious account was handed to me by the writer, who also presented me with the unbroken egg.—*Communicated by J. H. Gurney, M.P.*

Little Bittern near Weston-super-Mare.—A little bittern was flushed and killed out of a withy-bed at Bleadon, a small village near Weston-super-Mare, one day about the middle of last October. Its plumage agreed with the description given in Morris's 'British Birds' of a bird of the year.—*Murray A. Mathews; Weston-super-Mare.*

Egg of the Moa. — A moa's egg is now being exhibited at Messrs. Bethune and Hunter's offices. It is about 10 inches long and 5 inches in diameter, of a dirty white colour. It was found at the Kaikoros, in the middle island, under singular circumstances. A labourer in Mr. Fyffe's employ, who was digging the foundation for a house, came upon the egg, and, unfortunately, with his pick broke some portions of the shell. It was found in the hands of a skeleton of a Maori, who was buried in a sitting posture, with the egg resting in his hands and held opposite to his head. The egg has been placed in a box of rimu, and protected with a sheet of glass on the top. In a drawer beneath, securely covered with glass, are the fragments of the shell, which have been carefully preserved. The injury, as the egg is placed in the box, is not perceptible, and it appears to be perfect.—*Nelson Examiner.*

Egg of the Moa. — Having heard from my brother, Archdeacon Hadfield, of the discovery of the moa's egg, before reading the letter in the 'Times' of the 14th inst., I intended communicating the fact, but, having been anticipated, it now only remains for me to make a few remarks on what has been published, after comparing it with my brother's statement, for, according to that, the breadth of the recently-discovered egg is at least a third greater than has been represented. The Archdeacon says:—"One side was broken by the man's pickaxe, but, that part being hidden by the glass case, the egg looks perfect, and is a wonderful object. I measured it as nearly as I could: it is quite 10 inches long, and $6\frac{3}{4}$ inches in width." The Melbourne correspondent of the 'Times,' quoting from the 'Nelson Examiner,' says that the egg "is about 10 inches in length, and 5 inches in diameter;" but this appears to be a mistake, or the egg of the moa is widely different in shape from that of the Æpyornis and the ostrich. An egg of the latter, procured at the Cape of Good Hope in 1837, and of which a description has already appeared (Zool. 5683), is $6\frac{6}{10}$ inches in length, $5\frac{3}{10}$ inches in diameter, and 19 inches in circumference lengthwise, though erroneously said to be $16\frac{1}{2}$ inches in circumference lengthwise (therefore of greater size than the largest ostrich's egg in Mr. Rowley's collection; see Zool. 9191). The major axis of the largest egg of the Æpyornis is "$12\frac{1}{4}$ inches, minor axis, $9\frac{3}{8}$ inches, great circumference $34\frac{3}{16}$ inches." Though the circumference of the moa's egg is not given, owing probably to its being enclosed in a case, and lying on its fractured side, still we may

safely reckon that it is little short of 30 inches lengthwise, by about 21 inches in circumference breadthwise, and is probably little smaller than the egg of the Æpyornis, considering that the one referred to is the largest of the three extant. Though the correspondent of the 'Times' revives the old story of the discovery of the moa by the "wandering miners," I will not discuss that subject; but I think the writer wrong in supposing that the finding of this egg tends to prove or bear out the statements respecting the recent existence of the moa: we have yet to learn that it is not a fossilized egg that has been found; for we are told that the shell of the egg of the Dinornis, unlike that of the Æpyornis, is comparatively slight, therefore likely to be shattered by the heavy blow of a pickaxe; whereas this egg remains perfectly sound, except on the side accidently chipped, which goes far to prove its opaqueness. This precious and unique object should be secured, if possible, for the British Museum. Though I find, on referring to a work on New Zealand, published thirty years ago, that the Maories bury their dead in a sitting posture ("the legs of the dead body being tied up in such a position as to cause the knees nearly to touch the chin"), it says nothing of their having anything placed in the hands; possibly it was an ancient custom, though long since fallen into disuse. Probably the egg was intended as a provision for the journey to the realms above, or, as the Maories say, "possibly to the regions below," or for an offering to propitiate Wiro, the evil spirit, as, during life, they use incantations to propitiate the spirit Atua (the lizard). Probably the skeleton was that of a chief, for it is unlikely that that of an inferior should have been thus highly honoured.—*Henry Hadfield; Ventnor, Isle of Wight, December* 16, 1864.

Great Gray Shrike in Suffolk.—A fine mature male example of the great gray shrike (*Lanius excubitor*) was shot on the 8th of November last, in Outton Wood, near Beccles. It was in good condition, being exceeeingly fat. On its dissection the remains of an individual of Parus cæruleus were taken from its stomach.—*T. E. Gunn; Norwich.*

The Stonechat and Whinchat Winter Residents in Norfolk.—Mr. Yarrell, in his admirable work on British Birds, observes the stonechat (*Sylvia rubicola*) to be a constant winter resident in this country. I have not unfrequently watched for this lively and interesting species myself during that season, but have hitherto failed to detect its appearance in this county, although I have, in a few instances, heard of its occurring here. This season, however, I have been fortunate enough to secure two nice adult specimens, male and female, for myself. A friend who was out shooting two or three days since on Ormesby Broad, near Yarmouth, shot the birds in question, and very kindly presented them to me. I have since preserved them, and have them still in my possession. In dissecting them I found their stomachs quite distended with beetle-grubs; in that of the female I counted as many as ten good sized ones; I also took a few wing-cases of minute Coleoptera from the stomach of the male. They had apparently fared well in their winter quarters, as both individuals were exceedingly fat. The occurrence of the whinchat (*Sylvia rubetra*) in the winter season is recorded by Mr. Yarrell to be of very rare occurrence; he mentions only two instances of its being observed during that season; therefore I think it may interest some of the readers of the 'Zoologist' to hear that I have observed this species on two separate occasions in Norfolk. Once, during the month of January last, I saw an individual, a male, seated on an outer sprig of an hawthorn hedge that divided two fields, which were partly covered with patches of furze: this was in the parish of Hethersett, distant about five miles south-west of this city. On the second occasion I was out boating on the

St. Martin's River, Norwich, one morning during the latter part of November last. I had moored the boat ashore, and stood behind a tree watching for a shot, when a noise somewhat peculiar to me at that time of the year attracted my attention, and, turning my head round, I observed an individual of Sylvia rubetra seated within a few yards of me on a stunted bush by the river side. I stood and watched it several minutes, but as soon as it detected my presence it very prudently took to flight, and was quickly followed by a second individual, which had until then remained unobserved, but a short distance from its companion, hidden by the bushes: this latter specimen I distinctly noticed as being a male bird. They did not continue their flight far, but alighted on a solitary bush, about a hundred yards higher up the river's banks from where I first noticed them. I followed them about for some time, but was unable to procure either of them, as they had, after their first surprise, become by far too wary and suspicious to allow me to approach within gunshot of them. I have very frequently watched this species, during the summer months, on that wide and extensive tract of land, the renowned Mousehold Heath, situated just on the outskirts of this city; being covered with brakes and furze, it affords a favourable breeding locality for them; they are therefore to be met with pretty abundantly there during the summer. Thus, well knowing their habits, I am quite certain I am correct in my observations, and being pretty close to the individuals I had good opportunities of distinguishing them from Sylvia rubicola. A friend who was with me at the time, knowing the birds quite well, concurred with me as regards the species. From these circumstances it seems very probable that a few of the whinchats, as well as the stonechat, do remain during the winter months with us, although it has probably hitherto remained unobserved, or may possibly have been mistaken for the last-named species. —*T. E. Gunn; December* 30, 1864.

Richard's Pipit at Braunton Burrows.—I had the good fortune to shoot a fine example of Anthus Ricardi on Braunton Burrows on the 30th of December. I was out with one of my brothers for a day's rabbit-shooting, and when walking across one of the flats which occur between the ridges of sand-hills I observed a bird running with great activity among some dead plants of fleabane (*Inula dysenterica*), and as it seemed to stand much higher on its legs than the common meadow pipit (*A. pratensis*), and altogether to appear considerably larger, I walked towards it to obtain a nearer view, and when I had approached to within about fifty yards it rose and flew for a short distance, uttering a loud sharp note quite unknown to me. I at once perceived it was a stranger, and so drew the large shot I had in my gun, and substituted some smaller, with which I fired at it when it was about fifty yards off, as I wished to kill it clean; however, I only broke one of its legs, and it flew away for a long distance before again alighting, with a dipping flight similar to that of a wagtail. I of course followed it, but it was wild, and kept rising just out of shot, and flying about eighty yards at a time, its wounded leg, no doubt, making it feel very uncomfortable, as I noticed every time it pitched it fluttered a good deal before becoming quiet. I was almost afraid that I should lose it altogether, but at last it settled the other side of a sand-hill, and I was thus able to approach near enough to fire a shot, which this time was more successful, shooting it apparently through the lungs, as the blood flowed freely from its mouth. Yarrell gives $6\frac{3}{4}$ inches as the extreme length of the male bird; mine measures $7\frac{3}{4}$ inches, and is a female. I have compared it with a specimen in the collection of the Rev. W. S. Hore, but his is more strongly marked, so probably the one in my possession is a bird of the year.—*G. F. Mathews; Raleigh House, near Barnstaple.*

Correction of an Error.—In my notice of the creamcoloured courser (Zool. 9418) there is a mistake in the date, which should stand October 1862, instead of 1864.—*T. H. Allis; York, January* 3, 1864.

Little Bittern near Weston-super-Mare.—I have just seen in the possession of Mr. Stone, birdstuffer, of this town, a specimen of the little bittern, which was shot at Bleadon, a village four miles distant, a few days since. Its plumage corresponds with the description given in Morris's 'British Birds' of a young bird of the year.—*Murray A. Mathews; Weston-super-Mare, October* 17, 1864.

Adders in Lauderdale.—"These venomous reptiles, which are to be found in most of the moors in this district, have been unusually numerous during the past season, and shepherds and farm-servants have frequently come upon them basking in the sun on some knowe near a dyke or a juniper or heather bush. As an instance of their plentifulness, it may be stated that on one farm no fewer than seven were killed in the course of the summer, some of which were of a large size, measuring fully three feet in length. Although they have been so common, we have not heard of any serious effects resulting from their bites." The foregoing paragraph, from 'The Scotsman' of the 29th of October, is one of many that have of late years appeared in the public prints, indicative, it is presumed, of an increase of vipers (*Pelias Berus*, Merr.), in Scotland generally, and particularly in its broad sheep-walks and its subalpine shooting-grounds. If this increase be admitted, as I suspect it must be, then arises the question, to what cause or causes is it owing? Is "the vandalism of trappers" to be held as an element in the response? The fell and foul destruction that has befallen our birds of prey has, in the struggle of life, cleared the way for unwonted multitudes of the blackbird, the missel thrush, and many other lesser birds that are the accustomed food of the peregrine, the sparrowhawk and the merlin; and it is probable that the diminished—the almost extirpated—ranks of the Accipitres in Scotland will be found to account, in no small degree, for the present superabundance of the only poisonous British reptile. It were indeed far from sound philosophy to reply to this question in the affirmative from one or two facts. But perhaps other instances may now be given, through the pages of the 'Zoologist,' in addition to the following well-authenticated one, all tending to prove that the viper was used as a dainty bit in the fare provided for their callow young:—Upwards of some thirty years ago, when falcons and buzzards were more numerous, and when serpents were less heard of in Scotland than they now are, a gentleman living on the banks of the Spey had watched the nest of one of our buzzards or larger falcons, in order at the due time to secure the young birds. At length, when the day arrived, a windy one, on which the nest was to be harried, he ascended the tree, which was tall and flexible. The gale and the consequent "swaying of the tree from side to side precluded ocular inspection of the interior of the nest. It required a stretch of the hand to secure its contents. I never dreamed," he adds, "of such an addition to the family circle" as a snake, which was about a foot long, and about the thickness of an ordinary man's finger. "Its venomous character, if any, was destroyed, as the parent birds had decapitated the reptile before depositing it in the nest. This must have happened recently, for the snake writhed and twisted, headless though it was, round my hand, thus not only establishing vitality but affording consistent evidence of the old birds capturing the snake as food for their young." If birds of

prey have not been found to carry off Ophidian reptiles, what is the origin of the vignette at the foot of page 59, second edition, of Bell's valuable work on the animals of this class that are found in Britain?—*G. Gordon; Birnie, Elgin, November* 7, 1864.

Proceedings of Societies.

Entomological Society.

January 2, 1865.—F. P. Pascoe, Esq., President, in the Chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—Hewitson (W. C.), 'Exotic Butterflies,' Part 53; presented by W. W. Saunders, Esq. Bates (H. W.), 'The Naturalist on the River Amazons,' 2 vols.; by J. W. Dunning. 'The Entomologist's Annual for 1865'; by H. T. Stainton, Esq. 'The Zoologist' and 'The Entomologist' for December; by the Editor. 'The Entomologist's Monthly Magazine' for December; by the Editors. 'The Journal of the Society of Arts' for December; by the Society. 'The Reader' for December; by the Editor. 'The Athenæum' for December; by the Editor.

The following addition by purchase was also announced:—Gerstaecker (A.), 'Bericht über die wissenschaftlichen Leistungen im Gebiete der Entomologie während des Jahres 1862.'

Election of Members.

Edward Saunders, Esq., of Hillfield, Reigate, was elected a Member of the Society; M. H. Hartogh Heys van de Lier, of Delft, was elected a Foreign Member; and Mr. James A. Brewer, of Newgate Street, London, was elected an Annual Subscriber.

Exhibitions, &c.

Mr. Bond exhibited a fine series of Ephestia ficella, bred from cork; specimens of Depressaria olerella, a species recently added to the British list, and captured by Mr. C. G. Barrett near Haslemere; and some remarkable examples of Hepialus Humuli, captured during the past season by Mr. Rich, at Lerwick, in the Shetlands. Of the last mentioned, some more extraordinary specimens from the same source had been placed in the British Museum; the males, instead of having their anterior wings (as hitherto universally known) of an unicolorous white, varied from dull white to orange-brown and even brownish black, and the majority of them exhibited all the markings usually found on the anterior wings of the females; the ground colour of the females was in some cases dull orange-brown, in others dull dirty white. Thus each sex appeared in the garb of the other. The number of the typical form of the insect was a small fraction of the total number captured; and but for the occurrence of the few normal specimens, the variety would doubtless have been regarded as a completely distinct species.

Mr. A. R. Wallace exhibited some Longicorn beetles collected by Mr. James Lamb at Penang and in the province of Wellesley. Mr. Lamb had collected Coleoptera in that locality during the last four years, and amongst his captures were a

couple of hundred species of Longicornia, of which upwards of seventy were laid before the Meeting, nearly the whole of them being new to Science; many were referrible to genera discovered by Mr. Wallace in Borneo and Singapore, whilst others were more nearly allied to the forms occurring in Siam.

The Rev. Hamlet Clark (on behalf of the Rev. O. Pickard-Cambridge, who was present as a visitor) exhibited a collection of Lepidoptera (including Micro-Lepidoptera), Hymenoptera and Orthoptera from the banks of the Nile. Mr. Cambridge remarked that insect-life was not abundant in Egypt; the specimens exhibited included every Micro-Lepidopteron which he saw. He also called attention to the seed-pod of a Cassia, from which had emerged a Lycæna; but the pod had not been opened, so as to show the pupa.

The Secretary read the following extract from a letter addressed to him by Mr. Roland Trimen, dated Cape Town, November 12, 1864:—

"I observe in the Report of Proceedings on March 7th, 1864, p. 10, that Professor Westwood described as a new species a butterfly from the Zambesi, under the title of Charaxes Argynnides. There can be no doubt whatever that this insect is Nymphalis Jahlusa of my 'Rhopalocera Africæ Australis' (Part I. p. 177), as I have carefully compared Professor Westwood's description with my own and with specimens of N. Jahlusa, and have examined an example of this butterfly brought from the Zambesi by a member of the mission party. The resemblance which this Nymphalis, in coloration and marking, bears to the species of Argynnis is, as the Professor states, very remarkable, and is noticed in my Catalogue (p. 178). It is singular, however, that no true Argynnis has been taken in South-Eastern Africa, the only Fritillary known to inhabit the region being Atella Phalanta, which has no silvery spots on the under surface of the wings; so that the silver-studded Jahlusa can hardly be held to present one of those remarkable cases of mimicry which have been lately shown to be not uncommon amongst butterflies. The markings of the upper surface, however, correspond very nearly with those exhibited by Atella Phalanta."

Mr. Dunning mentioned that the Rev. J. Collins, of Shepley Parsonage, near Huddersfield, had recently captured in that neighbourhood a considerable number (fifty or sixty specimens) of Dasypolia Templi; they were found in quarries, amongst loose stones, in the ruins of old houses, or in heaps of stones by the road-side, &c., and were generally very snugly ensconced, resting on the under side of the stones. The time of capture was the end of November and beginning of December, which, however, was too late in the season, for very few males were found, and those were generally dead. The specimens varied in colour, some having a yellowish tinge, others being brown or nearly black; and it was necessary to leave them for a long time on the setting-board in order that the wings might become stiff. Mr. Collins further mentioned that on two or three occasions he had found some eggs, which he thought might prove to be those of D. Templi; and that he inclined to the opinion that, in some cases at least, the food of the larva was the common ling or heath, or the small sorrel.

Mr. F. Smith communicated the following notes by S. Stone, Esq., F.S.A.:—

Wasps and their Parasites in 1864.

"The year 1864 will long be remembered, on account of the magnificent weather which prevailed throughout the whole of the spring, summer and autumn; the abundance of fruit of almost every kind, and the extraordinary number of wasps

which were observed throughout the country. These insects made their appearance and commenced their labours at an earlier period than I ever knew them do before.

"On the 23rd of April I removed, from a chamber I had formed the year before, a small nest of Vespa germanica. It consisted of a foot-stalk with four cells depending from it, two of which contained eggs, while above them a small umbrella-shaped covering had been formed.

"During the season I have had opportunities of removing and thoroughly examining one hundred and ten nests, *viz.*, forty-five of Vespa germanica, twenty-seven of V. vulgaris, twenty-one of V. rufa, sixteen of V. sylvestris, and one of V. Crabro. Of these I have preserved a fine series, from specimens the work of two or three hours, to those which have occupied as many months. I have also a series of most odd-looking nests constructed by the workers of various colonies when the original nests to which they belonged had been taken away.

"On the 30th of April I took out of a chamber I had constructed a few weeks before a second nest of V. germanica: two coverings were in progress, and twelve cells had been formed, most of which contained eggs. No sooner had this nest been removed than the queen wasp set about the construction of another in the same chamber, which I removed on the 2nd of May, when she immediately commenced building a third, but a drenching and continuous rain which came on caused her to desert this nest, which I removed on the 4th.

"On the 2nd of May I also removed from another chamber I had formed a small nest, or rather the commencement of one, of V. germanica. It consisted of a single cell at the extremity of a foot-stalk. At 1 P.M. this cell was empty; at 1h. 30m. an egg was found to have been deposited in it. At 4 the specimen was removed, while the queen wasp was out collecting building materials. On her return with the materials she had procured she employed them in laying the foundation of a fresh nest in the same chamber, which, in consequence of the rain above mentioned, was deserted the next day. It consisted of a single cell with foot-stalk.

"Between the above date and the 22nd I removed, from chambers I had formed, eight small nests of various species, which had become deserted in consequence of damp, or the attacks of enemies, among which the centipede appeared to take a prominent part. Underneath two of the number a female or queen wasp was found lying dead; but whether they were those belonging to the nests, or strangers, is uncertain.

"On the 27th of June I took out of the head of a felled pollard elm a small deserted nest of V. Crabro, which was commenced on the 9th. It consisted of a foot-stalk, to which were attached eighteen cells, some containing larvæ about one quarter grown. A basin-shaped covering, two inches and a half in diameter, was formed over the cells. It appeared to have been deserted about a week.

"On the 29th I took out a nest of V. rufa, which was in a very forward state, both males and young queens having been produced in it. The crown was studded with eggs of a species of Volucella.

"On the 11th of July I took out a rather small nest of V. rufa, in which I found two females of Anthomyia incana in the act of depositing their eggs.

"On the 14th I took out a small nest of V. rufa, built by the workers left behind when the original nest to which they belonged was removed on the 22nd of June. It measured but about an inch in diameter, and contained one small comb, in the cells of which were found eggs, larvæ of various sizes, and a few spun-up larvæ or pupæ.

"On the 18th I observed the workers belonging to a nest of V. vulgaris bringing out the larvæ, some only about half-grown, which they carried to a distance and then dropped, just as they are in the habit of doing at the close of the season when the communities break up—a proof that at that time the colony was in anything but a healthy state. This nest was close to one of V. germanica. The former became a ruin before the end of August, and the latter soon afterwards; thus proving that disease of some kind had attacked both communities.

"On the 1st of August I took out a nest of V. sylvestris. It was suffering from the attacks of a species of Acarus, which infested it in countless numbers: a female of Anthomyia incana was also found in it in the act of depositing her eggs. I also took out a small nest of the same species built by a few workers belonging to one I had removed on the 16th of July: the present specimen was a very rough-looking object, it having been built among the tangled roots of the common couch-grass: it contained many pupæ or spun-up larvæ, besides eggs, and larvæ of various sizes. On the same day I took out one of V. germanica, which had been constructed by workers from a nest removed on the 16th of July: it consisted of a small comb with a hood-shaped covering: in some of the cells were very small larvæ; in the rest eggs only. I also took out a nest of V. rufa built by workers belonging to one removed on the 15th of July: it was a most singular-looking nest, in shape very like a mole (*Talpa vulgaris*), and of much about the same size.

"On the 2nd I took out a nest of V. sylvestris, constructed by workers from one removed on the 11th of July: it contained great numbers of pupæ, as well as larvæ of various sizes, and some few eggs. The larvæ were suffering greatly from the attacks of an Acarus, which, by sucking their juices, had reduced them to a deplorably emaciated state, so that the destruction of the entire brood must, from this circumstance alone, have speedily ensued. On that day I took out a nest of V. germanica, constructed by workers belonging to one I had removed on the 4th of July. A queen of the species had by some means contrived to introduce herself into this nest, where she had become domiciled: it measured about three inches one way and two inches the other. On the same day I took out a nest of V. rufa, produced by workers from one removed on the 16th of July: it was very small, measuring but two inches and a half in length by one inch in breadth: it contained a few spun-up larvæ, beside eggs, &c.

"On the 16th I brought home combs belonging to a nest of V. vulgaris, into which, through the aperture leading to it, the gardener at Cokethorpe Park had, a few evenings before, poured a quantity of gas tar. On opening the closed-up cells I found several pupæ of the parasite Ripiphorus paradoxus, and numbers of the perfect insect, both male and female, but could not detect the presence of a larva.

"On the 19th I was more fortunate, for on taking out a nest of V. vulgaris and proceeding to open the closed-up cells, I found a larva of the parasite firmly attached to the full-grown larva of the wasp; the mouth of the former buried in the body of the latter just below the head; its neck bent over that of its victim, whose body appeared to be tightly compressed by that of its destroyer, showing the latter to be possessed of a considerable amount of muscular power. It was of minute size when discovered, and appeared to have only very recently fastened upon its victim; but so voracious was its appetite, and so rapid its growth, that in the course of the following forty-eight hours it attained its full size, having consumed every particle of its prey with the exception of the skin and mandibles, which, from observations I have since

been enabled to make, these creatures retain in their grasp even after they have passed into the pupa state. They scarcely appear to cease eating, except now and then for a minute or so, from the time they first begin to feed till they have become full grown. The larva is a singular-looking one. The head is bent forward under the body. Between the segments it is more deeply furrowed than any larva with which I am acquainted. A longitudinal furrow extends down the back from the head to the anal extremity, cutting each segment across. The skin, during life, throughout the whole course of this furrow, is perfectly transparent, so that the workings of the internal organs may be plainly seen. The body of the larva while alive has the appearance of a thin transparent skin filled with minute particles of curd. These appearances vanish after death, when the body becomes dense, and has an appearance of solidity about it which it had not before. Several pupæ of the parasite were found in the nest, as well as examples of the perfect insect. It also contained a number of cocoons spun by the larvæ of Anomalon Vesparum, with the larvæ still unchanged inside the cocoons.

"Between the above date and the 3rd of September I took out thirteen more nests of V. vulgaris, which contained examples of Ripiphorus either in the larva, pupa or perfect state. In one which had been destroyed by means of gas tar a few days before I took it out, I was fortunate in discovering a small larva of Ripiphorus firmly attached to its victim. Both were dead and had become partially dried, so that when immersed in spirits they did not separate, but remained attached just as they were before death. These are interesting, because in them may be seen the exact way in which the parasitic larva fastens on its prey. In another, which I took out on the 2nd of September, I found, on opening some closed-up cells appropriated to queens, one larva and one pupa, which differed in nothing that I could discover from those of Ripiphorus found in the cells of workers, except that they were something like double the size; in fact, about as much larger as the larvæ and pupæ of queen wasps are larger than those of workers (*ante*, pp. 49, 58).

"Until the present summer I had not met with a specimen of Ripiphorus since the year 1859, although I had made diligent search for it every succeeding summer. What had become of it all that time, and how it was that all at once it made its appearance in such numbers, are questions more easily asked than answered. Where it occurs it appears to be very local, for I have never met with it except in one particular part of Cokethorpe Park, within a space of ground about four furlongs in length by two in width. I have searched yearly for it in nests obtained from other parts of the park and the surrounding neighbourhood, but always in vain.

"In one nest of V. vulgaris, which I took out on the 24th of August, I found, in addition to examples of Ripiphorus in the larva, pupa and perfect state, a number of cocoons spun by the larvæ of Anomalon Vesparum, intermixed with which were those of a much smaller species of ichneumon, which made its appearance in the perfect state a few days afterwards. Of what genus this may be I have yet to learn. I am not aware that an ichnuemon of this size has been described as an inhabitant of wasps' nests; it may, therefore, possibly prove to be new.

"Upon the crown of almost every nest I examined, after the season had become somewhat advanced, I found eggs of Volucella; and my attention was in several instances drawn to a nest by seeing a specimen of Volucella pellucens or of V. bombylans hang about or alight near the entrance to it.

"The breeding of wasps in a semi-domesticated state in-doors was this year attended with only partial success. I had at one time as many as eleven colonies of various species at work in different windows of the house I have used as an establishment for wasps for some years past, *viz.*, five of Vespa sylvestris, two of V. rufa, two of V. vulgaris, and two of V. germanica. These all went on satisfactorily enough for some time, until at length, as the season advanced, the workers belonging to nests round about the neighbourhood, which I had not been able to discover on account of having but little time to search for them, began to increase, until their numbers became enormous. These, attracted by the sugar with which mine were fed, came crowding in swarms into the different boxes, thus at first impeding and ultimately putting a complete stop to the work, not, however, until many of my nests had become fine specimens, and two very extraordinary ones had been produced.

"The facts connected with the production of these two specimens are as follow:—I had a colony of V. germanica at work in a box in *the left hand corner* of the window of a room on the ground-floor, the nest having been removed from its original situation under ground on the 10th of June. On the 18th I took off the shell or covering, which I put by for a specimen, having first neatly joined in the piece I had cut out in order to take out the combs, which were then returned to their place for further work, a plan I generally adopt when I wish to obtain specimens of nests of various sizes from one set of combs. At that period there was nothing remarkable about the nest. About the same time I obtained one of V. vulgaris, which was placed in a box in *the left hand corner* of a window immediately above. It was not long before I observed that a strange variety of colouring was beginning to pervade the newly-formed covering of the nest of V. germanica, and on looking more closely I could perceive that it was partly composed of scrapings from sound wood, and partly from decayed, or touch-wood; and on carefully scrutinizing the individuals composing the colony, it was found to consist in part of V. germanica and in part of V. vulgaris. It appeared, therefore, that a number of workers from the nest in the room above had attached themselves to this one. There was another nest of V. germanica in full work in the opposite, or *right hand corner* of this same window, and as no specimens of V. vulgaris were ever found in it, I conclude that those which had joined the other community made no mistake as to *the corner* of the window in which their own nest was situated, but they miscalculated the height of the proper window from the ground, and so 'got into the wrong box," but as they came provided with food or building material they were not interfered with, but were allowed quietly to join in the work of the nest and to make it their future home. Widely different would have been their reception had they entered it for purposes of theft, or even if their intentions had appeared to be suspicious; for although wasps will often allow strangers of their own species to enter their nests without offering them any molestation, though they may have come for the sake of plunder, they will not tolerate the presence of those of a different species under such circumstances; indeed I never before knew them admit of strangers of a different species under any circumstances.

"On the 20th of July I again applied the scissors to this nest in order to remove the covering, which as before, after joining in the piece I had cut out, I put by for a specimen. I then took away the lower comb and reduced the others in size, returning them to the box, and placing them in such a position that the insects should of necessity produce a vase or goblet-shaped nest, which they did, and a splendid thing it is, being, like the one previously formed, composed in part of paper manufactured

from sound wood by workers of V. germanica, and in part by paper manufactured from touchwood by workers of V. vulgaris. From the comb and pieces of comb taken away when the covering was last removed numbers of young wasps of both species (V. germanica and V. vulgaris) were produced, thus proving beyond all question that the workers of Vespa vulgaris had not only been assisting in the work of the nest of V. germanica, but had also been depositing fertile eggs in the cells.

"I am enabled to add another instance of the kind. Two nests were situated almost close together in a drain at Cokethorpe Park, which I took out on the 27th of August. One belonged to Vespa vulgaris, the other to V. germanica, and it would appear that, at an early period in the season, workers from the nest of the former species had attached themselves to the latter, their numbers increasing as the season advanced, till at the above date the colony consisted of nearly an equal number of each, as was evident from an inspection of the work, which appeared to be nearly equally divided between the two; streaks composed of paper manufactured from touchwood, alternating with stripes of that substance made from sound wood, as in the case of the two nests previously described.

"If, as I apprehend must have been the case in the present instance, the workers belonging to the colony of V. vulgaris mistook their neighbour's house for their own, the entrances being so near together, it is rather extraordinary that those belonging to V. germanica should not have made a similar mistake. They appeared, however, not to have done so, or, if they did, the mistake, whenever it occurred, must in every instance have been at once discovered and rectified, for no work of theirs was found in the nest of V. vulgaris.

"I do not know how the case may have been in other places, but here I have not met with a healthy colony of wasps since the beginning of September. An unaccountable fatality began to attend them about that time, and in some few instances at a much earlier period, so that nest after nest perished, till not a single nest was to be found, and that long before the usual time for the breaking up of the different communities. It was the same in 1854, the last year the cholera prevailed to a great extent throughout the country. Then I took out numbers of deserted nests, both of V. vulgaris and V. germanica, during the months of August and September, although the weather at the time was of the most glorious character, while underneath the fruit trees in the gardens at Cokethorpe Park, thousands of wasps were to be seen lying dead. So, during the autumn of the present year, I noticed that in a row of young newly-planted elms, many of the trees had, from some cause or other, numerous punctures in the bark, from which the sap was oozing; around each of these punctures were clusters of wasps imbibing the liquid as it oozed from the wounds; while around the base of each wounded tree lay heaps of defunct wasps. They appeared to sip on till they became powerless, and then to fall and die."

Mr. F. Smith remarked that he had not previously noticed the diseases amongst wasps to which Mr. Stone alluded, but during the past autumn, at Bournemouth, he had found the insects dying and the colonies breaking up in the manner described by Mr. Stone; in August he had found a nest of Vespa rufa all dripping with moisture, and on examination it proved to be full of the larvæ of a Silpha, which had doubtless been attracted by the dead and rotten larvæ of the wasp. He believed also that Mr. Stone's observation of Acari infesting wasps' nests was new.—*J. W. D.*

A Seal in the Taw near Barnstaple.—A juvenile example of the common seal (*Phoca vitulina*) was shot in the River Taw, on the 24th of December, measuring 3 feet 8½ inches in length, and weighing 73 lbs. These animals are rarely seen in our river, the last having been killed in 1851. The animal in question when skinned proved to be a female, and was in excellent condition.—*G. F. Mathews; Raleigh House, near Barnstaple, December* 31, 1864.

Bats abroad in January.—At about five o'clock yesterday afternoon—a warm sunny day, the sky cloudless—I saw a bat of some small species flying about and over the Edgeware Road, near the Victoria Rifle-ground at Kilburn. This goes to disprove what I have hitherto taken as an invariable rule, that bats pass the whole winter in a state of torpidity.—*Charles B. Wharton; Willesden, January* 5, 1865.

Romance of Natural History.—It is stated that about three weeks ago some quarrymen working at Wear Gifford Quarry, the property of Earl Fortescue, while breaking a large mass of stone, found within it an immense rat, of great length from snout to tail, with whiskers six inches long. It is to be offered to the British Museum. —*Western Daily Press.* [I should like to hear, *first*, whether the rat was alive, like the toads, and, *secondly*, what Mr. Gosse thinks of the whole matter.—*E. N.*]

The Merlin near Hailsham, Sussex.—A very beautiful male merlin, with the blue back, was shot at Hailsham about the 3rd of this month, and which I examined in in the flesh. The bird will be in my possession when it comes from the preservers.—*John Dutton*; 51, *Terminus Road, Eastbourne, January* 3, 1865.

Whitetailed Eagle in Sussex.—Whilst travelling on the road between Brighton and Henfield I saw a large brown mass, near the top of an oak tree, in a hedge-row about three hundred yards off. I asked the coachman if it was a bird, and he pulled up. Immediately an eagle rose up, and soared steadily away, and was lost sight of in a wood at no great distance. It was again seen about a mile from the same spot in the afternoon of the same day. The tail being very white proves it to have been an adult bird. I do not think an adult bird has before been observed in Sussex.—*W. Bower; Cowfold, Horsham, Sussex; January* 26, 1865.

Kestrel v. *Kestrel.*—When I was out shooting last Saturday I heard, in some thick bushes about forty yards in front of me, something screaming desperately. My retriever heard it too, and ran in to see what was the matter. A large hen kestrel flew away on his approach, which I shot, and on going up to the spot where I heard the noise I discovered another hen kestrel hawk fluttering about on the ground, with one of her eyes torn out and the feathers picked off her head. I suppose the stronger bird of the two was about to make a meal of her weaker sister, quite upsetting the proverb that "Hawks don't pick out hawk's eyes."—*J. A. Jones*; 1, *Cowper's Court, Cornhill, December* 22, 1864.

Sparrowhawks.—While walking in the woods, last June, I noticed a nest in a Scotch fir. Meeting one of the gamekeepers on my return home, I went with him and showed him the nest. Having climbed the tree, he found five young birds, two of which I asked him to bring down. On examining them, they were found to be young hawks about a week old. We waited for some time, and at last shot the female bird, which proved to be a sparrowhawk. We then left the tree. Next morning the keeper came early to watch for the male, but after waiting some time he

climbed the tree again, and found the remaining hawks had been removed. Is it likely that the male bird, finding the young had been disturbed, removed them to a place of safety? Perhaps some of the readers of the 'Zoologist' will be able to explain this.—*William Brown; Wynyard Park, Stockton-on-Tees, January* 27, 1865.

Cream-coloured Redwing and Pied Variety of the Blackbird.—A cream-coloured variety of the redwing (*Turdus iliacus*) was shot here a few days ago, as well as a pied variety of the blackbird (*T. merula*), both of which came into my possession.—*G. F. Mathews; Raleigh House, near Barnstaple, January* 12, 1865.

Pied Blackbird at Moundsmere.—On the 23rd of January a very pretty pied specimen of the blackbird was shot by Mr. A. D. Bradby at Moundsmere; it was a male bird, and in good plumage. It has several white feathers in each of its wings, also in its tail, the body being covered with white and black feathers intermixed. On examining its gizzard, I found it contained twelve small snail-shells, some partly digested beetles and a quantity of half-digested matter, apparently corn, I fancy oats.—*Anthony S. Bradby; Moundsmere, Hants, January*, 1865.

Blackbird's Nest built in a Wagon.—An instance of the curious building sites selected by the blackbird came under my notice last breeding season. A friend of mine, Mr. James Hunt, a gentleman residing in this city, brought me a nest and eggs of this species one afternoon during the latter part of the month of August last, and related to me the following curious circumstance attending the discovery of the same. He says, "This morning I was passing through St. Stephen's Street, in my gig, with another gentleman, when I observed a wagon loaded with straw standing on one side of the street, an unusual mass of material projecting from one side of which attracted my attention, and thinking it somewhat peculiar I touched it with the end of my whip-handle, when greatly to my astonishment out fell two eggs, which were smashed on the pavement; upon this I stopped the horse, and, standing upright in the gig, reached down the nest, for such it proved to be, and found it contained three more fresh-laid eggs." In the afternoon, as above stated, Mr. Hunt very kindly brought the nest and its contents to me. On examining it, I found it composed of the usual materials, with the addition of a few small clods of green grass; some of the straw with which the wagon was loaded was also entwined with the other materials by the ingenious builders in its construction. The wagon had most probably stood next a hedge in the field previously to its removal, and the parent birds, doubtless thinking it more secure, selected this curious situation for their habitation, which, however, only led to its ultimate discovery and removal.—*T. E. Gunn; Surrey Mews, Norwich, December*, 1864.

Wren's Nest.—In looking over some of the dried-up bodies of some predacious birds that were nailed by the head to a pole, I found a wren's nest, containing seven young ones, fixed in the claws of a tawny owl swinging to and fro in the wind.—*William Brown.*

Richard's Pipit at Brighton.—Yesterday evening Mr. Swaysland, naturalist, of Brighton, sent up to my house a living specimen of Richard's pipit (*Anthus Ricardi*) to examine. It had been taken in a clap-net, by a birdcatcher, at a place called Toad's Hole, on our downs, one and a half mile from the sea, near Hangleton, Portslade, three miles from Brighton. The young man who caught it said he was struck by its loud note, and drove it about nearly two hours before he could get it into the net. Ultimately he managed to pull just as it flew across, being put up by sheep feeding in the field. There was nothing to attract it in the net, but, being an expert

hand, he succeeded in a way I have often seen used by birdcatchers, and which astonished me much when I first became acquainted with it. Swaysland and I think the specimen is a male, but we are not positive as to the sex. Its total length is 7½ inches, from tip of front claw to tip of hind claw 2¼ inches. Four outer feathers of its tail had been, as we suppose, shot away, *viz.*, two dark and two light ones; they might have been gone a fortnight; the stumps of the new ones were just coming. The two centre short feathers remained. It had twelve feathers before its loss. Its legs strike me as being very long, and the difference in size between it and a true tree pipit (*Anthus arboreus*), which I saw by its side, was very great. The wing and general appearance of the bird is quite that of a pipit. It is the head of the pipits, as the common bunting (*Emberiza miliaria*) is the head of the buntings. I particularly remarked the moustache-like marks under the throat, which all the pipits have. Birds killed at this time of year are in better plumage than during the breeding season. This Anthus Ricardi has passed into the collection of Mr. T. J. Monk, jun., of Lewes, Sussex, who came over from that place on purpose to see it alive, which he did, as well as myself. I think there is no possibility of captivity having anything to do with this specimen, being so rare, and conclude that this is a genuine instance of its occurrence. It is the first that has ever come under my own personal observation. I was therefore much pleased to handle and examine a really British-killed Richard's pipit. Its dimensions, hind claw, &c., exactly agree with Yarrell, and are well known to your readers, therefore I do not repeat them here.—*George Dawson Rowley; 5, Peel Terrace, Brighton, January* 21, 1865.

Note on a Deformity in the Bill of a Sky Lark.—A sky lark was shot near Worthing on the 26th of December, 1864, in which the bill had become very curiously deformed, either from the effect of accident or from a morbid growth. The upper mandible had assumed a spiral form, rendering it apparently quite useless, and the lower mandible, which remained straight, had grown to nearly twice its natural length, the extraneous length being composed of a narrow elongated horny substance, protruding much beyond the upper mandible, and somewhat resembling, in miniature, the lower mandible of the genus Rhynchops. Strange to say, this malformed lark was as plump as if his bill had been in no way defective.—*J. H. Gurney.*

A Black Sparrow.—On the 23rd of this month I saw a variety of the sparrow never seen by me before: it was entirely black, the legs and bill orange. The bird was feeding with others on a patch of horse-dung, and was not three yards from me.—*H. Blake-Knox; Dalkey, Co. Dublin, December* 26, 1864.

Partridges killed by flying against a House.—This morning (January 30th), as I was sitting at my desk writing, the servant came in with a partridge that she said she had just picked up in the garden-path: it fell from the top of the house nearly on her head, as she was walking along. There were others fell at the same time, so she informed me. We went at once into the garden, and with the help of a dog, found five others, two of which were quite dead, one nearly so, another flew up, but was shot, and one appeared to have nothing the matter with it, and was let fly off, after we had examined it. I have since heard that another bird was seen, which must have struck the house nearer the top, as it was seen amongst the snow on the ground at the other side of the house. I examined one that we found quite dead, and the bones near the breast are all broken to pieces. From what I saw I suppose that the birds were flying at a great rate, and something must have frightened them out of their course and driven them into the way of the house-roof, which being covered with

snow, they did not see until they struck against it. I once saw two partridges struck down in a similar manner: I was talking to some labourers who were close to a hedge, and at the same time, in the shelter of a rick, a covey of partridges flew across one of the fields near, and came straight for where we were standing; not seeing us till they were very close, they had not time to slacken their speed, but, altering their course a little, they came in contact with the rick, and thus two of their number got knocked down; one was soon on the wing again, but the other was very much hurt.—*Anthony S. Bradby.*

Note on the Purple Sandpiper.—On the 24th of December, 1864, two of these sandpipers were killed at Lancing Water, a long broadish pool lying between Worthing and Shoreham. Mr. Wells, birdstuffer, at Worthing, informs me that these sandpipers occur not infrequently, in winter, at this particular spot, and that he has observed that, when standing at the edge of the pool, they have the habit of dipping suddenly under water with a plunge, so much resembling that of the water rat that when Mr. Wells first saw one of these birds perform this action, he actually mistook it for a water rat (which he supposed to be making its accustomed dive from the bank into the water), and it was not till after it had emerged that he discovered that the subject of his observation was a bird and not a quadruped.—*J. H. Gurney.*

Firecrested Regulus at Brighton.—A male specimen of the firecrested regulus (*Regulus ignicapillus*) was killed at Plompton, near Lewes, by Henry Swaysland, on the 24th of December, 1864. The bird was in company with a blue tit (*Parus cæruleus*) in an oak tree. Another, supposed to be the female, was shot at without success. I observed the fiery crest very strong in this example, which makes me suppose that when, after the second moult, Reguli obtain their red or orange crest they keep it through the year. I have not a sufficient series of skins by me to determine the point, and find no help from the works I possess. It is a pity that our English ornithologists did not adopt the "Roitelet triple bandeau" of Temminck for this species, the trivial name "fire-crested" being by no means a striking point of difference from P. cristatus, while the black bands at once catch the eye of the most superficial observer.—*George Dawson Rowley.*

Food of Green Woodpecker.—I have on several occasions examined the stomach of this species, and in most instances have observed that their food in general consisted chiefly of worms, insects, &c., and was therefore much surprised, on dissecting an individual (a female) in October last, to find its stomach quite filled with oats, and the remains of two or three acorns. I had known Picus major to vary in its food, sometimes substituting grains and other vegetable matter instead of insect-food, but I was not previously aware that this species was ever in the habit of doing so.—*T. E. Gunn.*

Water Rail in Stirlingshire.—I have pleasure in recording that a specimen of this bird was taken here yesterday. The water rail has of late years been extremely rare here, this being the first that has come under my notice as being killed in this vicinity. It was caught on the public road by the gamekeeper, within a few yards of the village, and at once brought to me, and I am having it stuffed by Mr. Small, of Edinburgh, for my own collection.—*John A. Harvie Brown; Dunipace House, January* 4, 1865.

Abundance of Woodcocks in Norfolk.—The woodcock appears pretty plentiful in Norfolk this winter; scarcely a week has passed by during the present season in which I have not observed at least a dozen hanging up in our fish-market. I heard one gentleman remark, during the latter part of the first week in December last, that as

many as sixty-one individuals of this species had been killed during the course of the ensuing week, in a single wood in the parish of Gressinhall.—*T. E. Gunn.*

Extraordinary Death of five Swans.—A circumstance has recently occurred near here, upon which, if agreeable to you, I shall be greatly obliged if you will give me your opinion. Near Ashby-de-la-Zouch there is a gentleman's mansion, to which there is a park containing a fine sheet of water. This water is ornamented with several kinds of wild fowl, and amongst them were five adult swans. On Wednesday night last these swans were all alive, apparently in as good health as usual. On the next morning all were found dead, or so nearly so that all died almost immediately. Their food was grain and acorns, the food which they usually had. The question is, What was the cause of death? I am very anxious to find this out. There was little food of any kind in the interior, and that in a natural state. There were no marks of violence on the body. The inside of each seemed quite healthy. The cause of death seems very singular.—*John Joseph Briggs; King's Newton, Swarkeston, Derby, February* 2, 1865.

[This circumstance forcibly suggests poisoned grain as the cause of death. Has any examination of the remaining grain been made?—*E. N.*]

Rednecked Grebe in Lincolnshire.—I have just examined a fine specimen of the rednecked grebe (*Podiceps rubricollis*). It was sent me by a friend, who found it nailed up by the head in the "gamekeepers' museum." Being in a perfectly putrid state, it was too far gone for preservation. From its plumage, I believe it a mature female. The bird was taken alive, a few weeks since, in the neighbouring parish of Barnoldby-le-Beck, by a labourer, who found it in a small pond, and, as he says, unable to fly. An attempt was made to keep it alive, but without success; and it doubtless shared the fate of many a rare and valuable bird, when nailed up, at the end of a shed, in company with magpies and carrion crows.—*John Cordeaux; Great Cotes, Ulceby, Lincolnshire, January* 27, 1865.

On the Submergence of Water Birds.—The smew (*Mergus albellus*) occurs occasionally in the winter near Newark. I once came upon three of these birds, an old male and two in female plumage, swimming on the Trent in the middle of the stream. To my surprise, instead of taking to flight, they immediately sunk themselves in the water, so that very little more than their beaks was visible. I stood still and watched the beaks until the birds had swum with the stream out of sight. There has been a a good deal written in the 'Zoologist' about the power of submergence that water birds possess. I explain it in this manner: when a duck or other bird is swimming on the water, the water is kept at a considerable distance from the skin by the feathers of the belly and sides. The feathers project from the skin at about right angles, their extremities are curved and lap over each other, fitting perfectly, and present a smooth surface to the water. By this means the specific gravity of the bird is very much lessened. Now all the bird has to do is, by means of the paniculus carnosus (the muscle of the skin), to contract the feathers close to the body, and thus, by lessening its external bulk, increase its specific gravity. It of course sinks in the water, and the bird has the power of regulating the degree of submergence. Birds vary in their habits: amongst the land birds, some, as the rails, &c., prefer running and hiding to taking to flight; so amongst the natatorial birds, some, as grebes, &c., prefer submergence and diving to flight. I have frequently, in open water on the Trent, observed grebes submerge themselves until only their beaks were visible, but on approaching nearer they hurry away by repeated diving.—*W. F. Foottit; Newark.*

Iceland Gull in Dublin Bay.—I had the pleasure of noticing the Iceland gull (*Larus leucopterus*) to-day. It was an immature bird. I generally notice two or three each winter.—*H. Blake-Knox; Dalkey, Co. Dublin, November* 20, 1864.

Sabine's Gull and the Ivory Gull at Weston-super-Mare.—I saw to-day, in the house of a watchmaker of this place, a very beautiful example of Sabine's gull (*Larus Sabini*), which he had shot upon the sands here a few years since. Like all the specimens I have seen which have been obtained in England, this bird is also in immature plumage. This is the second instance of Sabine's gull having occurred at Weston-super-Mare which has come under my notice. The possessor of this specimen of this beautiful little gull told me that a year or two ago he caught, in a jar baited with a sprat, a fine ivory gull (*L. eburneus*) in mature plumage. The bird was kept alive in a small garden for some months, and became a great pet, but eventually, like all pets, met with an untimely end.—*M. A. Mathews; Weston-super-Mare, January* 12, 1865.

Kittiwake in Ayrshire in Winter.—In the beginning of last month I received a young male kittiwake (*Larus tridactylus*) shot on the Ayrshire coast on the 4th of January. This is a rare bird on the Scotch coast in winter. The present specimen was shot out of a flock apparently of the same species, and was sent to me in the flesh. The stomach cuntained fish-bones, remains of small crustaceans, and one or two spines of some species of sea-urchin (*Echinodermata*). The bird was in fair condition, although not nearly so fat as a common gull (*L. canus*) shot at the same time.—*Edward R. Alston;* 205, *Bath Street, Glasgow.*

Voracity of the Angler (Lophius piscatorius).—Some time ago an angler (Irish, "mullagoon") was brought to me with a cormorant (*Carbo cormoranus*) in its throat. The fish had seized the poor bird, most probably attracted towards its capacious jaws, by its bill. It had been gorged as far as the shoulders. The great strength and buoyancy of the cormorant had raised both to the surface, where they struggled until caught. The cormorant only survived his wounds some days. I have seen many instances of small divers, such as guillemots and razorbills, being devoured by this fish, and in one instance found a dead mullagoon with the remains of a great northern diver in its intestines; I have heard also of two or three instances of this bird being killed by the mullagoon. One was also taken after having gorged a large cork buoy, which the fishermen use to mark the position of their crab-pots. Another was taken having swallowed an inflated dog-skin used as a buoy above spillard lines. But the most remarkable instance I ever knew of this fish's voracity was its swallowing a large block of granite used as an anchoring stone for fishing. The only reason I could imagine for its seeming want of taste was that the stone had been used as a block to cut up fish for bait for crab-pots, it being consequently covered with blood, slime and scales.—*H. Blake-Knox; Dalkey, Co. Dublin, December* 20, 1864.

The Sturgeon off Yarmouth.—A magnificent specimen of the common sturgeon (*Acipenser sturio*), weighing upwards of eight stone, was taken off the coast of Yarmouth, on Wednesday, the 11th instant. It was purchased by Messrs. Weavers and Sons, fish merchants, of this city.—*T. E. Gunn; Norwich, January* 25, 1865.

Habits of Spiders.—I most cordially echo the wish of the Rev. E. Horton, in the November number of the 'Zoologist' (Zool. 9331), that arachnidists would more frequently send you their notes. Although knowing nothing of spiders scientifically, I have always been fond of observing the very interesting habits of the web-builders, and have a remark or two to make on Mr. Horton's conjectures. As to the first, if the spiders had built and were occupying webs, they were undoubtedly not hybernating; and, as to a desire to be on good terms with their neighbours, I fear spiders are total strangers to such a feeling, even as regards their own species, except at breeding time. Secondly, I have never known a spider of any kind refuse a moth, and they seem to prey on all insects they can overcome. The third reason is no doubt the true one. Spiders which build open webs, similar to that of the garden spider, never, as far as I have seen, touch an insect that has not been in their webs: in the full ardour of pursuit, they do occasionally endeavour to seize one that has just escaped, and house spiders more frequently do so; the latter might endeavour to catch one that had never touched its web, if very near it, though I myself never saw such a case, nor did I ever see a spider that had so far exhausted its stock of web as to be unable to construct a fresh one, seize a loose insect, though they are said to do so. Having thus, as far as I can, answered Mr. Horton's queries, I beg in turn to ask one: Do those spiders which live upon the insects caught in other webs ever reform, as one may say, and build webs of their own? I fancy I have noticed such cases. One thing is certain, they are never entirely destitute of a supply of web; in fact, I have seen one expend as much in winding up a crane fly, caught in another spider's web, as would build a small web. I should much like to have an opinion from a good observer about this.—*N. C. Tuely; Wandsworth.*

Life-Histories of Sawflies. Translated from the Dutch of M. Snellen van Vollenhoven, by J. W. May, Esq.

(Continued from page 9265).

Phymatocera aterrima, *Klug.*

Imago, *Hartig, Blatt. und Holzwespen*, p. 276, No. 361. *Klug, Blattw. Gatt. und Arten. Fam.* 2, No. 70, *in Magazin der Gesellsch. Naturforsch. Freunde*, 8 *year*, p. 82.

Larva, *Lyonet, Recherches sur l'Anat, &c.*, p. 151, pl. 14. *Bouché, Naturgesch. der Ins.* p. 136 (under the name of Tenthredo (Alanthus) fuliginosa.)

Phymatocera aterrima, parum nitida, alis nigrescentibus ac simul irides coloribus relucentibus, stigmate fuliginoso, puncto corneo in cellula cubitali secunda.

Both sexes of this sawfly had been met with by Mr. Van der Wulp and myself in the wood at the Hague, but we had not been able to find the larva there, its food-plant being unknown to us. If we could

have supposed that Bouché had been mistaken in his determination of the species, we should probably have taken the opportunity of searching for this larva on the lilies of the valley, which are very abundant in some parts of the wood in question: it is the more singular that Bouché should have been led into this error, as he had every opportunity of examining the collection in the Berlin Museum, and appears to have been intimate with Dr. Klug.

It was not until the spring of 1861 that I had the opportunity of fully convincing myself that the larva described by Bouché was the larva of Phymatocera aterrima. On the 8th of July of the previous year Dr. Wttewaall had sent me some larvæ, which had been found on Convallaria multiflora, and from which larvæ the species in question made its appearance in the month of May of the following year.

The larvæ were from 15 to 18 millimetres long, pale purplish gray, stoutish and somewhat humpbacked on the first three segments. They had twenty-two legs; the six anterior, as also the head, were shining jet-black, the other sixteen were of nearly the same colour as the body, only a little paler. Each segment of the body was divided into four transverse folds, on the second and fourth of which were knobs crowned with one or two little black spines. The knobs on the first three and last segments were a little larger, and had a greater number of spines, giving them the appearance shown in fig. 4. There were in all six rows of such little knobs along the body. The dorsal line was darker than the skin appeared to be on other parts of the body. The stigmata were black, triangular. Bouché's description in the above cited work agrees very well with this, as does that of Lyonet, which is, however, less detailed. Fig. 1 represents the largest of my larvæ in profile; fig. 2, the same larva magnified, looking on the back; fig. 3 represents the head and the first three segments, with the three thoracic legs, in profile.

These larvæ, which were found on Convallaria multiflora, took very kindly to Convallaria polygonata, of which I found a couple of plants in my garden. They fed in the evening, and were very tardy and dull during the day time, always remaining at rest, and generally with the head drawn under the anterior segments of the body. Lyonet says that these animals, as well as their excrement, emit a not unpleasant scent of tea; I was, however, not able to perceive it. Shortly after they came into my possession they moulted for the last time, and went into a mixture of sand and garden-mould, which I had placed in their dwelling: in this they constructed such incredibly small cocoons that one could hardly believe the latter could have

contained the larva, which was twice as long as the cocoon, and apparently even broader. Lyonet says that after the last moult they had pale blue heads, in which the black eyes appeared as little points. I did not observe this, and it may have escaped me; but it is also possible that immediately after the last change of skin, the larvæ have blue heads, which nevertheless become black again some time afterwards. The cocoons were elliptic, very hard and pergamentaceous, black, but entirely covered with grains of sand firmly attached to them. According to Lyonet and Bouché, the imagos are developed as early as April. It may probably have been owing to the very cold spring of 1861 that our imagos did not appear until May. M. Wttewaal sent me a sawfly in the first or second week in May, which he had reared; but as, relying on the determination by Bouché, I was expecting to receive Athalia fuliginosa I was somewat surprised at getting a wasp with long Cladius-like antennæ. I immediately opened one of my cocoons, in the hope of being able to make a drawing of a pupa, in which I succeeded. The little pupa which I found was nine millimetres long; the head, back, sides and anus yellowish white; the ventral surface greenish; eyes black, and the folded antennæ, legs and wings, glassy white: from the margins of the saw and ovipositor it appeared to be a female.

M. Wttewaal succeeded in rearing some others: perhaps my having disturbed the sand in searching for the cocoons had had some injurious effect on the contained insects,—at all events, all I succeeded in rearing was one individual in a crumpled condition, but which was nevertheless sufficient to fix the identity of the species.

The female imago of this species is from eight to nine millimetres long, and expands to eighteen millimetres. The general colour is a very dark bluish black, with the exception of the cenchri, which are bluish gray, and also of the knees and inner sides of the two anterior tibiæ, which are brownish. The wings also, although iridescent, are black, the tint being darker at the insertion and paler towards the margin; the stigma is obscure brown.

The antennæ of this insect are nearly as long as the body; they contain nine joints, the first two of which are very small, the remainder being of nearly equal length, the whole covered with an extremely short and fine recumbent pubescence. The antennæ of the male are also provided on the inner and under sides with two rows of longer silky hairs (fig. 8), precisely as is the case in the genus Cladius. The head is somewhat more hirsute in the male than in the female; in both the clypeus is straight, not notched. The shining brown upper

jaws are bidentate at the apex. The thorax, together with the costal margins of the wings, the apical segments of the abdomen and the legs are very finely hirsute. All individuals have a black horny spot in the centre of the second submarginal cell, and in some a similar spot occurs in the first submarginal also.

Lyonet has submitted this species to an exact anatomical examination, as regards the parts of the mouth, the legs, and the saw and ovipositor of the female; his description occupies eight quarto pages, while the whole of plate 14 is dedicated to the delineation of the various details, the figures being in most cases enlarged. (We feel called upon to remark that, although there is no reasonable doubt that Lyonet really dissected and described our aterrima, his 18th figure represents a head with eight-jointed antennæ, whilst the text speaks of "sept articulations." In transferring the drawing to the copper the first two small joints may have been run into one larger one, but how are we to explain the erroneous statement in the text in the case of so accurate a describer as Lyonet?)

If we look at the short and thick form of the body and at the neuration of the wings, we should be inclined to place this species in the genus Selandria of Leach; if we look at the antennæ in both sexes, we shall rather feel obliged to find it a place in the genus Cladius; and if we regard the parts of the mouth we find it to differ from both. It then appears to me to be most convenient, after the example of that acute observer, Dahlbom (Conspectus Tenthredinum, Sirie, &c.), to place aterrima in a separate genus, which he has named Phymatosoma.

As far as our own observations go, this species has, as a rule, but one brood in the year: it is found in various parts of the country. According to Klug, it is taken in different parts of Germany; for example, in the neighbourhoods of Berlin, Gottingen and Garz, in Pomerania, also in Silesia and Hungary. No parasites have as yet been reared from it.

Nematus Salicis, *L.*

J. Goedaert, Metamorph. Natur. vol. i., description xix. p. 58. *Linnæus, Faun. Suec.* (*2nd ed.*) 1572. *Hartig, Blatt-und Holzwespen*, p. 194. *Ratzeburg, Forstins*, vol. iii. p. 125, No. 31. *Brischke, Blattwespenlarven*, p. 6, pl. 1, f. 2.

Nematus flavus, antennis, macula frontali, mesothoracis dorso, macula media pectorali, costa et stigmate alarum nigris; tarsis posterioribus fuscis.

The synonymy of this species is somewhat confused, and it is not always clear, from the descriptions of the older entomologists, whether they had this or the following species in view. I hope, however, to be able to offer good reasons for making the above references and for omitting that of De Geer (quoted by Ratzeburg), a statement of which reasons will be met with in the description of a following species.

These larvæ make their appearance every year in some numbers upon different species of willow, and, as they are pretty large and bright coloured, are readily detected. I remember, as a boy at school, making drawings of them, and attempting to rear them, but I never got an imago from the cocoons. Since that time I have often seen the larvæ and had them sent to me, and as often made the attempt to rear them, but with no better success, until the summer of 1861. The larvæ with which I had made my former essays had all gone into the ground in September, and the imagos would not have made their appearance until the spring: now anyone who has attended to the rearing of insects well knows that in those cases where the larva has to remain so long in the cocoon a hundred circumstances may arise to interfere with the desired result. However, this summer I found a considerable number of these larvæ on willows at Rozendaal, in North Brabant, and, to my great satisfaction, at the expiration of seventeen days, the imagos made their appearance. I am not able to say anything as to the eggs; they are probably laid in a slit made in the bark of a branch of the willow, very likely in rows of ten or eleven each; but I have no evidence on this head. The larvæ attain a length of a little over two centimetres; Brischke states that they grow to one Rhineland inch (2.62 centimetres); however, I have never seen them so large. I have not observed any very young examples, but from the plates given by Ratzeburg and Brischke, I conclude that they do not differ in colour from the older ones.

In the full-grown larva the first three and the last two segments are orange, the rest of the body being blue-green; the head very shining and black. It appears to me that Brischke has made his too blue; but he also distinctly says in his description that some examples are blue, without any admixture of green: it remains, however, a question whether he has not made some mistake on this point, as he calls the colour of the first and last segments red-brown, in which he differs not only from Ratzeburg but from his own figure. All the examples I have seen had those segments of the body distinctly orange. The legs are twenty in number; the six thoracic legs (fig. 4) are obscure reddish yellow at the base, then green; on the first joint are three little

black spots, and on the upper side of the second and third is a little black line; the claw is black.

The three anterior segments have some scattered black spots, and the second and third two larger oval black spots on the sides, as will be more clearly seen from an inspection of figs. 1, 2 and 3, than from any lengthy description. The median segments have seven * rows of little shining black spots, and a few more above the legs, which are blue-green and unspotted (see fig. 5, representing the seventh segment). One row runs along the middle of the back, and on the first and third folds (there are five folds on each segment) are two minute dots; then follows a row of five spots, of which the second is no larger than a dot, then four roundish spots, and under the foremost one the spiracle; below this again is a row of three spots, the anterior of which is very elliptic. Lastly, just in advance of each leg is another elliptical spot, and a similar one just above each leg also. On the last two segments are merely black projecting points, and on the last above the anal valve are two pale orange spines, tipped with black, with a round black spot above (fig. 6).

The larvæ live in company on different species of willow, elevating the abdomen at pretty regular intervals. Their usual position is shown in our fig. 2. Dr. Wttewaal found the larva on Populus virginica and Salix alba. He remarks that they devour even the midrib of the leaf, not leaving more than a centimetre of the petiole; this being contrary to the habit of any other species of Nematus. Almost all the larvæ which I found were taken on Salix alba.

Previous to undergoing their change, my larvæ crept into the earth, where they made cocoons thirteen or fourteen millimetres long; these were very rough exteriorly, but inside of this rough covering, which, however, was very smooth on the interior, another case could be seen, so that the cocoon was, in fact, double; this inner case was very smooth, blacker and shining.

The larvæ taken at Rozendaal, and which began to spin up on the 8th of July, reappeared from the cocoons as early as the 24th. I am not able to give any particulars of the pupa, which probably offers nothing unusual worth mentioning. The imago is represented at fig. 8. I have in my possession some specimens of nearly one centimetre in length, expanding to more than two centimetres, and others much smaller. I nevertheless believe this to be the largest of the allied yellow species

* I wish to draw particular attention to this number, as it affords a characteristic distinction between the larva of this species and that of Nematus trimaculatus, described further on.

of Nematus. The head is yellow, with black eyes, and a black spot spreading out from the vertex to between the black antennæ, and extending to the eyes. The upper jaws are pale brown at the points. Further, the entire body is gamboge-yellow (not orange), with the following exceptions:—A large round shining black spot covering the four lobes on the back of the mesothorax; a transverse line below the white cenchri on the metathorax; a brownish black spot, sometimes but faintly indicated, on the breast of the mesothorax before the place of insertion of the intermediate pair of legs, the tips of the tibiæ and the tarsi of the last pair of legs.

The wings are large and yellowish; stigma black, as also the costal nervure, except at the insertion, where it is yellow. The membrane between the costal and postcostal nervures is brown; the other nervures are black, except the anal nervure, which is yellow.

It appears from what has been said above that this insect produces more than one generation in the year; it also appears that the last, probably the third, is the most numerous. I have seen specimens from Holland, Zealand, Utrecht, Gelderland and North Brabant: it appears to be nowhere scarce. I am, as yet, unacquainted with its parasites.

I have omitted any reference to the description contained in J. L. Frisch's 'Beschreibung von allerlei Insecten Teutschland,' &c., Part vi. No. 4, and Vol. iv., although it is probable that he partly had our species in view; and I have made this omission, in the first place, because he appears to have confused it with Hylotoma Rosæ, and, in the second place, because his description is extremely inaccurate, especially his representation of the nervures of the wing, which cannot apply to this species or even to the genus Nematus.

Notices of New Books.

'*Ootheca Wolleyana; an illustrated Catalogue of the Collection of Birds' Eggs formed by the late John Wolley, Jun., M.A., F.L.S.*' Edited from the Original Notes by Alfred Newton, M.A., F.L.S. Part I. Accipitres. Royal 8vo., 180 pp. letter-press, Nine coloured plates of eggs and nine uncoloured plates of scenery. London: Van Voorst. 1864. Price £1 11*s.* 6*d.*

This beautiful book is a worthy monument to a worthy man. Mr. Wolley, after spending a short but most energetic life in the pursuit of Natural History, died at the early age of thirty-six,

regretted by every one acquainted either with the man or his labours. Shortly before his lamented, and, as naturalists would say, his premature death, he requested that his entire collection of eggs should be handed over to his friend and fellow-traveller, Mr. Newton, who accepted the trust from the hands of Mr. Wolley's father, and accompanied by a manuscript called an Egg-book, containing the carefully preserved records of his experience in what is popularly called Birds-nesting.

Mr. Newton has very wisely concluded to combine these two sources of information, *viz.* the eggs themselves, and the notes which describe where they were found or under what circumstances obtained, reserving for the conclusion of his editorial labours a detailed introduction to the really splendid work, the first instalment only of which is now before us.

However, notwithstanding this reservation, editorial notes, the records of the personal experience both of the editor and his brother, are added throughout, but always clearly distinguished from Mr. Wolley's observations by a different type.

I regret my inability to quote at large from this interesting work, a glance at the crowded state of my pages will convince the most unobservant that "want of space" is no fictitious excuse. I select a single specimen, and hope hereafter to recur to these delightful pages.

Golden Eagle.—"We started from the inn with two men carrying the sixty-fathom ropes, which I had had made in the town. We rested at a place where the foreman was anxious to get rid of eagles, and sent for the shepherd, at whose house we had been the day before, and who was to follow us. We had heard many different accounts—how that the foxhunter killed one eagle a few weeks ago, &c. Some were willing to mislead us, others not so, but all agreed that the nest was inaccessible.

"We reached the crag after a walk of some eight or nine miles from the village. It is a very high cliff overhanging a large loch of the same name. A small birch wood slopes from it to the water. We saw an eagle fly, and settle again at the top of the cliff. Arrived at the shepherd's house, he agreed to come with us, and his son was to show us the nest; but afterwards the old fellow turned coward and would not come near the edge. Having returned, under guidance of the shepherd's son, to where we saw the eagle, I made out the nest with the help of my glass, but could not point it out exactly to my companion. However, he was to remain below with the boy and to signal to me where it was. Having reached the top in about half an

hour, I tied myself to the thick rope, and proceeded, gun in hand, over a ledge to an undercliff of from ten to twenty feet wide, along which I walked some forty or fifty yards. I leaned over the edge, and saw the sticks of the nest some little distance to my right. I got up, shouted and made all the noise I could; but no eagle came out. I saw one soaring silently at a great height. I had been led to believe there was only one bird belonging to the nest; so after all the noise I had made, I took it for granted that this was the one. I shouted for the little rope, and tied a stone and a piece of white paper to it for my companion to signal when it was opposite the nest. However, I found afterwards that he could not distinguish it. I could only just make him out to be waving his cap, he was so far below. No sooner was the stone over the edge of the rock than out dashed an eagle close to me, within five yards, and with one cry of alarm flew away to the right, down the valley. Evidently a mountain eagle, as the shepherds had called it (it looked rather 'ringtailed'): I was not altogether sorry at having laid aside my gun.

"All was now finally planned. The men wisely thought it would be better to have the stake driven, and everything done upon the ledge. The shepherd, being an old man, did not dare come down. After a little difficulty (for there was no depth of soil), we fixed the big stake firmly above a very steep slope, some yards from the edge of the rock; then a stake for the little rope twenty yards to the left of us. Having spliced the rope to the stake upon which I was to sit, and tied myself in, explained all to the men, and agreed upon the signals, I proceeded over the edge, which, to my horror, I found almost as sharp as a knife, being a kind of mica-schist. I now felt how stupid I had been in forgetting to bring the leathern tubes I had had made; for the sharp edge, besides wearing the rope, caused great difficulty and friction in hauling up. No sooner was I over the rock, with the little rope in my right hand, than I saw the nest, with two eggs, beautiful, and very different from each other, about five feet to my left as I faced the rock. I could just reach the ledge with my fingers and unshod toes, and so, having cried 'stop,' I hung with the rope bearing me backwards towards the abyss, in a position both cramping from the muscular exertion required and highly nervo-excitory from the feeling of danger or insecurity, unfounded though it might have been. On looking at the eggs in the nest, I at once saw a hole in one, as if the old bird had dug her claw into it in her hurry; but on further examination I found it had a young one in it just hatching, and giving vent to low cries, which accounted for the high state of 'closking' in which I had found the

mother. I reached the eggs, and put them in the box with tow, which I had lashed under my right arm, and I put some of the lining of the nest in my pocket. It was very large, something like a rook's, highly magnified, and lined with a kind of Luzula, much of it quite green, and apparently recently placed around: the middle was dried up.* About six feet to my left, and with the embankment of sticks continued to it, was another platform with fresh stuff on it—perhaps a nest of last year or a roosting-place for the other bird. Ten or twelve yards to the right, and not exactly on the same ledge, was another old nest. A few white feathers (ptarmigans') and white fur (mountain hares') were all the remnants of prey that I saw. I was able to communicate with the men by shouting, as I was not more than six feet from the top of the rock, and one of them had descended to the edge. It was fortunate; for had there been wind, as in the morning, I could not have been heard; nor, as it was, could I have been heard further down. The little-rope signals had entirely failed. The eggs having been carefully tied up, I shouted to ascend. The first pull, they told me, was very hard; but I assisted them by climbing myself, and in half a minute I was high and dry, and we shook hands all round: we had finished our wee drop of whiskey before. During this time the eagle did not appear, though it had again come within two or three hundred yards before I went down, but without screaming. All agreed that no man had ever been there before. My companion and the boy, tired and cold, reached the top of the cliff just in time to congratulate us on our success. In going home I put the eggs alternately in my breeches pocket to keep them warm, for I was anxious to save the life of the young. In the evening I liberated the hatching one by an oval opening, and the egg is as good as ever. This is the one with the fewest marks upon it; and it must have been laid and sat upon several days before the other; for when I opened that in the same manner, part of the yelk was not yet absorbed. I put the young bird from the first egg before the fire; its down soon dried, and it became like a powder-puff; I kept it as warm as possible, but it died in two days: perhaps I tried to feed it too soon; or it might have been neglected while I was out. The other one I put in spirits. The down on the legs, as far as the division of the toes, proved them to be golden eagles. The eyes were not open. The 'diamond' on the beak, as in other

* The Luzula, which I believe to be L. sylvatica, grows plentifully on the damp mountain sides and ledges of rocks. The eagles pluck and use the whole plant, which is something like the top of a pine apple; and when dry the leaves remind one of Russian matting; but they are not long, as in specimens gathered in woods.

young birds, used for making the hole in the egg, was very conspicuous."—P. 16.

Mr. Wolley's is a name fraught with the pleasantest recollections to every reader of the 'Zoologist': there never lived a more careful observer, or one more capable of placing a lucid record of his observations before the public.

Another charm in Mr. Wolley's writings is their scrupulous truthfulness: as you read you feel assured that, however thrilling the situation, however exciting the narrative, you never for a moment discredit the narrator: he carries you with him in the minutest detail, and you feel that the picture he is drawing owes no particle of its vivid colouring to the imagination. This is a rare quality indeed. How greatly it is wanting in many of our life-histories of animals.

EDWARD NEWMAN.

On the Habits of the Squirrel. By EDWARD R. ALSTON, Esq.

DURING the past winter three of these beautiful and interesting little animals have favoured us with more of their company than is usual with a species usually so shy, and I have consequently had a good opportunity of observing their habits at that season.

The first of these squirrels, a very gray one, which I shall call No. 1, was first observed, about the middle of last November, feeding on the fallen mast under some beech-trees, about thirty yards from one of the windows of our house in the country. Some filberts were laid out for it, and before long it was seen to come back and feed on them. Next morning it returned with a friend, squirrel No. 2, a more beautiful and apparently younger animal, of a much redder tint. The supply of nuts being kept up, these two came almost every day until the beginning of December, when squirrel No. 3 made his appearance, a fine large specimen, not so gray as No. 1, and adorned with a magnificent brush. About the same time No. 2 disappeared, and has never since been seen, but the other two continued their visits until I came to town in the beginning of January, and I hear that they have been seen since then. They only absented themselves when the snow was pretty deep on the ground, or when the frost was severe; a sprinkling of snow in the end of November was not sufficient to drive them to their hybernariums, but they both disappeared a day or two before the 16th of December, when a snow-storm came on, and nothing was seen of them until the 29th, shortly after a thaw. The

snow returned for a few days on the 1st of January, and although they were not seen while it lasted, yet I found their tracks from tree to tree.

From these and other observations I am convinced that the squirrel does not hybernate so completely as is usually supposed. Professor Bell says, "It remains during the *greater part of the winter* in a state of almost complete torpidity, coming abroad, however, on the occurrence of a fine day, feeding on a part of its treasured hoards, and then retiring again to its slumbers."* Such is the account generally given of its habits in winter; but I am inclined to believe that Von Tschudi is nearer the truth when he says that squirrels "sleep in hard winter weather for *several days together*, but if the snow prevents them long from getting at their stores they readily die."† To this point I would beg to draw the attention of observers.

Another observation of Von Tschudi's on the life-history of this species deserves further investigation. He states that the squirrel "builds *several* rounded nests, and if disturbed carries the beautiful little young ones to a distant nest."‡ I am not aware that this has been observed by British naturalists; but I was once present when three newly-built and empty nests were found in one small plantation, and this in a district where the species is not plentiful. Also, in the 'Field' of April 28th, 1860, a correspondent records the fact of his having seen a squirrel carry a young one in her mouth, and deposit it in a nest.

Of "our squirrels," No. 3 was by far the most interesting; No. 1 was evidently of rather a phlegmatic temperament and decidedly a glutton; No. 2 was much more graceful and lively, but never completely got over its shyness during the short time that it visited us; but No. 3 from the first showed a bold and adventurous disposition, came close up under the windows, and made voyages of discovery in all directions. He (we always spoke of No. 3 as "he" and of No. 1 as "her," why it would be difficult to say) also showed an excellent example in providence, hiding all the nuts he could find; but I was surprised to find that he did this quite capriciously, not taking them all to one place, but burying them all about at random, so that one could hardly believe he would ever find them again, and I have no doubt that he never did find some of them. It struck me at the time that the squirrel thus performs a useful duty, the nuts which he cannot find growing into trees in course of time, and since then I found (in

* 'British Quadrupeds,' p. 292.

† 'Thierl. der Alpenw.,' p. 195. ‡ Id. p. 194.

an old number of the 'Field') an extract from "The American Country Gentleman," noticing the fact of the squirrels of that country planting acorns, and "thus performing an essential service to the landowner."

No. 3's mode of proceeding, which I often watched with a binocular, was as follows:—When he found a nut, he placed it in his mouth with his fore paws, and ran off at a gallop until he came to a soft piece of turf, scraped a hole, placed the nut in it, and readjusted the grass and moss by a few quick pats with his fore paws, the whole process being conducted with the greatest grace, quickness and *gravity*, if I may use the expression. In all this his example was followed by squirrel No. 1, to whom it seemed to be a new idea; but while No. 3 made burying his principal occupation, and merely snatched an occasional minute to eat, No. 1 made a different arrangement, eating half a dozen nuts for every one she hid. When No. 3 searched for the already-hidden nuts it seemed as if he was guided by scent, but of this we could not, of course, be sure. Often he would scrape one up, run off for a few yards, and bury it again, but whether he did this or ate it, he always cleaned it by rubbing it between his paws. Sometimes he carried a nut over a bridge, about a hundred yards from the feeding-ground, and it was interesting to observe how he ran quickly from tree to tree, pausing at the foot of each to listen, and ready to take refuge in the branches at a moment's warning. The squirrel's pace, when at speed, is a quick bounding gallop, but when searching for food on the ground they rather crawl than run.

As might be expected, the two squirrels were not always at peace. No. 3 would bury a nut under the tree on which No. 1 was resting; down she would come to pilfer the dainty, and many a tail-on-end chase was the consequence; however, they never seemed to do each other any harm. One day I saw No. 1 make a narrow escape. She was busily feeding, when suddenly she sat up for a moment, then made a rush for the nearest tree, and got to a branch about twelve feet from the ground, on which she crouched. Presently a large stoat appeared from behind a bush, and ran once or twice round the tree, the squirrel evidently watching its motions; soon, however, the stoat noticed the nearness of human beings, and took itself off; but it was some time before poor No. 1 had courage to descend again to her nuts.

One thing I must not forget to mention, the squirrels arrived at various times in the morning, but were *never* seen after 2 P. M.; where they retired to we could never make out. In addition to the remarks on the food of this species in a former notice (Zool. 9359), I may

observe that a correspondent of the 'Field' states that he has seen squirrels devouring Fungi, and Tschudi says that a careful observer has discovered that they dig up truffles, for which they hunt by scent. Although instances have been recorded of the squirrel destroying young birds and eggs, yet I believe that these are rare and exceptional cases.

EDWARD R. ALSTON.

205, Bath Street, Glasgow,
February 4, 1865.

Ornithological Notes from Shetland. By HENRY L. SAXBY, M.D.

(Continued from page 9439.)

Snow Bunting.—Large numbers of snow buntings still continue to arrive. Although there has been but little frost, most of them have already descended to the cultivated grounds, attracted by the grain which the late gales have scattered in only too great abundance. In rough or wet weather they are not often to be seen upon the wing; but they do not, like many other birds, seek enclosed feeding-grounds for the sake of shelter from the wind: during the heaviest gales I have watched them closely, and then seen that the stubble alone afforded them quite sufficient protection. At such times they are unwilling to rise, and often permit a very near approach. In fine weather they are more disposed for flight, and then it is that their well-known notes may be heard high overhead almost uninterruptedly from sunrise even until after sunset. I have only upon one occasion heard them late at night, and that was at about eleven o'clock one clear starlight night in autumn. Although the individuals in some of the flocks may now be reckoned by thousands, many will leave us as soon as the frost sets in or food becomes scarce, only to return for a short time on their way northwards in spring. Even in open weather one or two may occasionally be seen upon a corn-stack; but it is only during heavy snow or severe frost that they visit the farm-yards in any great numbers. As long as they remain upon the hills they are rather shy; but when they are engaged among the stubble it is comparatively easy to approach them, and in the latter situation they are not very readily perceived, often affording the first indication of their presence by rising suddenly within a few paces of the intruder. When thus disturbed a few nearly always remain upon the ground; but the main body, rising in a compact mass, fly off to some more quiet spot, if they have

frequently been molested; if otherwise, they are nearly sure to return to the same field after the cause of alarm has disappeared. But they seldom alight immediately; the flock descends with a gradual sweep, suddenly contracts its dimensions as the ground is approached, wheels rapidly when within a few feet of the surface, and rising again flies off to a considerable distance before venturing to return, and these manœuvres may be repeated a score of times before it will settle upon the chosen spot. When the flock has finally resolved to alight, it wheels repeatedly and rapidly, and then drops rather suddenly. Snow buntings upon the wing keep up a constant chirping, and occasionally a sudden jarring cry may be heard: as this is usually followed by a rapid deviation by the flock from its course, it has been thought by some observers to be nothing less than a word of command; but I have lately been able to account for it, almost completely to my satisfaction. On watching with a little patience, any person may see that simultaneously with the utterance of the peculiar sound, one bird makes a rapid dart towards a near neighbour, and the two, in their excitement forgetting to direct their course aright, depart from the common track, thus leading the whole flock astray, for birds upon the wing are always ready to imitate any sudden movement upon the part of an object near them, whether the latter be a stone thrown among them or one of their number falling to the ground. That the note in question is sometimes one of anger I have repeatedly observed when two birds were quarrelling over their food; but it must also have some other meaning, for it is uttered in chorus by the whole flock during the performance of those rapid wheels close to the surface which I have above attempted to describe. Seen against a dark hill-side or a lowering sky, a flock of these birds presents an exceedingly beautiful appearance, and it may then be seen how aptly the term "snow-flake" has been applied to the species. I am acquainted with no more pleasing combination of sight and sound than that afforded when a number of these birds, backed by a dark gray sky, drop as it were in a shower to the ground, to the music of their own sweet tinkling notes. Notwithstanding the many careful descriptions contained in various works, there is still much to be learnt regarding the changes of plumage which occur in this species.

Woodcock.—Woodcocks are very rare in Shetland. On the 3rd of November I saw one rise from among some dead leaves in the garden at Halligarth. This was during rather rough weather from the N.E.

Water Rail.—On the 7th of November, during a strong N.E. wind, a pair of water rails visited that same angle of the walk to which

I have before alluded (Zool. 9095) as being a favourite resort of this species, and there they still remain, only venturing forth upon the grass very early in the morning or in calm bright weather. Sometimes, though rarely, one may be seen walking along the top of a wall; but the slightest sound is always sufficient to cause it to drop into the bushes and weeds below. A dog will sometimes put them up, and upon such occasions I have seen them fly for about a hundred yards, keeping at the height of about twelve or fourteen feet above the ground, seldom higher. After having been thus disturbed they always alight in some place of concealment, such as the mouth of a drain or a mass of tangled herbage. They fly heavily, and seem to experience some difficulty in rising: on surprising one upon the snow, and compelling it to take wing, it is easy to trace for a short distance the marks where the snow has been brushed away by the tips of the wings. Some years ago a bird of this species eluded my search in a manner as clever as it was unexpected. Having seen it run beneath some weeds which overhung a frozen ditch, I endeavoured, by walking along the ice, to drive it to one end where there was no shelter, and so make certain of a shot. Some fine snow had drifted beneath the weeds, and it being easy to distinguish the single row of foot-marks leading in the desired direction, I followed up at a smart pace; but just at the time when the bird ought to have risen at the end of the ditch, to my surprise, there appeared a second row of foot-marks leading in a direction exactly opposite to the first. I turned and followed in all haste, but the cunning bird fairly outwitted me, for the track ended at the mouth of a drain, many yards beyond the point from which we had started. I afterwards had the curiosity to trace back the old marks, and then perceived that the bird had doubled as soon as the cover became insufficient, and that rather than expose itself to view it had deliberately run into the very face of danger, passing me within the distance of a foot, as if fully aware that the attempt, though hazardous, offered the only chance of safety.

Goldeneye and Great Blackbacked Gull.—Goldeneyes are still rather plentiful, but the rough weather keeps them confined to sheltered places. Some days ago I had a long shot at one, which, instead of falling immediately, flew for about two hundred yards to seaward, and then alighted. Seeing that it allowed itself to drift with the tide, I concealed myself at a distant point, which it would evidently have to pass with sufficient nearness to receive a second shot. However, on nearing the point it frustrated my kind intention by swimming off in great haste, as though aware of the danger. At that moment three

immature great blackbacked gulls came sailing over, and, greatly to my surprise, one of them made a sudden stoop at the goldeneye, which, being wounded, failed in an attempt to dive, but almost at the same instant the gull seized it by the upper part of the neck, and, after having risen for a few feet, let it fall back into the water. Another of the gulls then seized it, and repeated the same process twice, and then as their—I mean *our*—unfortunate victim lay dead, with its breast uppermost, all three commenced charging at it with their bills, tearing out the feathers at each stroke. They paid not the smallest regard to my shouts; but when, not relishing the idea of losing my specimen, I fired a barrel in their direction, they made off, leaving the duck to drift ashore about three quarters of a mile further up the voe. Gulls of all kinds are so frequently seen flying over goldeneyes and various kinds of ducks without attempting to molest them, that this occurrence is not a little remarkable, and I can only account for it by supposing that the blood upon the wounded bird was the cause of attraction. The great blackbacked gull is not at all particular in its choice of food; it seems to prefer carrion to almost everything else, and the natives of these islands assert that "it will even feed upon a human." I have heard of a Shetlander, who, having climbed to the nest of a bird of this species, in order to take the young, found a man's finger, which had been brought to them as food.

Snipe.—On the 19th of November, a calm day succeeding a series of extremely heavy gales, I went into the island of Balta for the purpose of shooting snipe, and although fully expecting to find them in some abundance, was scarcely prepared to meet with them in flocks. As soon as the first shot was fired, seventy individuals at the very least rose almost simultaneously from a small marshy piece of ground about twenty yards square. They broke up into several parties, soaring high and wildly, and I took advantage of this to form an estimate of their number: this I did with care, well knowing how apt one is to form an exaggerated opinion in similar cases. The unusual length of the grass was the probable cause of the gathering, and the situation of the spot was well calculated to afford them abundance of food as well as shelter. There were other, but much smaller, flocks in various parts of the island.

Teal.—Teal are not very common here, although a few occasionally remain to breed. They usually occur in spring, but I have lately seen several small parties upon the lochs.

Glaucous Gull.—On the 22nd of November about a hundred and forty glaucous gulls flew over, in the face of a gale from the S.E. The greater number consisted of young birds.

Lapwing.—Lapwings disappear from Unst soon after the close of the breeding-season; but on the 26th of November one suddenly appeared in this neighbourhood, having probably been driven over by a severe gale from the S.E. This is the only occasion upon which I have seen it here in winter.

Twite.—Twites are in very large flocks, and although their notes passed almost unheeded while the lively wheatears were with us and the sky larks were in full song, they are now a great relief to the dead silence of a Shetland winter. These hardy little birds seem to be in a constant state of happiness, and to be able to enjoy themselves under almost any circumstances. Even in deep snow they are to be seen picking up a meal in situations where the lazy sparrows starve, while at the same time every individual is heard giving utterance to a lively twittering note, which may, by a very slight stretch of imagination, be interpreted into one of contentment and mutual encouragement. Although so busily occupied, they are not forgetful of what is passing around, and it is amusing to observe how instantly every sound is hushed, and how closely they crouch to the ground the moment a hawk appears in sight.

Sky Lark.—Very few sky larks are to be seen this winter, although food is still abundant.

Greenfinch.—During the early part of November greenfinches arrived in immense flocks, which were chiefly composed of females and young birds, although there were many fine old males among them. Up to the 28th of last October only one individual of this species had been known to occur in Unst. Very large numbers roosted in the garden even a few nights ago, and many were captured as they flew against the windows after dark. None of the inhabitants to whom I have spoken upon the subject have seen this bird before, except one of the sages of Baliaster; but as he once solemnly assured me that he had seen a flock of canaries in his corn-yard, I may be excused for doubting the accuracy of his statement in the present instance.

Chiffchaff.—The chiffchaff which arrived on the 30th of October remained until the 20th or 21st of November, when it disappeared during a steady east wind.

Shag.—The shoals of sillocks which have appeared in the voes, are attracting the shags in great numbers. It is a common sight to see a hundred or more of these birds assembled in one spot. An adult which I shot on the 19th of November had one of the secondaries pure white.

Kittiwake.—Kittiwakes are unusually numerous this winter. They keep together in flocks, and are now always to be found where sillocks are most abundant. The greater number are adults.

HENRY L. SAXBY.

Baltasound, Shetland, November 30, 1864.

Ornithological Notes from Beverley, East Yorkshire.
By W. W. BOULTON, Esq.

Wild Geese.—I observed a letter in the 'Times,' last month, from the Rev. F. O. Morris, in which he remarks the unusual scarcity of wild geese seen in or passing over the district in which he resides (Nunburnholme, near York). I can bear out this remark to the letter, having only heard or seen a single flock, which passed over Beverley one dark December morning, flying so low as to render their colouring quite distinct. This appears the more remarkable, as we have the sea on one side, the Humber on another side, and the Wolds (their favourite feeding-grounds) on a third side of us; so that we naturally might expect to see and hear many during each season. Indeed I never recollect a year, before the last, to have passed away without recognizing over and over again their noisy and striking flights to and from their feeding-grounds. Often, too, have I paused, on my evening rounds, to enjoy their incessant cackle overhead, long after their shadowy forms had been rendered invisible by the shades of night. Several geese, both whitefronted and bean geese, have been shot by the punt-men on the Humber, and, I understand also, an unusual number of wild ducks, pochards, &c. The whitefronted goose (*Anser albifrons*) is not often met with in this neighbourhood; but during the present season of 1864-65, several have been shot on the Humber, one of which, a well-marked old female, I had the pleasure of examining at Mr. Richardson's, of Beverley, to whom it had been sent for preservation.

Late Swallows.—I see in the January number of the 'Zoologist' (Zool. 9418) two notices of the unusually late sojourn of this most exquisite migrant in different parts of the country. I never knew swallows remain with us so late as they did during the autumn of 1864, although their presence was occasional and exceptional, and not the rule, the main body having left us somewhat earlier and more suddenly than usual. Most, if not all, of the late birds were birds of the year. Both Hirundo rustica and H. urbica, in several instances, which

I will record, remained with us very much later than I have previously known them. Thus I saw several specimens of both these species (eight and ten together at a time), close to the town of Beverley, during the last week of October. Two or three specimens of H. rustica were seen by Mr. F. Boyes, of Beverley, on the 7th of November, hawking over the "Pits" on Westwood, Beverley. One specimen of H. rustica was seen at Leven, near Beverley, by J. Hudson, gamekeeper, on the 14th of November, and was reported to me by himself on the same day; and one was seen as late as the 21st of November close to the town of Beverley, and flying over the same Pits as those seen by Mr. Boyes on the 7th of November, and by myself in the last week of October.

Kingfisher (Alcedo ispida).—The warning voice has already sounded, "Ladies, beware, or your insatiable thirst for variety, fashion and bright feathers will ere long render this charming British bird a rarity." Notice after notice appears in the daily papers, revealing the sad fact that the kingfisher is being shot down by dozens and scores for the sake of its gorgeous plumage, which has become "the thing" amongst fashionable ladies for the hat. Far be it from me to rebuke the gentle daughters of her without whose presence Eden was not perfect. It is the fashion that ensnares them (little heeding how its toils too often blight both Nature and themselves) I so deeply regret, and would rebuke. How great a loss to the true lover of Nature the absence or even scarcity of this very "meteor of the stream" would be, I leave ornithologists severally to determine. Fishing by the silent pool, or glancing along the rippling brook, more like a wanderer from some brighter clime than ours, than one of our own native birds, whose songs are usually more attractive than their hues, this truly British bird at once equally attracts, startles and charms all observers. In some parts of Ireland, I believe the kingfisher has long been extremely rare. I recollect, fifteen or sixteen years ago, that my father used to collect several skins each year to send with his annual "Christmas box" to a favourite old boatman at Killarney. This man informed us that it was almost impossible to obtain kingfishers in that locality, and that the beautiful blue feathers of the back and rump are invaluable in the manufacture of salmon-flies, and my own observations would tend to support this man's assertion, as I never saw a kingfisher on lake, river or stream, during a three weeks' tour in Ireland several years ago. In England, however, I never heard of their being particularly scarce until recently, and very much from the cause assigned already. In this neighbourhood the kingfisher is still plentiful, and long may it remain with us undisturbed. As an evidence of its comparative numbers in

this locality, I would remark that my birdstuffer, Richard Richardson, had seventeen specimens sent to him for preservation during the past year, 1864, and it must be borne in mind that we have very few collectors in the town and neighbourhood, and fewer still who consider the kingfisher worth the cost of stuffing. I had sent me the other day the most splendid specimen of this bird I ever saw. Judging by its unusually long bill and the orange-red colour of the lower mandible, by the almost white paleness of the chin and cheeks (or rather sides of neck), and the pale chesnut of the breast and body, together with the remarkably brilliant tone of the entire plumage, I concluded it must be a very old male. To my surprise, on dissection, I found it was a female, but so old that the ovary was quite shrivelled up, and presenting only faint traces here and there of the positions formerly occupied by the ova. I consider this to be an example, so often met with amongst birds, of the female, in extreme old age, assuming more or less the plumage and appearance of the male.

Curious Variety of the Hedge Accentor (Accentor modularis).—On the 21st of December last I received a curious variety of the hedge-sparrow, in the flesh, from T. Kemp, gamekeeper, of Skerne, near Driffield. He had shot it the day before in the immediate vicinity of his own residence. It was of a rusty buff colour throughout the entire plumage. Dissection proved it to be an old male. The bird was in excellent feather and condition. It is rather a remarkable coincidence that a specimen exactly similar in colouring was sent to me by the same man, who had shot it in the same neighbourhood, and about the same time, three years ago.

Goosander (Mergus merganser).—On the 5th of January, 1865, two goosanders were shot in this neighbourhood. I saw them both in the flesh. Both were young birds of the last season: one was a male, the other a female, and, as they were shot together, most probably were from the same brood. A few days subsequently a young male specimen was sent to me, living and uninjured: it had been caught by a little girl in a field, upon the farm of Mr. Beckett, Walton Abbey, near Beverley. These birds are ungainly and awkward, both in appearance and action, when out of their native element, and it would seem have comparative difficulty in rising from the ground, or the girl would never have captured an uninjured specimen. The situation in which the bird was found—on *terra firma* and at some distance from water—appears unusual. It is true that the River Hull and a tributary stream, Walton Beck, were within easy reach, and I suppose, therefore, the bird must have dropped from some cause during flight thereto, and not have

wandered on foot from the streams. This goosander was taken to a patient of mine, who, knowing my ornithological tastes, kindly endeavoured to keep it alive until an opportunity offered of sending it to me safely. When I did receive it, the poor bird had become sadly emaciated from want of proper food and necessary supply of water, &c. I placed it in a retired and shady aviary, supplied it with fish and plenty of water, and soon had the satisfaction of seeing it both eat and wash. The bird did not appear nearly so shy as I should have imagined from its habits and wild nature, and had it lived I am convinced would ere long have become quite tame and domesticated. It never recovered its strength, and died two days after I received it, to my surprise, as I quite hoped—from its contented way of appropriating the food and bath prepared for it—to have preserved this interesting bird for future observation. Its mode of progression on land was slow and ungainly, owing to the very backward position of the legs. It waddled more decidedly than a domestic duck, and if its movements were quickened to a run, impelled by fear, &c., it would often stumble and fall forward on its breast. In the water its movements were as much the opposite, *viz.* both easy and elegant. On land, when standing, the legs were perfectly straight, the knee-joints being bent as much forward as possible, and the body was carried at right angles to them, as in the domestic duck. The neck was generally retracted, so as to give the bird the appearance of having none at all: in this attitude the head, seemingly resting on the back, would peer about with never-ceasing vigilance; if the restless hazel eye detected me, the bird would swell out the elongated feathers on the cheeks and sides of the neck, as though in disapproval or fear of my presence. If a stick were pointed at the bird, it would snap at it in anger, and erect the same elongated feathers of the face and neck. In feeding it seemed carefully to wash each mouthful in water, dashing it from side to side before finally swallowing it. After feeding, washing and preening the plumage, it would retire into a dry, darkened house, and there sit for hours, if undisturbed, on the sandy flooring.

PS.—Richard Richardson, my birdstuffer, has just informed me, since penning the above notes, that whilst skinning the goosander I had alive, a small shot-corn fell from the skin upon the table. He could find no mark of internal injury resulting from shot, nor could I detect, during life, any blood on the plumage, lameness or other mark of injury. Still it is quite possible that the bird had been wounded in some part we had failed to discover, and if so the fact would account for its easy capture, and the unusual situation in which it was found.

Blackthroated Diver (Colymbus arcticus).—On the 13th of January, 1865, Mr. Jones, of Bridlington Quay, sent me a fine old female specimen of this scarce diver, in the flesh. He shot it on Bridlington Bay so shortly before sending it off to me, that I positively received it within an hour of its death: I have never seen a finer specimen. On dissection, the various sizes of the ova indicated both its full maturity and the fact of its having bred, which suppositions the perfect and glossy plumage would tend to sustain. I have in my collection a fine old male of this species, which was shot on our own River Hull, not far from Beverley, about twelve years ago: its throat is mottled with white feathers, interspersed, like snow-flakes, amongst the black. The bird was shot by Joseph Owen, of Beverley, and is the only instance I have ever heard of, or known, of the occurrence of the blackthroated diver on the River Hull or any other stream near Beverley.

Great Blackbacked Gull (Larus marinus).—On the evening of the 17th of January, Henry Cassell, of Grove Hill, near Beverley, brought me a splendid specimen of this fine gull: he had shot it on the afternoon of the same day, as it sailed leisurely over his garden on the bank of the River Hull. Dissection proved it to be an old male: its stomach contained the entrails of some animal about the size of a hare or rabbit, and, as they were partially decomposed, I have little doubt that the gull had been feasting upon the remians of one of these animals it had found dead. The bird was alone when shot. I never knew the great blackbacked gull visit our river before, either in its mature or immature plumage: they are tolerably abundant on the east coast of Yorkshire, and are occasionally shot both at Bridlington and Filey; but even on the coast they are not so often seen as the lesser blackbacked gull. The largest gull I had seen, up to this date, shot on our river, was an immature specimen of the herring gull, shot during the autumn of 1864, by Mr. F. Boyes, of Beverley. Vast flocks of gulls visit the wolds and carrs of this Riding: I have seen many hundreds together hunting for worms on our own beautiful common, Westwood. Numbers, too, on the wolds following the plough, after the manner of rooks, eagerly feeding on the worms and grubs turned up by the share on the new fallows. But these gulls are invariably either the common gull (*Larus canus*), the kittiwake gull (*L. tridactylus*), or the blackheaded gull (*L. ridibundus*). The great blackbacked gull I have never before met with nearer to Beverley than the eastern coast of Yorkshire.

Leach's Petrel (Thalassidroma Leachii).—In the January number of the 'Zoologist' (Zool. 9419) I find recorded, by Mr. J. H. Gurney,

the capture of this rare petrel at Worthing. Under the impression that every capture of so rare a bird may prove of interest, I beg to record the fact of a specimen having been taken close to Beverley, some years ago, which is now in my collection, and is the only specimen I have seen or heard of captured in this Riding. My specimen was taken alive by some drainers as it was flapping helplessly exhausted in the mud of a "grip" near to Bentley Wood, about two miles from Beverley: this was in the autumn of 1854. It was killed, and taken, in the flesh, to J. P. Martin, of Cottingham, gamekeeper to Mr. Ringrose, of that place, from whom I bought it, and heard the details of its capture.

Wild Swans.—On Saturday morning last two wild swans passed over Figham, one of our common pastures, and close to the town of Beverley: they were flying in the direction of the River Hull, but must have passed over it, as I have not since heard of them, and there were several shooters up the river on that day. This is the first instance during the present season of the wild swan having appeared in the neighbourhood of Beverley.

W. W. Boulton.

Beverley, January 30, 1865.

Ornithological Notes from Norfolk. By Henry Stevenson, Esq.

During the first week in November a Sclavonian grebe, in winter plumage, was shot at Surlingham, and a gray shrike somewhere in the county. On the 14th a common dipper was killed near Buxton Mills, and was presented to the Norwich Museum: on dissection I found it to be a male, and the stomach contained only fragments of the legs and elytra of a small water beetle and Notonecta. A bittern for sale in our fish-market on the 19th. Woodcocks have been unusually plentiful on our coast this autumn, and at least one hundred couples have been killed in some favourite coverts near the sea, belonging to Lord Hastings: amongst them was a curiously pied variety, having all the primary quills in the right wing pure white, except the fourth; the wing-coverts on that side also white; in the left wing the three first quills and one or two covert feathers only were pure white: the rest of the plumage as usual. On the 21st a forktailed petrel was picked up dead at Bradenham, evidently driven inland by the severe gales which prevailed about that time: it proved to be a young male, and its starved condition and weather-beaten plumage told a sad tale of privation.

December 11. Saw a flock of twites near the city, and some half dozen were netted a few days later: these birds are rather uncertain winter visitants in Norfolk, and are never, I think, very plentiful: I have not noticed any, or heard of them in our bird-catchers' hands, since the winter of 1861. Siskins and redpoles, both lesser and mealy, have been very scarce this season. Several fine bramblings have been brought in lately to be stuffed, and are in perfect winter plumage.

An extremely dark variety of the barn owl, a female, was shot near Norwich, on the 13th, and is particularly interesting from its resemblance, in colour and markings, to a specimen in the Raptorial Collection of the Norwich Museum, presented by Professor Reinhardt. Of the latter the Professor writes, in a letter to Mr. A. Newton (October 9th, 1860), "The bird is from Fyen (Fünen), but it is, I think, no peculiar race, at least not peculiar to the said island, where the bird is rare; I should rather suppose that all the examples of Strix flammea from Sleswig-Holstein and the northern parts of Germany are nearly as dark beneath as the specimens you saw in Copenhagen." Our Norfolk example of this singularly dark variety, which it is quite possible may have come across from the Danish locality referred to by Professor Reinhardt, has the whole of the lower surface of the body rich reddish fawn-colour; the facial disk rusty red, becoming grayish white only near the outer edge, with the upper portions of the plumage ash-gray spotted as usual, but with very little intermixture of buff.

On the 15th of December a young carrion crow was killed out of a flock of rooks, near this city, an old rook being killed at the same discharge of the gun: these birds evidently associate with the rooks at this season, and their doing so will account for the statements of some individuals, that rooks have been seen to leave their companions when on the wing, to pursue some small bird with carnivorous intentions. A bittern was shot out of some reedy ponds at Hempstead, near Holt, on the 16th. On the 17th a male gray phalarope was sent me from Salthouse beach, a very favourite locality for this species; and on the 21st I purchased, in our fish-market, a magnificent old male velvet scoter, caught alive that morning (having been previously wounded) on the beach at Sherringham, and others were seen at the same time: the colour of the beak and legs in this specimen, when I first saw it, was lovely in the extreme; the former rich orange-red and the latter vermilion, with the webs dark chocolate-brown: the nail of the beak was also of the most delicate pink, and the eyerids pearl-white. Two

or three female goosanders have been lately killed, and as many female smews, but the weather has not been sharp enough to bring any old males. A graylag goose (rare) was killed, about the 15th, at Horsea, near the sea. On the 27th a young male northern diver was killed at Wells, and a bittern at Burgh, near Yarmouth. On the 30th a few old male scaups and tufted ducks were in the market, but no rare fowl up to the present date, with the exception of the velvet scoter.

January, 1865. A female variety of the common blackbird was shot near this city, during the first week in January, having the head and neck light buff-colour, the wings and tail white, and the rest of the plumage grayish brown. On the 8th a quail was killed at Besthorpe: a few of these birds certainly remain with us throughout the year in favourable localities. On the 10th a gray phalarope was killed at Hasborough, on the coast. On the 21st a young redthroated diver, with other fowl, in the fish-market; a bird of the year. On the 14th a fine bittern, and another on the 21st. Observed a large flight of pied wagtails, on the 22nd, in a turnip-field, where the roots had been left earthed up: old and young birds were running about together in considerable numbers, evidently passing to the southward, owing to the late severe frosts, which have "laid" all the smaller streams. A few more siskins were netted in this neighbourhood about the 24th. Redwings and fieldfares extremely plentiful, frequenting such trees in the hedge-rows as are literally covered this year with scarlet berries. On the 23rd a single red male crossbill was shot on Mousehold, near this city, the first I have seen or heard of this winter. On the 28th a magnificent pair of adult goosanders were killed at South Walsham, the first indication that the frost has begun to tell upon the wild fowl, as it usually takes several days of severe weather to bring the old birds of this species to our inland waters. Hitherto we have had but little fowl in our markets, including, however, amongst the more usual kinds, one or two old male scaups and goldeneyes. On the 30th a young male merlin, and on the following day an adult Bewick's swan, was exhibited in our market. I have seen no hoopers at present, but a much less degree of cold invariably brings the smaller species.

H. Stevenson.

Norwich, February 2, 1865.

Ornithological Notes from West Sussex.

By W. Jeffery, jun., Esq.

Golden Plover.—The flat tract of land between the South Downs and the coast has, during the month of January, been visited by golden

plovers in greater numbers than for many years past. The golden plover is only a winter visitor in Sussex, and the time of its coming uncertain. The first note that I have of them this winter is, "January 2nd, about thirty seen with some peewits;" but I remember having seen a little bunch with the peewits once or twice in December. From the 2nd to the 7th they continued to augment, and by the latter date a hundred and fifty or two hundred might have been seen in a flock. After this they disappeared, and I saw nothing of them until the 24th; from this to the 30th they were very plentiful, and I have been told that in a district south of Chichester, called the Manhood, as many as a thousand were seen together.

Peewit.—Very few peewits with us now. I think most of these birds cross the channel before the winter sets in. In November and the early part of December there were some large flocks about in the open fields; but since then I have only seen now and then a small flock of perhaps twenty to fifty birds.

White Peewit.—A specimen nearly white was shot in the neighbourhood of Petworth on the 24th. The head and neck are of the usual colour; some of the primaries white and others mottled; the tail the usual colour, excepting one feather, which is white; and nearly all the rest of the plumage is white.

Dunlin.—January 30. Saw a large flock of dunlins in a field with some golden plovers: this was nearly a mile away from the sea, and about the time of high tide.

Greenfinch.—January 15. Saw an immense congregation of these birds under some yew trees at Kingly Vale: the noise made by their wings, as a lot of them flew up, first attracted my attention: they were feeding on the seed of the yew.

Linnet.—Only here and there a little party to be met with. They appear to feel the effect of the cold weather more than many of the soft-billed birds. The gizzard of one examined was full of seeds, I think principally small dock-seeds. The gizzards of two reed buntings (*Emberiza schœniclus*) contained dock-seeds, but larger than those found in the gizzard of the linnet.

Fieldfare and Redwing.—Fieldfares and redwings have been very tame lately, frequenting the lowlands; they left them, however, as soon as the hills were clear of snow again, and on the 31st scarcely a fieldfare was to be seen, and not many redwings. The redwing has, on the whole, been rather more plentiful than usual this winter. The gizzard of a fieldfare killed on the 28th had two small brown coleopterous insects in it.

Stonechat and Whinchat.—I was surprised on reading Mr. Gunn's note (Zool. 9455) to find that the former bird is rare in Norfolk during the winter months, and that the latter *is* met with at that time of the year. The stonechat remains in Sussex the whole year, and is, I think, as numerous in winter as in summer: I have seen several during the late frosts, and they do not care much about the cold. The whinchat, on the contrary, I have never seen in the winter; they come here in the spring, breed on our downs, and leave again in the autumn with the rest of the summer visitants.

Meadow pipits, gray wagtails and pied wagtails stay the whole winter with us. The pied wagtail seems to feel the cold very much.

I saw three birds on the 28th, which puzzled me; the first rose from a flock of sheep in a meadow. The note was one which I had never heard before, a sort of "che, we, chee, awee," a clear whistle, not unlike that of the green sandpiper, uttered frequently as the bird was flying away. I afterwards found two others with a flock of larks. They were about the size of larks, but the wings appeared to be shorter, as they were flying. Is the note of the snow bunting anything like this? I think they must have been either buntings or finches. It was scarcely light enough to see their colour or markings.

W. Jeffery, Jun.

Ratham, Chichester, February 4, 1865.

Erratum.—There is an error in the first line of page 9450 of the 'Zoologist': for "sombre" read "imber"—the name given by some of the earlier authors to the young of the great northern diver.

Ornithological Notes from the Isle of Wight.

By Captain Henry Hadfield.

Though few water-fowl were observed on our coast during the early part of the winter, which was unusually mild, the severe and stormy weather which ushered in the new year brought us a good sprinkling of wild fowl, some of rather rare occurrence.

Great and Lesser Blackbacked Gulls.—Were seen on the 13th of January, during a gale, flying about the Brading Marshes.

Gannet.—Many seen off the coast about the middle of the month. [An unusual number of gannets have been observed in the Channel during the last ten weeks.—*E. N.*]

Curlew and Godwit.—Seen about the Brading Marshes.

Brent Goose.—Has been seen in considerable numbers for some weeks past.

Wild Duck.—Though not very plentiful, a large flock was seen off Sandown, within rifle shot, early in the month.

Scoter.—Frequently observed at sea.

Crested Grebe.—Seen off Shanklin.

Great Northern Diver.—Seen off Sandown on or about the 20th of January. This bird being rather a rare visitant here, I have been particular in my inquiries regarding its identity, and there can be no doubt of its having been seen, as one of my informants, though not a professed ornithologist, has a good knowledge of birds. It was shy and wary, keeping out of gun-shot.

Redthroated Diver.—Three of this species were shot off Shanklin on the 23rd of January: one was considerably smaller than the others, and the plumage less pure; but on none of the three was there the least appearance of red about the throat; consequently must be birds of the season.

Sparrowhawk.—In a long walk over the downs on the 20th of January, I saw but one of these hawks. I observe in the notes from Scilly, in the 'Zoologist' (Zool. 9450), that sparrowhawks were seen "cruising about after the starlings:" this may account for the latter species being "remarkably scarce" there; but I never knew them to be preyed on here, and Macgillivray, though giving rather a long list of birds eaten, does not include the starling; however, little birds being scarce in those treeless islands may account for its change of diet.

Stonechat.—Observed on the 20th of January. Sylvia rubicola being with us a regular winter resident, though by no means so numerous as during summer, it is somewhat surprising to find your Norfolk correspondent (Zool. 9455) considers himself fortunate in having secured two nice adult specimens, male and female, of this species, which seems in his locality to be as rare as the whinchat, if not more so, as the latter appears to have been twice seen, namely, in January and again in November, 1864. It is to be regretted that a specimen was not procured, particularly as one of those he observed in November was seated within a few yards.

Blackheaded Gull.—On the 23rd of January a large but scattered flock of these elegant gulls was seen near the village of Lake, soaring with buoyant flight over the ploughed lands, but invariably wheeling round when within seventy or eighty yards of one. They would occasionally settle down in the furrows to pick up the grubs and

worms, but more frequently, with wings half closed, merely touching the ground, from which they seemingly rebound, so light and buoyant are they. On returning to the spot, about three hours later in the day, found them as busy as ever.

Crested Grebe.—Seen off Shanklin.

Cormorant.—This species has frequently been observed passing and repassing, in its regular and diurnal flight from the roosting-station at the Needles to its feeding-ground off Bembridge.

Raven.—Have noticed but few during the winter, and those single birds. It is by no means so common a species in the under-cliff as formerly, when our lambs and sickly sheep suffered from their attacks. A solitary pair bred in the high cliffs between the Luccombe and Shanklin Chines till within the last year or two, but they now build in the Culver Cliffs.

Gray Wagtail.—This species has been frequently observed, the late snow-storms and inclement weather having doubtless driven them to the under-cliff. On the 1st of February I saw a couple, apparently paired, flying about the Bonchurch Pond, and chasing each other from tree to tree, and perching on the branches, regardless of my presence, though standing within twenty yards of them. The gray wagtail is, I think, more arboreal than the rest.

Widgeon and Teal.—Seen in the Bembridge and Brading Marshes.

Rook.—On the 9th of February observed rooks busily engaged in and about their nests in a grove of lofty trees at Yaverland. Many of our elms must be of great age; for instance, those in the village of Bonchurch remain, to all appearance, as they were fifty years ago.

HENRY HADFIELD.

Ventnor, Isle of Wight,
February 11, 1865.

Rednecked Grebe near Leeds.—A specimen of the rednecked grebe (*Podiceps rubricollis*) was brought to me yesterday: it had flown against the telegraph wires, but was apparently uninjured; it is, at all events, very lively, and has eaten this day two sparlings and four sprats. A few weeks ago I had a woodcock brought me, which had killed itself by flying against the wires near the same place; and, not long ago, a spotted crake under similar circumstances.—*W. Christy Horsfall; Horsforth Low Hall, near Leeds, February* 15, 1865.

Sclavonian Grebe at Fern Island, Northumberland.—I have just obtained a specimen of the Sclavonian grebe, which was shot by a boatman on the Fern Island, Northumberland, last week. It is a female, weighing eleven ounces, and measuring thirteen inches from tip of bill to tip of tail.—*Charles B. Hodgson; Hunton Hill, Slade Lane, near Birmingham; February* 16, 1864.

Bonaparte's Gull in Falmouth Harbour.—I took the opportunity yesterday, when at Falmouth, to examine the specimen of the above small gull which is in the possession of Mr. James Couch, hairdresser, Church Street. It is in fair preservation, and it is as nearly as possible the counterpart of the bird figured in Yarrell's Supplement: the only point of difference appeared to be that there was no smoke-gray colour over and behind the eyes, which appears in Yarrell's plate: the only spot of this colour was on the ear-coverts, as shown in the plate: there was a sort of *sub-tone* of light blue on the head, which perhaps denoted the seasonal change to which it is subject. The weight was 7 ounces; length 14 inches; shoulder to tip 10 inches; width, full, 29 inches; wings over tail 1½ inch. The bill is longer than in Larus minutus, and rather less stout. The bird is itself altogether larger, being four inches longer than the little gull.—*Edward Hearle Rodd; Penzance, February* 8, 1865.

Proceedings of Societies.

Entomological Society.

Annual Meeting, January 23, 1865.—F. P. Pascoe, Esq., President, in the chair.

An Abstract of the Treasurer's Accounts for 1864 was read by Mr. Wilkinson, one of the Auditors, showing a balance in favour of the Society of £71 11*s.* 11*d.*

The Annual Report of the Council was read by the Secretary.

The President nominated Messrs. Walker and Wilkinson to act as scrutineers of the ballots.

The following gentlemen were elected to form the Council for 1865 (namely), the Rev. Hamlet Clark, Messrs. Dunning, M'Lachlan, Moore, Pascoe, W. W. Saunders, Edwin Shepherd, A. F. Sheppard, Edward Sheppard, F. Smith, Stainton, S. Stevens and J. J. Weir.

The following gentlemen were elected to the following offices respectively (namely), Mr. Pascoe, President; Mr. S. Stevens, Treasurer; Messrs. Edwin Shepherd and Dunning, Secretaries; and Mr. Janson, Librarian.

The President read an Address, at the conclusion of which a vote of thanks to Mr. Pascoe for his services as President and his conduct in the chair was carried by acclamation, and a request was preferred that the Address then delivered might be published in the 'Journal of Proceedings.' Mr. Pascoe returned thanks, and acceded to the request.

A vote of thanks to the other Officers and Members of the Council for 1864 was duly proposed, seconded and carried; and was acknowledged by Mr. S. Stevens.

A vote of thanks to Mr. Dunning, for the assistance given by him towards the publication of the 'Transactions,' was proposed by Mr. Wilson Saunders, seconded by the Rev. H. Clark, and carried. In replying thereto, Mr. Dunning took occasion to remark that a considerable diminution of the cost of publication might be effected if authors would take the trouble, in the first place, to write their papers more legibly, and, in the second place, to revise the MS. instead of the proof-sheets; the sum charged for "corrections" during the past year was sufficient to have paid for the printing of another Part of the 'Transactions.' He would also suggest that authors should write their papers before they read them; it was becoming far too frequent for

Members to profess to read papers of which fragmentary portions only were actually in existence, and months often elapsed before the Society was able to obtain possession of the complete MS. in a fit state to send to the printer. For the last-mentioned grievance the Secretary had the remedy in his own hands; and he announced that in future no notice whatever, in the Minutes or otherwise, would be taken of any paper of which the MS. was not delivered to the Secretary at the time of the author's reading or professing to read such paper.

February 6, 1865.—F. P. Pascoe, Esq., President, in the Chair.

Mr. Pascoe returned thanks for his re-election to the Presidency, and nominated as his Vice-Presidents, Messrs. Stainton, W. W. Saunders and Frederick Smith.

The President announced that, through the liberality of Mr. W. Wilson Saunders, the Council was able to offer two Prizes, of the value of Five Guineas each, to be awarded to the authors of Essays of sufficient merit on subjects connected with Economic Entomology. Further particulars would be given at the next Meeting.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'Mémoires de l'Académie Royale des Sciences, des Lettres et des Beaux-arts de Belgique,' Tomes xxxii.—xxxiv.; 'Bulletins de l'Académie Royale des Sciences, des Lettres et des Beaux-arts de Belgique,' 2me Series, Tomes vii.—xvii. 1859—64; presented by the Academy. 'Bulletin de la Société Impériale des Naturalistes de Moscou,' 1863 Nos. iii. and iv., 1864 No. i.; by the Society. 'Mémoires pour servir a l'Histoire Naturelle du Mexique des Antilles et des Etats-Unis. Par Henri de Saussure. IIIme Livraison. Orthoptères—Blattides;' by the Author. 'Proceedings of the Royal Society,' Vol. xiii. Nos. 66—70; by the Society. 'Journal of the Proceedings of the Linnean Society (Zoology),' Vol. viii. No. 30; by the Society. 'The Zoologist' and 'The Entomologist' for February; by the Editor. 'The Entomologists' Monthly Magazine' for February; by the Editors.

Exhibitions, &c.

Mr. Brewer exhibited Corticaria truncatella of Mannerheim, a beetle new to Britain, of which he had captured a considerable number of specimens, and Ceuthorhynchus biguttatus, a rare British weevil; both species were taken at Worthing, at the roots of sea-side plants.

Mr. Bond (on behalf of Mr. Rich, who was present as a visitor) exhibited further specimens of the Hepialus from the Shetlands, of which some were shewn at the previous January Meeting; also examples of Bombus Smithianus of White, a species hitherto found only in those islands.

The President made some remarks on the geographical range of the genus Cossyphus. It had occurred in Portugal, Spain, Sicily, the Morea, Algeria, the Canaries (not in Madeira), India, as far as Rangoon, but not in the Indian isles. Singularly enough, however, a species closely allied to that from Rangoon had been taken at Gawler, South Australia.

Prof. Westwood was able to add another locality to this list, for he had received a fine large species from Zambesi.

Major Cox sent for exhibition a portion of a wooden dog-kennel infested with the dog-tick, Ixodes plumbeus; the specimens were very numerous, and during the exhibition copulation was freely indulged in. A specimen of a Cimex, apparently new, was also discovered on the wood. The Major communicated also the following note:—

"My attention has been lately called to the attack of a parasite, which has seriously infested the skin of dogs of my kennel: I believe it to be the Ixodes Ricinus. The skin of all my dogs, as well puppies as grown up ones, has been perfectly spotted by the immense number of these creatures. My ferrets have likewise been attacked. On applying the proper remedies, my man requested me to examine the kennels: I have three large separate ones, and also a range of buildings, twenty-four feet long, divided into three compartments, built up of wood against an old brick wall, the flooring covered with cement: the first contains dogs, the second and third pheasants for breeding. In the two latter the surface of the wall between the bricks, wherever the pheasants could reach, is picked away in order to get at these insects. In all the courses of the bricks, in all the joints of the wood-work, and in the detached kennel which stood nearest to the building, I found the tick in every stage of growth in immense profusion. I at once referred to Kirby and Spence, to endeavour to obtain some information relative to the destructive habits of this peculiar class of insects; but beyond mentioning that they directly attacked sheep, dogs, &c., by inserting their serrated ponstellum into the skin and filling themselves with the blood of the animal, they say nothing of the injury they commit upon wooden buildings by working into the joints. Now it is to this point that I wish to call the attention of the Society.

"It will be seen, by the accompanying specimen of wood taken from the dog-kennel, how it has been destroyed. It is a question with me how creatures with a mouth so peculiarly formed could have carried on the work of destruction as they have done, for I found the whole of the roof of the kennel so injured and so thickly infested by them, that I had it at once broken up and burnt on the spot. Do they perforate the dry wood? and whence do they derive nourishment, for I believe they are suctorial parasites? or does the wood perish by the presence of their excremental matter, and so enable them to perforate deeper and deeper. The piece that I have sent up is a good specimen to show how much injury they may do; in it will be found the insect in all its stages, from the egg to its full-grown size; and, speaking of it in the latter condition, I was not aware until now that it presented its large sacculated form, except after feeding as a parasite upon the blood of some animal. I always considered it in its natural state to be a minute insect, the body of which became highly distended as it continued to derive nourishment from the creature upon which it was preying. I never made this class of insects my study, and therefore should be too glad to receive any information from my brother entomologists on this subject. On examining the piece of wood, I find there are several insects very much resembling the large gray tick; but as some of these insects possess six legs, I do not know to what species they belong, or in what condition they are. The egg is oblong, semitransparent, and of a dirty brown colour, laid in masses.

"Whilst writing this I have been informed of a gentleman who had a pack of harriers attacked in a similar way. A person in London was consulted in the matter: he came down, and on inspecting the wooden building found it very much infested with the tick; the greatest portion of it was, therefore, pulled down and rebuilt; but

in a very short space of time the new work was found to be infested as badly as the old; in fact, the portion that had been permitted to remain contained a sufficient brood to contaminate the recent structure. The dogs were nearly worried to death by these parasites, and it ended by the whole building being pulled down and burnt. I may mention that dogs and other animals infested by these insects can be easily rid of them by simply putting on a muzzle and washing them with a solution of arsenic (a weak solution) in soft soap, allowing it to remain on for a short time, and then thoroughly washing it out of the hair. Two applications will be all that are necessary.

"I have no doubt that in buildings slightly affected the insects may be eradicated by a similar process, but when once they have been allowed to propagate and enter the timber joists, nothing but the total destruction of every part contaminated will secure safety. Thus the whole of my range must come down and the wall be composted before I can erect a new kennel. From my own costly experience, and the instance above alluded to I may fairly place the Ixodes Ricinus amongst that class of insects which are indirectly injurious to man in the destruction of his property. I think this a question of more than passing interest, considering how seriously large flocks of sheep or kennels of dogs become affected, without our attention being properly directed to the cause whence the mischief arises. In some districts the tick is much more prevalent than in others; and, from what I have recently experienced, I have no doubt that the insects have been allowed to accumulate amongst the decayed wood of some of our half-perished homesteads, and as the flocks are constantly herded in them, and the sheep naturally rub against the sides, it is easy to conceive, when such a state of things exist as I have just witnessed, how soon a whole flock might become infested.

"I omitted to mention that, in places suspected of being infested, the joists should be examined during the hot sunshine, as these insects invariably come out to the edge of the cracks to bask in the warmth, when they are easily detected."

Mr. W. W. Saunders had seen Major Cox's kennel last summer, before the existence of the tick was known, and thought that the decay of the wood was attributable to dampness, and not to the Ixodes, which view was corroborated by the specimen of the wood which had been forwarded.

Prof. Westwood agreed that the destruction of the wood was not caused by the Ixodes, but probably by damp, with the assistance perhaps of some Oniscidæ. The exhibition was interesting, since it showed indubitably that the small brown creature, which had hitherto been regarded as the juvenile form of the tick, was, in fact, the adult male.

Mr. Rich mentioned that he had found ticks to be most easily destroyed by rubbing common grease into the skin of the dog or horse; a couple of applications would generally be found sufficient.

Paper read.

Mr. J. S. Baly read "Descriptions of New Genera and Species of Phytophaga."
—*J. W. D.*

Observations on Coronella austriaca. By Dr. Edward Opel, President of the Zoological Gardens, Dresden. Communicated by the Rev. W. W. Spicer.

The enclosed observations on our newest British reptile will, I think, be of interest to many readers of the 'Zoologist.' I have translated them from a monograph on the subject by my friend Dr. Opel, a distinguished naturalist, of Dresden, Saxony. I have omitted the first half of his paper, as it refers entirely to the anatomy of the Coronella and its osteological characteristics, as compared with those of the common snake. Not being a surgeon by profession, and therefore unskilled in the technical terms employed, I feared doing an injustice to the learned author's remarks.

W. W. Spicer.

Rectory, Itchen Abbas, Winchester, Hants.

Coronella austriaca, *Laurenti.*

(Coluber thuringicus, *Bechst.* C. lævis, *Merrem.* C. austriacus, *Gmel.* Zacholus, *Wagl.*)

It has been stated, but erroneously, that the male and female Coronella vary in colour. The only change that takes place is in connection with the casting of the skin. Immediately after that process the animal appears in its most brilliant colours, the dark markings standing out conspicuously from the bright blue ground of the body. The iris, too (which, as Lenz has justly observed in his 'Schlangenkund,' encircles the rounded pupil of the eye, and is broader and clearer above than below), is then lighted up with a deeper intensity of expression.

The brilliancy of the colours is, however, transitory; they begin to fade within six or seven days. The steel-blue ground is succeeded by a dirty brownish yellow; the black burnished markings become less clear, and the fiery appearance of the iris is dulled, though I never found that the organs of sight were covered by the peculiar bluish veil which precedes the epidermal changes of the common snake. As with all ophidians, when in captivity, the sloughing goes on comparatively slowly.

I have had numerous Coronellas in my possession, and one in particular I was able to make the subject of the closest observation for

nearly eighteen months. This specimen, a female, measuring twenty-three inches in length, I secured in the Fürstensteiner Grund, not far from Salzbruner (Silesia) on the 16th of August, 1857. In spite of its being closely packed in a tin case, which I carried for entomological purposes, I brought the animal to Dresden, after a journey of eight days from the time of its capture, in good health and without any signs of exhaustion. The ground colour of this animal was of the yellowish hue which usually precedes the casting of the skin: that process accordingly began within four days, but went on so slowly that more than once I assisted nature by removing the epidermis with a pair of pincers. From memoranda made at the time, I find, that the colouring of the new skin was by no means so bright and fresh as usual; and I see in this circumstance a confirmation of an opinion, which I have elsewhere expressed, that the pigment layer contributes largely towards the formation of the epidermis, and is itself renewed from within; for my snake, not having touched food for a long time previous to its sloughing, it follows that the vital operations were weak, and the secretion of pigment weak in proportion; hence the dullness of the colours beneath the epidermis.

Hybernation interrupted the casting of skin that should have followed, and it was not until the 18th of June of the ensuing year (1858) that the process occurred again; but this time it was both easier and quicker, the whole being finished by the 20th of the same month, as I had taken the precaution of having a number of rough objects placed in the cage for the animal to rub itself against. I should mention that the cage in which the Coronella was confined was provided with glass sides and bottom, so that all its movements could be carefully observed, without the animal itself being disturbed.

A third sloughing (the second of this year) took place on the 2nd of July, the Coronella having repeatedly taken food a fortnight previously. This time I allowed the animal a certain amount of freedom, having turned it loose in my study, to see if the process would be thereby facilitated. I noticed that it took advantage of every rough spot it could reach to rid itself, by rubbing, of the dried integuments with which it was encumbered. When about half the body was freed I observed it creep rapidly on to the support of a small round table, and then, insinuating itself with much exertion into the interstices of the wooden arched foot, in an instant it left its epidermis hanging in the narrow space. The whole affair, from the first splitting of the skin on the head to a complete renewal, occupied just three hours and a half. Owing to the continuous friction the cast skin was torn in several places, whereas, in the previous instances, it had come off entire.

The last sloughing commenced on the 14th of August, and proceeded just as quickly; indeed the animal became more than usually brisk after it, for it swallowed a small lizard the same day, and another larger one two days after.

I have besides repeatedly watched the casting of the skin in other specimens, which I have captured for anatomical purposes. There can be no doubt that, in the wild state, the first sloughing commences in April, as I myself observed in a specimen taken in that month; but in captivity this early sloughing does not seem necessary to the animal's well-being.

Immediately upon losing its skin follows a desire for food; at the same time the prisoner makes numerous attempts to escape, and is altogether restless and excited, though at other times it lies quietly in a corner of its cage. It is singular that Lenz, who possessed a perfect menagerie of ophidians, was never fortunate enough to see the Coronella take its food. I can affirm that the spectacle is exceedingly rare, for in one only of my numerous specimens have I observed the act, though in that one repeatedly. Wyder states that "the Coluber austriacus devours small lizards, round which it twines itself, crushing them after the manner of the great tropical serpents. Sometimes it seizes its prey by the tail, and if the latter breaks off it is swallowed at once. In captivity lizards are preferred to any other description of food." I can fully confirm this statement of Wyder. The animal, whose sloughing I have described above, is the only one I ever saw take its food. The first instance occurred in this way:—In the year 1857 I was in possession of such a number of snakes of various species that I was obliged to place my Coronella from the Fürstenstein Grund in the same cage with a blindworm (*Anguis fragilis*), which had been there for some time already. The two appeared to be good friends, and took no particular notice of each other. Both passed into their winter sleep as the cold came on, and, with the return of spring, again woke up and shared the cage in peace, coiled up together on the side where the sun's rays struck warmest. The Anguis ate freely of the earthworms offered to it, though all attempts failed to induce the Coronella to take any food. Small lizards placed near it were allowed to crawl away without notice, and even young mice were disregarded. One morning (May 9) I observed a great commotion in the cage. At this time the Coronella had not cast its skin, nor had it eaten anything for nearly nine months. The blindworm was striving to escape the fixed gaze of its companion, which was following it all over their prison. I placed some fresh water in the cage, and just at that instant

the snake threw itself with irresistible force upon the blindworm, fixed its teeth into its head, and, flinging fold after fold of its body round its victim, held it in a vice-like grip, exactly after the manner of the giant serpents of the tropics; so tightly indeed did it embrace the unhappy blindworm that the contents of the latter's intestinal canal were violently forced out and scattered over the glass sides. Each desperate struggle of the blindworm was followed by a closer grasp on the part of the Coronella, which looked exactly like a roll of tobacco, through which the extreme end of the blindworm's tail protruded.

The act of swallowing was very slow at first. Every contraction of the muscles of the throat and jaws was accompanied by a lateral movement of the head, the hooked bent teeth, first of one side, then of the other, catching a fresh grasp of the victim, and gradually drawing it in. The process of deglutition began at 9.30 A. M. and was not completed until 12.45. The blindworm was eleven inches long. The head alone occupied more than an hour. Even at one o'clock, when the Coronella opened its jaws wide, which it continued to do repeatedly after taking its food, I could still see the end of the blindworm's tail. The fact was it was too long to be taken in entirely, and therefore gradually slipped down, as the portion first engulphed was digested. After the meal was quite finished, the Coronella sought out the water, and seemed to take great pleasure in bathing, remaining in it for an hour at a time, no doubt to mitigate the great heat generated by its wonderfully active digestion.

After the sloughing of the 2nd of July I placed two blindworms in the cage; one was eleven inches long, the other six inches and a half. The animal looked steadfastly at them for awhile, made a few movements, and at once attacked the smaller of the two, killing and swallowing it, exactly as it had done the first one. The crushing process was in this instance more complete, because the prey was smaller and unable to offer any opposition. The swallowing occupied two hours and a half. On the 11th of the same month (that is, nine days later), the other was devoured. In its first assault on this one the Coronella missed its aim: immediately it drew back its head, raised it aloft, and then delivered a second stroke with incredible swiftness. The period of deglutition was four hours, from 5 P. M. to 9.

In order to see how it would set to work with a lizard, I placed a middle-sized Lacerta agilis in the cage on the 22nd. The Coronella attacked the little animal, but the latter managed by biting and twisting to throw off its opponent, upon which it seized the lizard by

the tail, which instantly broke off: without troubling itself, for the moment, about the owner of the tail, the Coronella gulped down the disjointed member, which was struggling actively, in consequence of muscular irritation, and once more started in pursuit of the maimed lizard. Again it failed in securing it properly, but caught it by the back of the head, and began swallowing it from there. As the hinder extremities were much broader than the fore part the act of deglutition took a considerable time, very nearly five hours, during all of which the lizard was alive, and active too, for it bit the snake internally, and compelled it at last to coil itself round, and so swallow the remainder. For some reason or other, perhaps from fatigue, it will be observed that the animal, in this instance, departed from its usual habit of twining itself round and strangling its prey; but I am certain that it does so destroy lizards before swallowing them. In fact, it was in this way that it killed the small one which was devoured on the 14th of August, one of the days on which it cast its skin, as mentioned above.

From this time to the day of its death, which occurred in March, 1859, the Coronella ate nothing more, though tempted with a variety of food: frogs, newts, &c., remained unnoticed and untouched. In this respect it differs from Tropidonotus natrix, whose diet consists mainly of these last-named animals, while it rejects lizards and blind-worms, or at least devours them only when pressed with hunger. Neither has it ever fallen to my lot to observe in the Coronella those peculiar convulsive movements of the muscles, caused by excessive irritation, which are not uncommon in Tropidonotus; nor, again, the ejection of the prey which it has once swallowed. In fact, I imagine, that this last circumstance never occurs with Coronella, owing to its slowness of deglutition and rapidity of digestion. The latter, indeed, is so active that I have known the portion of the prey enclosed in the stomach to be in a state of decomposition, while the other portion was still outside the jaws.

The crushing of its prey in the folds of its flexible body, previous to devouring it, is a necessity with the Coronella, as appears by a reference to the anatomy of its skull. So slight are the powers of expansion in its jaws that they may be considered as entirely wanting, when compared with its relative, Tropidonotus, nor has the skin the extraordinary elasticity which the latter enjoys. The structure of the Coronella might, therefore, be called imperfect, but that Nature, if she limits on one point, invariably makes compensation on another. Hence the singular flexibility of the Coronella's vertebral column enabling it to compress its prey and prevent its escape. Tropidonotus natrix has

not this advantage, but then its jaws open widely and the skin stretches to the very verge of bursting, thus giving it the power of completely enclosing and easily swallowing its victim; whereas the Coronella, if it could not enfold its prey, would be unable to hold it when seized, or effectually to resist its struggles. Should it be said that the viper has the same structure of the skull with the Coronella, and yet never crushes its prey, it must be remembered that, before deglutition, it invariably inflicts a fatal wound by means of its poison-gland; it can therefore afford to wait quietly until the venom has done its work, without the necessity of holding its victim either in its jaws or in the folds of its body.

As I observed just now, the Coronella bathes frequently and for long periods after each meal, either swimming on the surface or lying immersed. In either case it takes great care not to dip its head, excepting in very warm weather, and then, if the water be fresh, I have known the animal sink its head beneath the surface and retain it there for a quarter of an hour at a time, its cheeks all the while puffing out and again collapsing, like the gills of a fish. To ascertain whether this curious fact has anything to do with the act of drinking, I dissected one of my specimens immediately after it had taken a bath: however, a very insignificant amount of water flowed from the stomach and intestinal canal. That so small a quantity should be contained in the stomach I attribute to the absence of a broad tongue and the stiffness of the jaws. Lenz never succeeded in observing this fact, and had great doubts, in consequence, whether ophidians drink at all—an opinion which has been transferred to other works on the subject, that of Schinz, for instance.

The winter sleep of Coronella austriaca is neither so deep nor so long as that of many animals to which it is nearly allied. In both the seasons of 1857 and 1858 (neither of which, however, was very severe) I kept all my specimens of Coronella, Tropidonotus and Anguis in simple glass boxes, the bottoms of which were strewed with sand and sawdust. Not one of the Coronellas was in the least affected by the cold until it reached a mean of 20° (Réaumur), where it remained for several days; and they woke up immediately on being transferred to a moderately warm room; whereas the blindworms and lizards still continued in a torpid condition. Nor did the Coronellas, like their companions, bury themselves in the sand, but invariably lay stretched on the surface.

As in all the families of more highly organized animals, the characters of individuals vary amazingly. Speaking generally, Lenz

is right in saying that Coronella austriaca is irascible and ever ready to bite. (Wagler has, in consequence, named the genus "Zacholus," from the Greek, signifying "irritable.") While the two which I procured from Silesia never attempted to use their teeth, and were particularly gentle, suffering me to take them up, without making any effort to escape, others which I have had in my possession would bite at the finger on the slightest provocation, hanging on by their teeth, and it needed some violence to remove them. A drop of blood generally oozed from the wound, but I never found that the slightest inflammation or other ill consequence followed from the bite. One of my captives, a male, was so exceedingly irritable that the mere approach of any one to its cage would excite it, causing it to raise its head on high, open its jaws to their fullest extent, and utter a low but very perceptible hissing sound. From numerous experiments which I have made I can fully bear out the opinions already given by many naturalists, that neither mammals nor birds are in the least degree affected by the bite of the Coronella.

The vitality of C. austriaca is one of its leading characteristics. In the autumn of 1858 I was obliged to be absent from home for five weeks. As I had no one at that time to whom I could safely entrust my pets I determined to take them with me. I therefore packed them into a vasculum, which was attached to a knapsack, and used by me for collecting botanical specimens; and in this they travelled the whole time I was from home. They were not in the least affected by the close confinement to which they were subjected, but returned to Dresden with me in safety and good health.

With the exception of one or two, the whole of my specimens eventually came to an unhappy end. As winter came on, hybernation commenced as usual. Unfortunately, during my absence on a fortnight's journey, a large fire was lighted in the room in which their cage was placed. Aroused by the heat, the vitality of the famishing animals gradually exhausted itself, and within a few days they were all dead.

I can say very little with regard to the propagation of this species. At the end of August the female lays a number of eggs of a whitish colour, seven-tenths of an inch in length, from which emerge the fully developed young; these are at first of a yellowish white, but in a few days turn to a darker colour.

The Coronella austriaca appears to be widely spread, but to be nowhere so frequent as Tropidonotus natrix. For a home it chooses, in preference, rocky ground overgrown with wood, secreting itself among

the stones and thick moss. According to Lenz, it is also found in peat moors, as proved by two specimens brought to him from Clausthal; but I should be inclined to think that these had wandered into the moor from the neighbouring woods. As regards Saxony, it occurs sparingly in the Rabenauer Grund, in the so-called Saxon Switzerland, and in the Erzgebirge; but appears to be entirely wanting in the Lusatian mountains. It is frequent in the Thuringian Wald, the Riesengebirge, the Henscheuer and Glatzergebirge.

EDWARD OPEL.

Snakes in New Granada.—It perplexes me how to go to work about the night-catching business. Snakes are too abundant to render marching in the dark about bushes, &c., pleasant. "Latet anguis in herbâ," with a vengeance, here. In one corner of the green box you will find the poison-fang of one fellow I extracted, as a sample of the breed, name unknown. At the Mine, I have no doubt, multitudes of moths would be forthcoming, as it is in a deep ravine with thick forest on the sides and our working stream at the bottom: it is there we catch everything almost. But at night, except on beaten paths, one dare scarcely venture, and there are no bare tree stems for "sugaring;" must try posts and felled trees, I suppose: am going to have a trial anyhow; also at "lantern work." But, so far as I have yet tried them, neither sugar nor lantern has much attraction, perhaps because not tried in the woods, which I dare not do for fear of the snakes. The venomous snakes are not numerous; one may live years without seeing one; but they are still sufficiently frequent to give one a nip in the leg the first time one goes poking through the brush, which accordingly no one thinks of doing. I have not come into any danger, though, on horseback, I have frequently slain the vermin with my whip. Down in the plains they have rattle-snakes, but they are not to be feared, provided you do not absolutely tread on them: they are stupid and easy to settle. I was hunting for a bit of rope, not long since, in a case which was with a lot more empty in the corridor, when out walked a snake five feet four inches in length, which we slew.—*Henry Birchall, in a letter to his brother, Edwin Birchall, Esq.*

Collecting Bogotà Papilionidæ.—Let me first explain, what none of you seem to understand, that to talk of the insects that are sold in Europe as being from the "Bogotà district," is about as rational (or rather much less so) as to speak of a collection of British insects as being from the "London district." Whatever is found goes, as a rule, to the capital for sale, and thence to Europe; but the Bogotà district itself, so far as known, is poor. Nathalis Planta, Colias Dimera and a dark brown Hipparchia are the principal butterflies. Bare swampy plains and barer stony hills are not prolific of butterflies generally. Woods there are none, scarcely any trees, and of rich underwood there is none either. Riding over the plains, I found Nathalis Planta in extraordinary abundance: I dismounted two or three times, and secured a few, by way of impressing them with the fact that there was "a chiel amang them takin' notes:" they seem to enjoy nothing but high winds, and are always having their

wish gratified, for it seems always to blow on these plains outside Bogotà. I took a walk a few days since, with net in pocket, and had another interview with Nathalis; but shall try and secure you a box of duplicates, and so settle the question of the rarity of this species for the future. A few Colias Dimera I have also taken for you; they are abundant, but many are out of condition—a day or two, perhaps, suffices to do this, as the fellows fly like Tam O'Shanter before Cutty Sark. You tell me at least a hundred species of Papilio are known "from Bogotà." Nothing very alarming in that, if I have sent thirty-six species. How many single collectors have done more, and how many have contributed to the hundred I should like to know. The Papilios are the hardest to catch, and far from abundant at any time or place. What would interest me to know would be, how far my five hundred species represent proportionally the whole number known from New Granada; that is, whether the several classes or orders are in fair proportion to each other, or if the list indicates that I have looked chiefly to any particular class: I know the butterflies do not think so. There are some fellows I do not often trouble, such as Heliconia Erato: he is a fellow who knows he is common, and is always poking his nose in, secure in his worthlessness, and hoping to call you off from better game. You fancy I do not worry the whites, do you? eighty-one species of Pieridæ cannot be very bad.—*Henry Birchall; Bogotà.*

Description of the Larva of Ennomos fuscantaria.—The larva may be generally described as elongate, with the true legs well developed, the third pair being sometimes of large proportions, and with two anal points. The variety which I first set eyes on gratified a crotchet of mine, inasmuch as it resembled the leaf-stalk of the ash, from which tree I beat it. In figure it was smooth; in colour it was green on the back, with a subdorsal stripe of yellow; the spiracular stripe, primrose-yellow, reaching to the mouth, and bordered above with deep green, which became lighter near the subdorsal line; the belly apple-green; two little warts on the 12th segment; the true legs black, ventral legs tipped with crimson-brown, and the anal legs green. This I thought was the invariable pattern of E. fuscantaria, but last summer Dr. Knaggs sent me six larvæ to rear for him, and I found that at their last moult some of them developed an entirely different appearance; to wit, the ground colour was reddish gray, slightly mottled with greenish; subdorsal yellow stripe scarcely visible; spiracular line rather greener than the ground colour, and becoming yellowish from 2nd segment to the mouth; across the 3rd segment was a row of red-brown warts, the largest being on the sides; large transverse red humps on 6th and 9th segments, and a very small one on 8th and 12th; lateral red warts on 5th, 6th and 7th, and a ventral hump on 7th; pale lateral warts on 10th, 11th and 12th; the true legs crimson-brown, the third pair being very large. And Mr. Doubleday sent Mr. Buckler another larva, which appears intermediate between these two. It was nearly smooth, the ground colour a pale apple-green, subdorsal and spiracular lines yellow, but not clearly defined; the last five segments suffused with pink; two small red spots placed on a swelling at 7th segment; two dorsal warts on 12th; small lateral warts on 10th, 11th and 12th; on 3rd segment a short red-brown stripe running backwards from the spiracles to middle of the back.—*Rev. J. Hellins, in 'Entomologist's Monthly Magazine,'* p. 187.

Description of the Larva of Nonagria Typhæ.—Larva elongate, brownish ochreous; head reddish brown, a shining plate of the same hue on the 2nd segment; two fine dusky lines run down the centre of the back to the posterior segment, which is dark brown. There are two pale ochreous stripes along the sides, and below them are placed the black spiracles; belly and prolegs paler; the anterior legs whitish, tipped

with dark brown. Feeds on the pith within the stem of Typha latifolia (reed mace), is full fed in August, and about the end of the month changes within its abode to a long dark brown pupa, the tail of which is attached to the upper portion of the excavation, the head thus hanging downwards, and being one inch and a half from the hole in the outer rind, through which the moth emerges in the following month.—*William Buckler; Emsworth, Hants, in 'Young England,' March*, 1865.

Notes on the Wild Cattle at Cadzow.

By Edward R. Alston, Esq.

Much interest is attached to the various herds of wild white cattle (the Bos scoticus of Swainson) which are still preserved in a few parks throughout Britain, and some valuable information might be collected were any readers of the 'Zoologist' who live near such cattle to favour us with notes on their habits. Several valuable accounts have appeared of the famous herd kept at Chillingham by the Earls of Tankerville, but of the other breeds little or nothing has been published. Having frequently visited those preserved by the Dukes of Hamilton at Cadzow (close to Hamilton), and having received much information on their habits from the keeper, Mr. Haliday (a most trustworthy observer), I have made the following notes upon the subject.

Lord Tankerville, speaking of the Cadzow cattle, in a letter read before the British Association at Newcastle in 1838, says, "They have no beauty, no marks of high breeding, and no wild habits, being kept, when I saw them, in a kind of paddock." However this may have been in 1838, the case is widely different now. The cattle have the range of "Cadzow Forest," an extensive park studded with grotesque old oaks, and believed to be one of the last relics of the great Caledonian forest which once stretched from the Clyde to the Tweed. Judging from the published accounts of the Chillingham cattle, they would not seem to be wilder in their habits than those at Hamilton, and as to appearance a more beautiful, or (to use an expressive word) a more thoroughly *game*-looking animal than an old Cadzow bull can hardly be imagined.

The wild cattle at Cadzow differ from the Chillingham breed in having the *ears*, as well as the muzzle, hoofs, pasterns and tips of the horns all jetty black, whereas the latter have the ears *red;* according to Lord Tankerville, however, many of the former Chillingham cattle had black ears, as was also the case with those at Burton-Constable, in Yorkshire. The rest of the head, body and limbs are creamy white, purer in colour in cows and calves, and deepening almost to a light

dun on the neck and shoulders of the old bulls, some of which are also marked with a few black flecks on the fore quarters. The horns are very uniform in their bend and direction, but are longer in some examples than in others. In form the bulls agree well with Bell's spirited woodcut of one of the Chillingham breed; in some individuals the dewlap is very much developed. The hair of the fore quarters is coarser and shaggier than in the domestic breeds; but the bulls, both here and in England, have lost the mane which tradition ascribes to the original "mountain bull," and to which Scott alludes in his 'Cadzow Castle:'—

> "Fierce on the hunter's quiver'd band
> He rolls his eye of swarthy glow,
> Spurns with black hoof and horn the sand,
> And tosses high his mane of snow."

The calves are hidden for some days after birth in thickets or among long braken, and if any one is rash enough to meddle with them the whole herd rush to the rescue, and a hollow oak of enormous size is pointed out in which intruders have more than once found refuge from such an attack. Here, as at Chillingham, a few badly marked calves are born every year, and it is curious that these are almost invariably *black* or *black and white*, brown ones being hardly ever found.

Mr. Culley, quoted by Prof. Bell, describes the Chillingham cattle as galloping round a stranger in a gradually decreasing circle, but this habit is not noticed by Lord Tankerville, nor is it observed at Cadzow. Generally the cattle stand motionless for some time, gazing at the intruder with a wild distrustful stare, very different from the confident and peaceful look of domestic oxen, then they usually move slowly off, the old bulls being the last to retire. Sometimes, however, they are in different humour, advancing with an air which makes the observer glance at the distance betwixt him and the nearest fence. When the bulls are separated from the cows, which is now done every year, they become much excited, and charge with great fury. On such an occasion, a few years ago, a young bull rushed at the head keeper, who was on horseback, threw horse and rider to the ground, and gored the former severely in the flank. Fortunately the horse regained its feet and galloped off pursued by the bull, thus giving the rider an opportunity for escape.

The Cadzow cattle feed in the morning and evening, basking in the sun or chewing the cud during the middle of the day. In summer

they graze from about 6 P. M. until dark, and again at dawn; in winter they commence feeding early in the afternoon, and are observed to keep to the same hours with great regularity. They are of very slow growth, the two-year-olds hardly seeming larger than ordinary year-old calves. The bulls never reach any great age, which is owing to their fierce battles for the mastership of the herd, an honour which a bull seldom enjoys long without being wounded by some younger rival, and when this happens the whole herd set upon their late tyrant and soon despatch him.

Most of our best zoologists seem now to agree in considering the wild white cattle to be of the same species as our domesticated oxen; but whether they are merely tame animals returned to a state of nature, or are the descendants of a truly wild race, will probably always remain a subject of dispute, and unfortunately nothing is known of the history of the breed which tends to settle the question. Fitz-Stephen, writing in the reign of Henry III., states that wild bulls (*Tauri sylvestres*) inhabited the forests around London; and, according to Speed, the wife of King John received a herd of white cattle with red ears from Brecknockshire, but whether these last were tame or wild is not stated ('Penny Magazine,' No. 425). Also at the famous installation feast of Neville, Archbishop of York, in 1466, six wild bulls were included in the bill of fare.

The following list of parks at which these cattle are or have been kept, may be of interest, and probably others of the readers of the 'Zoologist' may be able to add to the number:—

1. Cumbernauld, Dumbartonshire, which formerly belonged to the Hamilton family; the breed is now extinct. ('Statistical Account of Dumbartonshire.')

2. Cadzow, Lanarkshire.

3. Dunnlarry, Dumfriesshire. Existed at the close of the last century, but gradually became extinct. ('Penny Magazine,' No. 425.)

4. Chillingham, Northumberland. The cattle were about eighty in number in 1838. (Lord Tankerville's Letter, 'Athenæum,' No. 565.)

5. Burton-Constable, Yorkshire. Were larger than the last-mentioned, had the ears, muzzles, and *tips of the tails* all black; destroyed by sickness at the end of the last century. (Bewick's 'Quadrupeds.')

6. Gisburne Park, Craven, Yorkshire. "Formerly inhabited waste land in the neighbourhood of the park." ('History of Craven,' quoted by Prof. Bell.)

7. Lyme Park, Cheshire. Different from the Chillingham breed in colour and in every respect. (Lord Tankerville's Letter.)

8. Chartley Park, Cheshire. Resemble those at Chillingham, but have black ears. (1d.)

A series of careful experiments on the breeding of these wild cattle with the domestic race has long been desired by naturalists, but has, I believe, never yet been made. Such an investigation would probably place their specific identity with Bos Taurus beyond a doubt.

EDWARD R. ALSTON.

205, Bath Street, Glasgow,
March 3, 1865.

Bats flying in Mid-winter.—If your correspondent Mr. Wharton will do the 'Natural History of Quadrupeds' the honour of consulting it, at page 24, he will find some remarks on the appearance of the Pipistrelle, even in mid-winter, which may perhaps interest him.—*Thomas Bell; The Wakes, Selborne.*

Otter near Salisbury.—Since my last notice of these animals (Zool. 9430), another has been killed in this immediate neighbourhood: it was a fine male, weighing twenty-one pounds. He was trapped on the 23rd of December, 1864, in a meadow at West Hornham, about a mile from this city. This is the fourth, to my knowledge, that has been killed here this season.—*Henry Blackmore; Salisbury, February* 25, 1865.

Common Hare.—I can corroborate Mr. E. R. Alston's observations (Zool. 9430) respecting the colour of hares this season. I have noticed several which have been killed in this neighbourhood that quite agree with his description; one in particular which differed so much from the usual colour, being of a silvery gray shade, with light face, that the dealer into whose hands it came had it stuffed: its colour could not be attributed to age, as it was a young hare, and was shot about three months ago at Clarendon, near Salisbury.—*Id.*

Common Hare.—In the 'Zoologist' for February (Zool. 9430) I see a question by Mr. E. R. Alston concerning the peculiar colour of the hares this winter. I had one sent me about three weeks ago by a friend who thought I might like it for stuffing on account of its peculiar colour: it was unusually white all over the face, and its hind quarters were of a silvery gray; it was a young hare, weighing about five and a half pounds.—*Arthur P. Morres; East Hornham, Salisbury, February* 18, 1865.

The Sloth.—If I had observed that patch on the sloth's back a few years ago I could have managed to make something out perhaps: I did not notice it in the one of which you have a drawing; that one was a female, and brought forth a young one whilst in my custody; certainly she did not carry it on her back, but in her lap. The only thing that occurs to me as requiring explanation, without seeing it, is the habit these beasts have of sitting in the fork of a tree, as represented in the drawing aforesaid. Can the leaning against a bare branch produce the effect in question? Not very likely, I think, to be the true reason. I have given orders for the purchase of any sloths that may appear for sale, and will investigate; but they are awkward animals to find out about, being chiefly nocturnal. Nevertheless, when the young one is older, it appears to me that the most convenient place would be the mother's back, with its long arms round her neck, and legs round her waist.—*Henry Birchall.*

Ornithological Notes from Shetland. By H. L. Saxby, M.D.

(Continued from page 9489).

December, 1864.

Turnstone.—At this season turnstones frequent all parts of the coast, associating with ringed plovers and purple sandpipers, but usually in small numbers. More than half a dozen are seldom seen together, but during the rough weather of the last few weeks a great number collected upon the sands in Balta, where they still seem inclined to remain. When turnstones are in company with other species they are more easily approached than at other times, but after having been fired at they become very suspicious, and for weeks afterwards it is difficult to get within shot upon open ground. On being disturbed they nearly always utter their loud twittering notes, and invariably fly seawards, seldom alighting until they have several times passed and repassed the selected spot. When wounded they swim with great ease, and will even take to the water voluntarily when closely pursued, but I have never yet seen one attempt to dive. It is a matter of surprise that so careful an observer as Macgillivray should have regarded "their alleged stone-turning habits as a fable." I have watched these birds for hours at a time, and besides witnessing the act repeatedly, have afterwards visited the ground, where the displacement of stones and shells, and even the completely reversed position of some, have been quite sufficient to prove the existence of the habit in question. Such traces are of course most readily observed upon a sandy beach where the stones are few and scattered, and upon masses of drifted weed the wet appearance of those portions which have lately been disturbed are very evident; indeed it is chiefly among seaweed that this peculiar method of searching for food is employed. Although this bird mostly frequents rocky shores, the sands, during stormy weather or immediately afterwards, appear to be very attractive.

Jack Snipe. — Jack snipe are unusually abundant this winter. Although they are to be met with in most spots which are frequented by the common species, they are solitary in their habits, so that two are not often seen upon the wing at one time. Sometimes, when a marsh has been well explored and every common snipe has been flushed, a jack snipe will spring up from a small tuft of grass or from a hollow in the ground, and even then not until it is almost beneath one's feet.

Common Snipe.—In consequence of the openness of the weather, a large proportion of the snipe remained in the hills until the snow,

which commenced about the end of December, drove them to the low grounds. Now there is not an open spring in this neighbourhood at which one or more may not be found. I have again paid several visits to Balta, where the greater part of the large flock of snipe which I have previously mentioned still remains. When they are assembled in this manner very few can be shot, for the first one which rises is sure to alarm all the others, the spot in which they lie being of very limited extent. Their first flight is always directed towards the shore, where they alight among the rocky pools; but a second alarm drives them seawards, most of them disappearing in the direction of the hills, and all flying high, only a few returning to the island. Snipe are often to be met with upon the shore at low water, but this chiefly happens in frosty weather. One nearly calm evening, about a fortnight ago, as I was sailing home close in shore, a little after sunset, my attention was attracted by the slight movement of some object upon the top of a large rock above me, and upon the nearer approach of the boat the form of a small bird became dimly visible against the sky. As it crouched among the seaweed with the head depressed and the tail considerably elevated, the apparition was a little perplexing, and in consequence of my hasty assertion that it was some rare species of sandpiper quite new to me, my companion fired and killed it; but on the discovery being made that he had simply murdered an unlucky snipe, his mortification was only equalled by mine at my faulty Ornithology.

Longtailed Duck.—The large number of shags which have been attracted to the coast by the enormous shoals of sillocks, are again causing a scarcity of longtailed ducks (Zool. 9127). Nearly all that I have seen this winter have been adult males, swimming in deep water, but not one, either old or young, has yet fallen into my hands, although in former years I obtained many specimens. Even under the most favourable circumstances it is by no means easy to shoot these birds. They seldom allow a boat to row up to them, and although under sail one may run up within forty yards or less, they will in most instances manage to escape by diving. Sometimes they take wing instead, and then they are easily shot; but it is almost useless to attempt to hit them as they sit in the water, so expert are they in diving to the flash.

Merlin.—Merlins are much less numerous here in winter than at other times of the year, and those which I have shot at that season have all been old birds. Adult males have the cere, tarsi and feet deep gamboge-yellow, tinged more or less with orange; but in all the young birds and adult females which I have examined, those parts have always been pale sulphur-yellow.

Gannet.—About the middle of December a heavy southerly gale brought a large number of gannets to Baltasound and Haroldswick, but they only remained for a few days. They never breed here, although they visit our coasts with some regularity soon after the close of the breeding season, but only a very few remain during the winter. Several instances have occurred in which these birds have been caught, as they sat upon the water, so gorged with food as to be unable to escape.

Razorbill.—Razorbills are very seldom seen here in winter. I shot one at Baltasound on the 17th of December. It was a female, and among other signs of adult age it had the bill perfect in form and grooved upon the sides, one of the grooves being white. The throat and the remainder of the under surface were white; in short, the whole plumage was in every respect similar to that which is described by various authors as peculiar to this species in winter, with the single exception of there being *no* white line between the base of the bill and the eye. I am at a loss to account for its absence, for, so far as I am able to ascertain, such a mark becomes apparent even in young birds soon after they leave the rocks, and is distinct during their first winter. Without any wish to "make a mountain of a mole-hill," may I beg that those of my readers who can give me any information upon the subject will kindly do so, my object in making this request being to throw some light upon the long-disputed question as to the right of the "ringed" guillemot to rank as a distinct species simply on account of the white line near the eye.

Lesser Blackbacked Gull.—A specimen of the lesser blackbacked gull was shot at Baltasound on the 20th of December, up to which date I had never seen one in Shetland in winter.

Glaucous Gull.—Rather an unusually large number of glaucous gulls have visited us this season; but most of those which now remain are young birds, nearly all of the old ones having, according to custom, disappeared soon after their arrival. Under ordinary circumstances it is not easy to procure specimens, for although these birds are by no means shy when attracted by carrion, they fly high, and do not, like other gulls, display a wish for a near inspection of every visitor who appears near their haunts. At this time of year, during a smart gale, it is almost impossible to walk for a mile along a lee shore without seeing a few of them sailing above the breaking waves, in readiness to pounce upon anything in the way of food which may chance to be washed up; and upon such occasions they are sometimes so intent in their search as to become almost heedless of danger. Upon the whole

they appear to prefer solitude, but they may sometimes be observed assembled in small parties, seldom in large numbers, although I have seen as many as fifty together. This species may be recognized at a considerable distance by its steady soaring flight, and by the wing being less bent at the carpal joint than it is in others of the genus; nearer it may readily be known by its conspicuous white or whitish quills, and in the water it sits more buoyantly than the herring gull, which is sometimes mistaken for it. Owing to the extreme thickness and compactness of its plumage it is seldom killed with shot smaller than BB. I have known one quietly fly away after having received three charges of No. 3, although each one of them knocked out some of the feathers. A "sitting" shot at a glaucous gull is nearly always unsuccessful, and deservedly so, for he who could not hit one flying would be a sorry shot indeed. A few days ago a friend of mine fired at one several times, but apparently with very little effect, until, having received the last charge, it flew for about fifty yards, alighted briskly upon a rock, and after standing firmly for a few seconds, suddenly fell dead. Upon examination I found very few wounds, but plenty of broken feathers, and that one shot had passed completely through the heart in such a manner as to make an opening less than a line in width into the left ventricle. In the winter of 1860-61, when there was a great mortality among the ponies, glaucous gulls were so numerous that one morning I shot four immature birds as fast as I could load, and without going more than sixty yards from the house. Of all those which have been examined by me I have only seen one in poor condition: usually they are so fat as to cause much trouble in skinning. Animal food of any kind is always acceptable to them; but, much to my surprise, I have sometimes found the stomach filled with various species of sea-weed, and this has even occurred when whales' flesh has been abundant. Only a short time ago I took from the stomach of one of these birds sea-weeds of five different species, the greater portion consisting of Alaria esculenta ("honey-ware"), the midrib of which is sometimes eaten by the Shetlanders themselves. So far as my observations go, glaucous gulls are not so quarrelsome, either among themselves or with other species, as herring gulls appear to be, and they feed in company with other birds without seeming to cause any alarm. Sometimes, when food has previously been scarce, crowds of hungry glaucous gulls, herring gulls, great blackbacks, hooded crows, ravens and starlings may all be seen feeding together upon one carcase.

January, 1865.

Little Auk.—The little auk is by no means common here, and only occurs in winter, after stormy weather. On the 16th of January I obtained a very perfect adult female, and as it avoided two shots by diving I was afforded an opportunity, though a brief one, of observing it closely while living. In its general appearance it reminded me of a small razorbill, but the fore part of the body was not carried so low in the water. The bird allowed the boat to approach within easy shooting distance, and only dived when fired at; but the act took place so rapidly that the mode in which it was performed could not at the time be detected, although subsequently I had an opportunity of seeing that the wings were partly opened at the instant the plunge was made. Unlike those specimens which I have seen in England, and from the Firth of Forth, it was in excellent condition, and the stomach was full of the remains of small fish. Judging from all accounts of the little auk which I have received from many of the inhabitants of these islands, it appears to occur here most frequently in a living state.

Water Rail—Several water rails have arrived at intervals during the last fortnight. I shot one in order to ascertain the nature of its food, and found in the stomach fibres of plants, small stones, and the mandibles of some beetles.

Rock Dove.—Large flocks of rock doves now frequent the open fields, and may also occasionally be seen inspecting the base of a rugged bank by the shore, where the frost has caused the loose earth to fall. It is at this season that their good services become most apparent. In the crop of one which I lately opened there were a few grains of barley, a great many seeds of wild mustard (*Sinapis arvensis*), and nearly five table-spoonfuls of the seed-pods of the field-radish (*Raphanus raphanistrum*). It is very probable that this species breeds much earlier than I supposed when making some notes upon it last year (Zool. 9237), for on examining a pair shot on the 17th of January I found ova in the female rather larger than hemp-seed, and in the male the testes were much enlarged, being three-quarters of an inch in length.

Guillemot.—On the 19th of January I shot the only example of the common guillemot which I have seen here since the close of the breeding season. It was a male, in very poor condition.

Great Northern Diver.—Early in winter the northern diver appears here in considerable numbers, but a large proportion of those which

then arrive disappear about Christmas. In April and May they again become plentiful, but among the few which remain throughout the summer adults are seldom seen. In consequence of its extreme wariness and also of its wonderful powers of diving, specimens are obtained with difficulty. The instant it is threatened with danger it sinks beneath the surface of the water and swims rapidly away, seldom emerging before it has traversed a distance of a hundred yards—often much more. When once it has become alarmed, further pursuit is almost hopeless, unless the bird happen to cross the track of the boat, as it will do occasionally, instead of proceeding in a line directly from it. When the bird chooses a favourable course, instead of making off to windward, a boat under sail in a stiff breeze will sometimes overtake it, but such a chance is of rare occurrence. Before its habits were so well known to me as they are now, I used often to pursue it in a four-oared boat, but always unsuccessfully; lately, however, I have been able with only a single pair of oars to get within range. It sinks the body very low as the boat approaches, often so low that the water covers the hollow of the neck, and the chances are that when fired at it will escape by diving, unless, indeed, the favourable moment be selected when the bird turns away its head or rises to flap its wings. Once, and only once, I have seen it take wing when shot at, instead of diving. It appears to me that the main secret of success in shooting it, lies in aiming low and a little in advance, so as to strike the head as it is thrown forward in the act of diving. The mode in which this bird dives cannot easily be explained in words. I have watched it carefully upon many occasions, but always with a most unsatisfactory result; it merely seems to give a slight start (if I may so express my meaning), and disappears in an instant. When wounded in such a manner as to be disabled from diving it is a very awkward bird to handle, and is then so fierce that none but curs and lapdogs should be sent in after it. It will allow the boat to run close up without displaying any sign of activity; but the moment a hand appears in reach there is a sudden splash with wings and feet, and such a thrust is delivered with the sharp bill that if it take effect it will probably interfere with the captor's shooting for some days afterwards. In order to form a just estimate of the enormous muscular power which is possessed by the legs and feet, one should take the bird in hand in a living state; and here I may mention a very conclusive, if somewhat cruel, experiment which was made a few years ago by a gentleman of my acquaintance who resides in this neighbourhood. Having slightly wounded a northern diver, he and a lad who was with him managed to get it alive,

into the boat, and after having, by means of a piece of stout line, made it fast by the leg to the stem, they tossed it overboard. The poor bird instantly dived, and for many minutes steadily towed the boat seawards, remaining entirely submerged the whole time, except when it rose to breathe. In performing this extraordinary feat it made use of the wings, flying, as it were, beneath the surface, and keeping the neck fully extended. The boat was thirteen feet in the keel, but light for its size, being, like all those which are used in Shetland, built of Norway pine. The northern diver is sometimes observed far out at sea, but its most usual haunts are quiet bays and inlets, and more especially such as have a sandy bottom in which it can seek its favourite food, the common sand-launce (*Ammodytes lancea*). In consequence of the large number of fish which it destroys, and of the frequency with which it drives the shoals from the coast, it is greatly disliked by the fishermen, who, although they usually take but little interest in ornithological matters, never fail to give me a hint as to where I may obtain "a fine immer-goose." Dr. Edmondston informs me that when under water it ploughs up the sand with its bill in order to procure the fish and worms which are concealed beneath it, and the turbid state of the water which may often be observed in those parts where the bird is feeding furnishes a strong proof of this habit; and, in addition, I have repeatedly remarked the worn appearance of the ridge of the upper mandible, and sometimes also of the lower one, near their tip. This bird is not often seen upon the wing during the winter months, but in spring I have frequently observed it flying at a considerable height, circling over land and water, and at intervals uttering loud, hoarse screams. At such times it may easily be known by its long thick neck and by its small rapidly-beating wings, which are situated rather far back. Its most common note bears considerable resemblance to the barking of a small dog; but upon a calm summer's evening I have heard it utter a long-drawn plaintive cry, so strangely unlike any other which is known to me that I cannot even attempt to describe it. In consequence of adult birds having been seen here in summer, several visitors, and among them Mr. Hewitson, have expressed a belief that it breeds among these islands, and there now appears to be some substantial ground for the supposition. Seven years ago I was much struck by the large size of a diver's egg which was sent to me among others from the island of Yell; and soon afterwards, upon my visiting the locality from which it was said to have been obtained, I saw a northern diver in perfect summer plumage, but was unable to shoot it. Although I made a most careful search the next year,

neither egg nor bird was found; but the following year, early in July, two more eggs were sent to me, and the man who found them convinced me, by his very accurate description of the bird, that they were undoubtedly those of the northern diver. Since that time no more eggs appear to have been found, although birds have been seen by me in other parts of the island during the breeding season, and chiefly in fresh-water lochs. In answer to my inquiries concerning the nest, the finder of the eggs informed me that they were discovered "lying upon the bare heather" a few yards from the edge of a loch in a remote part of the hills, about half a mile from the nearest salt water. The eggs had been so long incubated that it was impossible to blow them in the ordinary manner, and the method of overcoming the difficulty being then unknown to me, the process caused some little disfigurement. They are all very similar, both in size and colour, being of a dark, warm olive-brown, with a few scattered spots of umber-brown and dusky gray; in length they very closely agree with Mr. Hewitson's figure, but two of them are about a line less in breadth. I am not aware that eggs of the redthroated diver have ever been found of similar dimensions, nor is it at all probable that they can be those of the blackthroated diver, a species which is almost, if not entirely, unknown even as an occasional visitor to Shetland. Upon my return to England, I shall be happy to show the eggs to any person who may feel interested in the matter.

Golden Plover.—The hard weather is driving large numbers of golden plovers to the shore. The black feathers which are peculiar to the summer dress, are already beginning to appear upon the under parts.

Hen Harrier.—The hen harrier still breeds regularly in some parts of Shetland, but it is only a rare visitor to Unst. After the first fall of snow I observed a beautiful male hovering over some twites in a corn-yard.

Goldeneye.—The hard frosts having now closed all the lochs, goldeneyes have been driven to the voes, where flocks of thirty and upwards may now be seen.

Snowy Owl.—Notwithstanding the severity of the weather, no snowy owls have yet appeared. The individual of this species which has now been in my possession for more than seven months (Zool. 9317) has not yet moulted, only a very few feathers (apparently injured ones) having been cast in autumn. He has been gradually becoming tamer, and until lately very little wish to escape was displayed; but no sooner did the snow set in than he became restless, and soon, tearing through the net which was in front of the cage, escaped into the outhouse, where

he was discovered standing very contentedly upon a heap of snow which had drifted through the broken door. A few days afterwards he made a second escape, and was again found standing upon the snow.

Herring Gull.—It is difficult to imagine how this weather can affect sea birds, yet there can be no doubt that since the frost set in they have become far more familiar. Herring gulls have been particularly bold lately, and although their natural food is even more than usually abundant this season they are to be seen feeding with the poultry, and occasionally, sweeping by the kitchen-door, they snap up one of the small fish which are hung out to dry. Often, too, they visit the turnip fields, where they commit some damage. I have shot them almost in the very act, and found their stomachs filled with pieces of turnip. It is a beautiful sight to see these birds following a shoal of fish. A single bird thus engaged may be observed sweeping round in wide circles (possibly to avoid overshooting the mark), at about fifty feet from the surface, and with the wings apparently motionless. The signal is well understood, and in a few minutes hundreds of birds collect; but, instead of flying wildly and crossing one another's track, they wheel round in such a manner that, viewed from a little distance, they appear to form a slowly-revolving hollow cylinder, sometimes rather irregular in its form, but often astonishingly perfect; the regularity also with which its diameter contracts and expands is very singular. They may be seen continuing these evolutions as far as the eye can follow them; but their object is a mystery, for no captures seem to be made. Probably they follow the shoal until it comes to a halt in some sheltered place, for when small fish assemble about the rocks in any numbers, and confine themselves nearly to one spot, herring gulls devour them greedily.

Black Guillemot.—As early as the first week of December black guillemots were to be seen, in which a few black feathers were already beginning to appear upon the breast, and during the present month (January) I have shot specimens having fully one half of the number of feathers upon the under parts black. These variations in plumage still appear to be very imperfectly understood, and nothing but constant observation can solve the mystery. The abundant opportunities which I now enjoy may perhaps enable me ere long to supply a few reliable facts as to the changes of plumage which the black guillemot and a few other species undergo at various ages and at different seasons.

HENRY L. SAXBY.

Baltasound, Shetland, January 31, 1865.

Ornithological Notes from Beverley, East Yorkshire.

By W. W. Boulton, Esq.

(Continued from page 9494).

Swift.—Mr. W. Jeffery, jun., suggests (Zool. 9434), "May not the absence of convenient nesting-places have something to do with the scarcity of swifts at Beverley? Have no old buildings been pulled down or repaired?" &c. Beverley, one of the most ancient towns in Yorkshire, presents more than usual inducements for the nidification of this bird. In the belfries of its lofty towers, and amidst the gloomy rafters of its long roofings, corridors and aisles (easily accessible from without), our Minster alone would appear to offer such inducements to an unusual degree: moreover, on the south side, this edifice faces the open country. In the heart of the town stands St. Mary's Church, a very ancient structure; and I find on inquiry that in former years swifts have been observed clinging to and apparently taking up their abode in the massive tower of this church; latterly, however, these birds would seem to have well nigh forsaken us. Referring to Mr. Jeffery's second suggestion, there may be some force in it, for it is quite true that repairs have been going on in both churches, but I think not to a greater extent than has been customary each preceding year, unless, indeed, during the past summer of 1864, when the ceilings of St. Mary's Church were cleaned and painted; but this process did not in any way reduce the facilities afforded in the tower for the nesting of swifts and other birds. The Minster possesses a very rich building fund, to be applied solely to repairs, &c., and thus various alterations and renewals of different portions of the building are continually going on, but certainly not to an extent likely to interfere with the nidification of those birds frequenting the sacred edifice. Indeed the tribe of swallows, sparrows, jackdaws, with an occasional pair of redstarts, that have year by year found places there wherein to build their nest and rear their young, may still be seen in undiminished numbers. No ancient building has been pulled down, nor has any extensive alteration of those still remaining occurred to thus explain the very decided reduction in the number of swifts that have visited the town of Beverley for the last several years.

Jack Snipe.—I never recollect so many jack snipe seen and shot in this neighbourhood as during the present season,—two, three and even five of these birds, in one instance, having been flushed together, or within the radius of a very few yards. I have not observed a

proportionate increase in the numbers of the common snipe, but if anything they have been scarcer than in former seasons.

Wild Duck and Pochard.—It is several years since we have been visited by such numbers of these birds as have occurred on and about the River Hull during the present winter. The species have included principally mallard, teal, widgeon, pochard, scaup and goldeneye. The goldeneye, which in ordinary seasons is one of our rarer ducks, has this year been unusually abundant, and several splendid old male birds, in fully mature plumage, have been obtained. In former years we have had several flocks of the tufted duck, and I have always looked upon them as common winter visitants here; this year, however, I have not seen a single specimen: speaking of this duck, I have invariably observed that it is the rarest circumstance possible to obtain a *mature female*, all the birds being males, old and young, with now and then a young female. I have in my collection the only specimen of a mature female tufted duck that I have seen shot on our own river, the Hull. The goldeneyes, on the other hand, are generally young males, with now and then an old female. The widgeons shot on the Hull are usually male birds, either old or young; a really mature female is quite a *rara avis*. The sexes of the mallard and teal are pretty equally distributed. Is it possible that at this season of the year, in some species of ducks, the sexes separate, as in some other species of birds, as, for instance, the chaffinch?

Muscovy Duck.—One evening during the second week of February last, James Bishoprick, of Beverley, brought me a young female of this duck he had just shot. Hearing a rushing noise, as of the wings of a large bird, he started round from where he was standing at his work as a stonemason, and saw a large bird flying swiftly past. It shortly alighted in the neighbouring play-ground of one of our schools. Having obtained permission, he ran for his gun, and, finding the bird still in the play-ground, shot it. No one that I know of keeps the muscovy duck within several miles of Beverley, so that the bird (probably an escaped specimen) must have flown either by stages or at one flight, for a considerable distance. I was aware that the female of this duck possessed considerable powers of flight, but from its long domestication I did not know that it was apt to leave its native yard very far. The male is usually too unwieldy to indulge in extensive flights. My specimen is of a glossy blackish brown colour on the back and shoulders; primaries white; head speckled brown and white, the brown prevailing and extending downwards under the chin for about two inches, at which point it terminates abruptly in a distinct line

across the throat; breast and belly white; flanks striated with brown feathers, alternating with the white, and terminating in the uniform white of the belly; beak and legs mottled pink and dark horn-colour; iris hazel.

Smew.—On the 14th of February an immature male of this species was shot on the River Hull. It was sent to Mr. R. Richardson, of Beverley, for preservation, and has passed into the hands of Mr. John Stephenson, also of Beverley. This species is very unusual in the neighbourhood of Beverley.

Rednecked Grebe.—During the past month I have seen three specimens of this grebe in the flesh. One was shot on a private water within a few miles of Beverley, one on the River Hull, and the third off Filey. All were immature females, but the last-named was considerably the largest, longer in the bill and having more yellow at its base and along the sides of the lower mandible; it was also grayer in colour on the breast, but undoubtedly the same species, with the brown of the throat very well defined; still, judging by the state of the ovary, I cannot believe it had ever bred. This species is very rare in our neighbourhood, so much so that I do not remember having previously seen more than a single specimen that had been shot within many miles of Beverley.

Goosander.—I never knew so many of these birds visit our river as during the present season. Several flocks have been seen, out of which five or six specimens have been shot. On the 20th of February I obtained the best-marked old female I have seen, the salmon-colour on the breast being quite as deep in hue as that on the breast of an old male bird, and her crest was unusually well developed. A day or two afterwards Mr. W. Stephenson, of Beverley, obtained a fully mature male of this species. It had been shot on the River Hull by a young farmer, James Runton, of the Leven Carrs. Mr. Stephenson also assures me that another mature male was shot about the same time, but it had been plucked for the table before he secured it, the person who had shot it imagining it was a duck. Mature specimens of the goosander are not often seen in this neighbourhood, although several young birds generally visit the River Hull during each winter.

Swan.—On the 18th of February a young swan was shot on the River Hull, whose species I am puzzled to determine. It is doubtless one of the swans I mentioned in my last notes as having passed over Figham, near Beverley, for these birds have been subsequently observed, three in number, occasionally frequenting the River Hull. Its colour was grayish white, decidedly gray on the head and nape, the

gray of the neck and upper and lower tail-coverts being interspersed with white feathers; the under surfaces of the wings, axillary plumes, &c., spotless white. Still the colour would have led me to the supposition that the bird was a young specimen of the common mute swan (*Cygnus olor*) but for the following reasons:—1. The total weight, shortly after it was shot, was only 13¾ lbs., whereas the weight of C. olor, according to Yarrell, is about 30 lbs., and the same author states that young birds of the year nearly reach that weight in October. 2. The legs were slaty gray in colour, and not even approaching to black, as in C. olor. 3. The black around the nostril did not join the black at the base of bill; but there was a distinct space between the two of perhaps about the eighth of an inch. 4. The measurements of the bill and its peculiarities exactly correspond to those given by Yarrell of the Polish swan (*Cygnus immutabilis*). 5. The knob at the base of the bill was very small indeed, certainly not larger than a small horse-bean or large gray pea. On the other hand, I was unable to find the two foramina spoken of by M. Pelerin as situated a little above and on either side of the foramen magnum in C. immutabilis, but not in C. olor. This peculiarity is corroborated by Yarrell (vol. iii. p. 234), who I conceive we must consider an unusually reliable authority on this subject. Still, although I could not find these foramina, and although the colour is more that of C. olor than of C. immutabilis, the smaller size, so very remarkable, the well-marked peculiarities of bill and legs lead me to indulge a hope that I may have obtained a specimen of C. immutabilis. I have given these details purely for the sake of information, as I have had few opportunities of making myself acquainted with the peculiarities of this family, and I am anxious to decide finally, if possible, the true species of my specimen.

Pinkfooted Goose.—The only account I have been able to glean of wild geese passing over or visiting the immediate neighbourhood of Beverley, since my last notes on this subject, I obtained the other day. Mr. F. Boyes, of Beverley, was shooting up the River Hull on the 20th of February, when he saw a flock of geese flying low, but not in his direction. Two shots were fired from other guns, and one bird fell; Mr. Boyes saw it, and reported it to me as a pinkfooted goose. This specimen was sent the next day to Mr. Richardson, for preservation, by Mr. J. Stephenson, who had purchased it. I saw the bird at Mr. Richardson's, and it was a very fine female of this species. I have since heard from a farmer patient of mine, Mr. Curtois, of Hunsley, near Beverley, that several flocks of wild geese have frequented the

fields on his wold farm for some time past, apparently coming from the Humber.

Great Spotted Woodpecker.—A mature female of this species was shot in the Burton Bushes, close to Beverley, on the 25th of February, by James Bishoprick, from whom I purchased it. It is very nearly two years since one of these birds has visited our neighbourhood.

Water Rail.—I observe in the 'Zoologist' (Zool. 9468) a notice, from Mr. J. A. Harvie Brown, of the occurrence of this species in Stirlingshire. I was not aware that this bird was decidedly rare in any part of Britain, although, from its shy and retiring habits, it is seldom seen. Mr. Harvie Brown considers it "extremely rare" in the locality from which he writes. I cannot term it a common bird on the River Hull, for in ordinary seasons I have certainly met with fewer examples of this rail than of the spotted crake. In 1863 this was markedly the case, but during 1864 more specimens of the water rail were shot on our river than I ever recollect in a single season, whilst I never saw so few specimens of the spotted crake, which is generally plentiful during the summer months.

Pied Blackbirds.—Three or four specimens of this species, more or less pied, have been lately seen near to Beverley. One has been shot beautifully variegated in its plumage; two are still at large close to the town; and another is often seen near to the village of Leven, about six miles from Beverley.

Black Sparrows.—Mr. H. Blake-Knox, in the 'Zoologist' (Zool. 9467), records the fact of having seen a perfectly black sparrow. At Leven there is a breed of black sparrows; at least, the male birds are the deepest blackish brown, so nearly black as only to be distinguished from that colour when in the hand; the females are a shade lighter. The young of these birds have slaty black down, like that on the body of a black bantam chick. During the past summer three of these birds were sent to me for preservation, and are now in my collection; they were two females and a young one nearly fledged; the old male was shot also, but was unfortunately lost by dropping into the branches of a tree, amongst the foliage of which he stuck, and was never found. I hope to be able to secure an adult male this year, as several have been seen at various times near Leven. I have obtained white sparrows, one pale buff-coloured variety, and many pied specimens, but I never saw black sparrows until those I have mentioned were sent to me.

W. W. Boulton.

Beverley, March 4, 1865.

Ornithological Notes from Lincolnshire. By JOHN CORDEAUX, Esq.

(Continued from page 9449.)

Hooded Crow.—Hooded or graybacked crows are in great force this winter in their favourite haunts, the Humber flats and the adjoining marsh country. They generally arrive on this coast the first week in October; but I have known them, in one instance, appear as early as the last week in September. For some days after their arrival they are far from shy and not difficult to approach, consequently many fall victims to the gunners; they soon, however, learn by dearly-bought experience the range of a gun, and speedily acquire all the wariness and cunning of their cousins, the carrion crows. The wild-fowl shooters on this coast invariably shoot them when they have an opportunity, and I was surprised to find that they also eat them. An old gunner informed me that he considered a "hoody" quite equal, if not superior, to a scaup duck. Possibly their half-marine diet may give them the true scaup flavour; I should decline, however, to make the experiment. Nothing comes amiss to these birds in the way of food: the carcase of a beast washed up on the coast is quite a royal banquet, and I have known them gorge to such an extent on the putrid flesh as to be scarcely able to fly; nor is their attention directed exclusively to the dead animal, for I have seen them hanging about in the vicinity of a diseased and tainted sheep some time before its death, as if aware it will soon be theirs, and should the poor animal become helpless and unable to rise they will speedily hasten the period of dissolution by tearing out its eyes. One which I shot and skinned the other day was exceedingly fat: the stomach contained a quantity of white oats and the broken shells of Cardium edule, and several broken and also some entire shells of a Tellina.

Teal: Escape of Birds by Diving.—Dr. Saxby, in the 'Zoologist' (Zool. 9436) gives an interesting account of the escape of a goldeneye by diving. I recently met with a curious instance of this power of concealment in a wounded teal: one I shot at, on a stream in this parish, fell slightly winged into a narrow ditch; this ditch was a mere shallow run from a little spring, the breadth at the bottom not more than eighteen inches, and with about an inch in depth of water, running over deep impalpable mud, coloured red with iron, and without any floating weeds to obstruct the view. Although I went directly up to the spot, and found the water muddy, I saw no bird: waiting till the water had cleared, I still could find no trace whatever of the teal; and although I closely examined the sides of the

narrow runlet, failed to detect its bill, which would probably be protruded somewhere out of sight under the bank-side: the mud at the bottom was apparently undisturbed. Had I not been quite certain of the spot where the teal fell I should have given up the search as useless, but having seen it disappear at that exact spot, induced me to persevere in my search; so, taking out the ramrod from the gun, I pushed it into the light mud of the ditch, and raised it up in the place where I suspected the teal would be, when up came the bird from under the mud and went fluttering down the drain. In this case, from the shallowness of the water, it had not been able to dive, and had thus buried itself completely in the loose mud. I have seen nearly a similar instance of concealment in a water hen: in this case I had walked up suddenly to the side of one of the many circular ponds in this parish, known as "blow-wells," the water of which never freezes even in the most severe winters. These little ponds are remarkably clear, and in the centre, where the spring rises, are of great depth. Just as I stepped up to the side I saw a water hen feeding in the shallows near the margin. The bird on perceiving me instantly buried itself in the light mud, and when the water became clear I detected its bill under a small portion of floating weed. In the same manner as with the teal, I put the ramrod directly under the bird and raised it up; it rose to the surface, went fluttering over the shallows, dived into the deep clear water, and I saw it make its way across the pond and rise again in a bed of reeds on the opposite side. The water was so shallow round the margin of the blow-well that the water hen was unable to dive, and so it instantly adopted the next best course and concealed itself in the mud.

Lesser Redpole.—Observed a lesser redpole (January 11th) busily employed in searching up and down amongst the tall reeds in a marsh drain. I have never seen one before in such a situation. It was very tame, and I was able to approach within a few feet of the little fellow, who exhibited all the graceful climbing propensities of a titmouse.

Stonechat.—I was surprised to see a stonechat on the 12th of November in this parish. I was first attracted by its note, uttered as it sat on the topmost twig of a fence. It is a rare bird in North Lincolnshire, and I have never been able to discover its nest in this neighbourhood. The whinchat is the commonest of our summer visitants.

Widgeon.—Unusually large flights of widgeon, mallard, scaup, and an occasional tufted pochard, have frequented the Humber during December and January. The great haunt of the widgeon and mallard

is a particular portion of the fore-shore, closely covered with pools of salt water left by the receding tide. These pools abound with the common grass-wrack (*Zostera marina*). This is a favourite spot for shooting them: the plan adopted for this purpose is to dig a hole in the flats as near as possible to the floating fields of Zostera, and there, completely concealed, to wait for the ducks flying up to their feeding-grounds, which they do just at dusk. I have observed the mallards are generally the first to arrive, and then come the widgeons in small parties numbering from three or four to twenty and upwards. They invariably fly against the wind. It is necessary to sit with your back to the wind. These mud-holes, although dug in the soft "warp," are tolerably dry, and may be made quite comfortable with some matting and plenty of dry grass. I know no more exciting sport than thus waiting for widgeon: the swift rush of the wild fowl past you, their varied cries, and the utter solitude of your position, buried in the dreary mud-flat, make altogether a scene not easily forgotten. A large flock of widgeon which I was watching through a telescope, on the 7th of January, as they sat upon the water, consisted in a great measure of males, as two to one. I am inclined to think that a large proportion of the widgeon which visit the Humber during the winter months are males. I have frequently observed that a much greater number of males than females fall to the gun at the Zostera fields. During the day they may be seen on the water sleeping, with their heads turned back under their wings, the flock keeping well together and not associating with other species. I have frequently watched, through a glass, flocks of widgeons, mallards and scaups in close propinquity, but never intermingling.

Fieldfares and Redwings: Comparative power to withstand severe Weather.—It is stated in some works on Natural History that redwings are the first to succumb to severe weather. As far as my experience goes, this has not been the case during the late severe frost and snow, for I have found fieldfares starved to death, generally in the vicinity of running water, but, so far, not a single redwing. During the frost the redwings subsisted, I believe, nearly entirely on snails, both the large common snail and the pretty variegated sort; judging from the broken shells, the number of the latter snails destroyed by redwings must be enormous. In a walk near the Humber the other day I saw several small flocks of redwings, and every prominent stone was strewn around with the broken fragments of snail-shells: I have lately on several occasions seen these birds hammering away against a stone. I do not think the fieldfares resort to the same diet, and

have often watched to ascertain if they did so, but without avail; and had they been in the habit of feeding upon snails they would probably not have fallen victims to the frost. Owing to the absence of trees and bushes we have but few thrushes in this place. Redwings are, however, exceedingly plentiful, and must this season be especially fortunate, for the supply of snails is apparently inexhaustible.

Graylag Goose.—I have lately seen three small flocks of these geese in the grass fields near the Humber, numbering three, five and six birds.

Starlings.—Numerous and large flocks of starlings may be daily seen, during the winter months, busily feeding on the grass lands in the wide open district bordering the Humber. Two years since they always resorted for a night's lodging to a small plantation of spruce and larch; the same little covert which I have previously mentioned in the pages of the 'Zoologist' (Zool. 9448), as being now the favourite roosting-place of blackbirds and redwings. For an hour before dark on a winter's afternoon flock after flock, from every point of the compass, came dropping in, and forming at last one immense flock, numbering many thousands of birds. This large body, after wheeling repeatedly round the plantation; now dividing and subdividing into separate detachments, sometimes dashing off in a wide circuit half a mile away; now contracting into a dense mass, and again spreading out in a long straggling body, would finally rush down with a confused roar of wings and settle on the trees. Every branch was at once crowded with birds, all keeping up a continual chattering and fluttering in their endeavour to obtain a secure resting-place on the swinging and bending branches of the spruce and larch. Having once settled down, nothing would induce them, for that night at least, to forsake the friendly shade of the covert. Owing to the great damage done to the young trees by the droppings of the birds, it became necessary, much to my regret, to compel them to change their quarters, and to give them notice to quit; and it was very evident that, unless this was speedily done, the trees would be completely destroyed; as it was, the lower spruce boughs were thickly covered with their dung, a thick coating of which also covered the ground, mixed up with a confused mass of feathers, partly shed by the birds themselves, partly the remains of numbers which fell victims to hawks and owls. All vegetation on the ground under the trees was destroyed; and the smell, even on the outside of the plantation, was most offensive. In order to get rid of the starlings I had guns, loaded with powder alone, fired after sunset close to the covert side: on the report up rose the

starlings in a body with a tremendous roar of wings; generally they would immediately settle again, but on repeated firing they would rise a few yards and fly round, never, however, going out of gunshot of the trees, and then settle again. The darker it became the less notice would they take of the firing, and at last would not rise at all. The next night the firing was repeated, and with the same result; after which, curiously enough, it had the desired effect; the next night the whole body of starlings forsook the covert, and have never since returned there for a night's lodging. Their present retreat must be at some distance from the village, as I know of no place within many miles so well adapted for a roosting-place as their late quarters. Flock after flock, numbering from twenty to thirty to many hundreds of birds, still nightly pass over this village, flying in a south-easterly direction and at the average height of about forty yards. On their return at daybreak to their favourite feeding-grounds they do not fly high, generally skimming along near the ground, rising above the tall hedge-rows and other obstructions in their line of flight and dropping again on the other side to near the ground. Early on the morning of the 20th of February, when out duck-shooting on the borders of the marsh district (I think I never before experienced a rougher morning walk), flock after flock of starlings passed me flying close to the ground, and going right in the teeth of a tremendous northerly gale, driving before it dense clouds of snow. Right in their line of flight two sparrowhawks were cruising backwards and forwards, like a pirate vessel and her consort in the line of the trade winds, but so great was the gale that the starlings never attempted to rise or deviate a yard from their course to avoid the hawks. Since writing the above I have read in the 'Zoologist' (Zool. 9499) that sparrowhawks are said not to feed on starlings. I have myself seen, in our marsh district, sparrowhawks in the pursuit of starlings, and have also frequently observed in the evening a pair of these birds beating about and flying down amongst the starlings in their former favourite roosting-place, the small spruce covert; and it is in this district no uncommon circumstance to find the spot where a starling has been devoured. I cannot, however, at this time recollect a single instance in which I have seen a sparrowhawk actually strike down and carry off one of these birds.

Water Rail.—During the late severe frosts I noticed a water rail feeding in an open drain bordering a railway, and close to a public road and station: it took little heed of anyone passing. When feeding it waded knee-deep into the shallow stream, jerking up its tail after the manner of a water hen, and constantly kept probing with its bill up to

the very forehead in the mud, reminding me very much, in its mode of feeding, of a whimbrel. The water rail is a common bird in this neighbourhood.

Knot.—Although we have experienced an unusually severe season, and consequently might expect an increase in our winter visitants, yet I have known the knot visit us in much greater numbers than they have done this winter. They may generally, however, be seen from the beginning of November to March, in flocks numbering many hundreds of birds, on the dreary mud plains left by the receding tide. Invariably *half an hour* before dark they are on the wing, moving off to some favourite feeding-ground; flock after flock pass, all going in one direction. As they fly along close to the water's edge, rising and falling in their flight, and stretched out into a long straggling line, they look, in the deepening gloom, like the long trail of smoke left by a steamboat.

Fieldfare.—Fieldfares have suffered greatly from the late severe weather, and great numbers have perished. I frequently put them up on the open streams, squatted close down near the water, under the hollow bank: they would suffer a very close approach, flying for a few yards with a weak struggling flight, their feathers puffed out, and all the appearance of starvation. The other day I saw a hooded crow seize by the neck and fly off with a fieldfare, which was feeding by the side of an open drain: it carried it about two hundred yards, and then, alarmed by my appearance, dropped the bird: on going up to the spot I found it dead and bleeding from a wound in the neck: it was in miserably poor condition. From the many scattered feathers I have lately found on our drain-banks and the foot-marks of crows imprinted on the snow, I have reason to think that this is by no means a solitary instance, but that many thus fall victims to the "hoodie."

Common Wild Duck.—I have observed that the mallards, which during severe weather frequent the small streams in this parish, prefer the tender leaves of the small water crowfoot (*Ranunculus pantothrix*) and spring-water starwort (*Callitriche verna*) to all other plants, also the roots and stems of the common hornwort (*Ceratophyllum submersum*); quantities of the latter plant are pulled up by the ducks when feeding, and may be found floating on the water. I have seen the trailing stems of the crowfoot and starwort in our streams completely stripped of their leaves by ducks.

Wild Swan.—Several wild swans have been shot in this neighbourhood during the winter. One was killed on the 14th of February in a small stream in this parish: I did not see the bird myself, so am

unable to say to what species it belonged: I was told it was a young bird and in very poor condition. I saw a wild swan which had been shot in the marsh hanging up in a game-shop in Grimsby the other day: it showed a large admixture of brown in the plumage: from its small size, black bill, and the *small portion of dirty gray* (not yellow) at the base of the bill and running up to the eye, I have no doubt it was an immature specimen of Cygnus Bewickii.

Great Blackbacked Gull.—This bird is not of unfrequent occurrence on the Humber flats. There is one particular point in this parish, where a small stream empties itself into the Humber, often flowing for some distance across the mud flat, where I seldom miss seeing a magnificent specimen of this gull, and I have had many a long look at him through my telescope. Either this bird or one of the same species has frequented this same spot during the winter months for several years, where its wild harsh cry or bark is quite in keeping with the lonely prospect. Owing to its extreme shyness the great blackbacked gull is rarely shot; the young birds are, however, not nearly so difficult to approach. I have frequently seen this bird give chase to and drive away the blackheaded gulls when in the vicinity of its favourite haunt. The other day, however, I saw the great blackbacked, herring, common and blackheaded gulls all feeding quietly within a few yards of each other. One of the blackheaded gulls had already (25th of February) resumed the black plumage on the head, while others were in the transition state.

JOHN CORDEAUX.

Great Cotes, March 2, 1865.

Peregrine Falcon and Merlin at Epworth.—On the 27th of February, 1865, I received a splendid and unusually large peregrine falcon, in the flesh: it was trapped in the neighbourhood of Epworth. Dissection proved it to be an immature female: the stomach contained the remains of a duck. Another bird, which had probably been paired to my specimen, has been seen in the neighbourhood since mine was trapped, but has hitherto escaped capture. On the 2nd of March a beautiful specimen of the merlin was shot in the vicinity of Epworth: it proved to be a mature female: I have never seen but one specimen of this falcon shot in this part of Lincolnshire.—*Henry Gravil; Epworth, Bawtry.*

Merlin near Salisbury.—A few weeks ago I saw, in the flesh, a beautiful specimen of the merlin: it was a male bird in exceedingly fine plumage, and was shot near Amesbury, eight miles from Salisbury. I recollect seeing a female bird of the same species that was killed at Amesbury last season. I have also seen at different times some very nice specimens of the hobby from the same locality: these birds are rarely met with about here except in that district.—*Henry Blackmore; Salisbury, February* 25, 1865.

Note on the Sparrowhawk.—I have a still more satisfactory proof than the one given in my last note (Zool. 9465) that these hawks are in the habit of removing their young if disturbed. One of the gamekeepers here, whose veracity I can vouch for, informed me that during last summer he found a nest of young sparrowhawks; he took one of them out, tied a string to its leg, which was fastened to a peg driven into the ground near the root of the tree, and set a trap beside it. Returning next day, he found the string broken in the middle, the hawk gone, and also the others in the nest. Not long after he found another nest with young hawks, one of which had a piece of string tied round its leg, thus leaving no doubt that these were the hawks removed from the first nest.—*William Brown, jun.; Wynyard Park, Stockton-on-Tees, February* 13, 1865.

Note on the Kestrel.—Two young birds of this species were brought to me last summer. I kept them tied by the leg to a wooden perch: on coming to look at them one day I found one of them loose, and the string, which was well knotted round the leg, undone. I caught the loose bird, tied it up again, making the knots very firm, and lay down behind a hedge to watch. After having settled on the perch, it began with its bill to unloose the knots, which, after a short time, it succeeded in doing. Both of them eventually managed to make their escape by this trick. They were also very fond of bathing in a bowl of water.—*Id.*

Snow Bunting at the Kingsbury Reservoir.—To-day, while walking round the reservoir at Kingsbury, my attention was attracted by a single light-coloured bird in company with some sky larks, meadow pipits, and one or two starlings, searching for food among the dead weeds and other refuse that have lately collected on the edge of the water. While flying the white in its wings and tail was very conspicuous. It was very shy, but at last, by a long shot, I succeeded in killing it, and I then recognized it as a snow bunting. It is an adult male in perfect plumage. I am not aware that the snow bunting has been seen here before.—*Charles B. Wharton; Willesden, Middlesex, February* 8, 1865.

Note on the Hooded Crow.—There is an unusual number of the Royston or hooded crow in the water-meadows of Britford, close to Salisbury, this year: there has been one, and one only, every winter for many years past about here, but this year seven or eight have been seen.—*Arthur P. Morres.*

Early Wren's Nest.—At Saxmundham, Suffolk, on the 27th of December, 1864, a nest containing two old and five young wrens (flyers) was found in a fence by one of Mr. Long's keepers: they were all captured, and have been preserved by a birdstuffer in the town.—*Edward Neave; Leiston.* [Were not these birds of the previous season?—*E. Newman.*]

Lesser Spotted Woodpecker near Salisbury.—Last week I had a female specimen of the lesser spotted woodpecker sent me from Britford. It was shot by a gentleman's gardener on an old walnut tree: there were two male birds at the same time with it, but these have not since been seen. Is this species generally considered rarer than the larger spotted woodpecker? I have met with several of the smaller sort in Berkshire, Somersetshire and Wiltshire, but I have never met with the larger.—*Arthur P. Morres.*

Anecdote of a Hen killing Mice.—The following observations have been communicated to me by the lady to whom the hen belongs, with permission to forward them for insertion in the 'Zoologist.' "A year ago I had given to me a cock and two hens of the white Dorking breed; one of the hens was accidentally poisoned, but the

cock and the other hen I still have, and the hen lays regularly; but during the last six weeks she has taken to watch for and catch the mice, with which our yard is overrun. I did not believe what I had been told as to her doing this; but three days ago I went into the yard and saw a bit of my hen's white feather sticking out of a low bunch of heather and dead fern-stalks which is in one part of my fernery. The hen was *en cachette*. Presently I saw her head peeping out, and in another moment she pounced on a mouse, which was playing out of its hole, and killed it and brought it to my feet. I remained about the yard another twenty minutes, and again saw the hen catch a mouse in its beak and kill it with one blow of its bill on the head. The man who attends to the yard says that after killing the mice, the hen picks them to pieces, but does not eat them."—*J. H. Gurney; March* 1, 1865.

Moorhen perching in Trees.—On the 29th of December, when out shooting near Stratford Toney, Wiltshire, I sent a dog into a willow bed. The first bird flushed was a moorhen, and it was with some surprise that I saw it perch in a willow sapling, some ten feet from the ground. A few days afterwards, as I was walking through the same willow-bed, I observed the same thing. On my nearer approach the bird took to flight and I shot it. I have since observed this habit several times in this locality, but though I have had a good opportunity of studying the habits of the moorhen in former years, and in other localities, I never before observed it perch in a tree among twigs not more than half an inch thick.—*Joseph J. Armistead; Virginia House, Leeds, February* 2, 1865.

[Moorhens very commonly roost in trees: I have seen as many as a dozen at one time thus elevated: taking them at first sight in the dusk for rooks.—*E. Newman.*]

Carolina Crake near Newbury.—In October last I shot, on the banks of the Kennet, near Newbury, a Carolina crake (*Porzana carolina*). It was exhibited by Mr. A. Newton, of Magdalene College, Cambridge, at the Meeting of the Zoological Society on the 14th of February, who remarked on the fact of the species having also been met with so far from its usual range as Greenland, and also on the vagrant habits of some other Rallidæ; for instance, the common English corn crake, which has not only occurred once in Greenland, but also in the Bermudas, and several times on the eastern coast of the United States.—*H. S. Eyre; Newington, near Sittingbourne.*

Tufted Duck near Salisbury.—I have had three specimens of the tufted duck brought to me since Christmas, two males and one female, all of them shot in this immediate neighbourhood. Wild fowl have been less abundant with us this winter than usual.—*Henry Blackmore.*

Sclavonian Grebe at Worthing.—On the 7th of March, 1865, a gardener, who has the care of a walled-in garden on the outskirts of Worthing, on entering the garden, about nine o'clock in the morning, observed a bird, apparently asleep, with its head under its wing, near one of the garden-walks. On touching it with his foot it attempted to flutter away, but the gardener caught it, and having killed it, took it to Mr. Wells, birdstuffer, at Worthing. The bird proved to be a Sclavonian grebe, in full winter plumage: it was in very fair condition, and apparently quite uninjured. On dissection it was found to be a female, but the ova were but little developed, none being larger than a small pin's head and the majority considerably less. The stomach contained (as is usual in the grebes) several of the bird's own feathers, together with minute angular pebbles and a bright green vegetable substance apparently the

remains of some very small aquatic plant, but no sign of any animal food.—*J. H. Gurney; March* 16, 1865.

Correction of a Misprint.—I take this opportunity of correcting a misprint in the number of the 'Zoologist' for the present month (Zool. 9468), where, in my notice of the purple sandpiper's occurrence at Lancing Water, the word "broadish" is erroneously applied to this pool, instead of "brackish," which was the term I used.—*J. H. Gurney.*

Proceedings of Societies.

Entomological Society.

March 6, 1865.—F. P. Pascoe, Esq., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' No. 71; presented by the Society. 'Linnæa Entomologica,' vol. 15, 'Entomologische Zeitung,' 1865, Nos. 1—3; by the Entomological Society of Stettin. 'The Naturalist,' Nos. 10—20; by the West Riding Consolidated Naturalists' Society. 'The Zoologist' for March; by the Editor. 'The Entomologists' Monthly Magazine' for March; by the Editors.

Election of Members.

Herbert Jenner, jun., Esq., of Hill Court, Berkeley, Gloucestershire, and the Rev. T. A. Marshall, M.A., of Hart Street, Bloomsbury, were elected Members. Richard Lydekker, Esq., of Harpenden Lodge, St. Albans, was elected an Annual Subscriber.

Prize Essays.

The President announced that, as an inducement to the study of Economic Entomology, the Council had determined to offer Two Prizes, of the value of Five Guineas each, to be awarded to the Authors of Essays or Memoirs, of sufficient merit, and drawn up from personal observation, on the anatomy, economy, or habits of any insect or group of insects which is in any way especially serviceable or obnoxious to mankind. The Essays should be illustrated by figures of the insects in their different states, and (if the species be noxious) must show the results of actual experiments made for the prevention of their attacks or the destruction of the insects themselves.

On former occasions the Council selected a definite subject, as *e.g.*, the Coccus of the Pine Apple, the larva of Agrotis Segetum (the large caterpillar of the turnip), &c. The consequence was, that competition was diminished or not called into play. On the present occasion, therefore, the selection is left to the candidates themselves, provided only that the subject be one fairly belonging to the Economic branch of Entomology.

The Essays must be sent to the Secretary at No. 12, Bedford Row, with fictitious signatures or mottoes, on or before the 31st December, 1865, when they will be referred to a Committee to decide upon their merits; each must be accompanied by

a sealed letter indorsed with the fictitious signature or motto adopted by its author, and inclosing the name and address of the writer.

The Prize Essays shall be the property of, and will be published by, the Society.

Exhibitions, &c.

Mr. Bond exhibited specimens of a gall found on a willow tree near Cambridge; the tree was fifty feet high, and almost every twig appeared to possess its gall, which took the form of a premature terminal development of leaves in whorls, so as to resemble a flower-head. He had observed the galls only the day before the Meeting; the leafy excrescences were then dry and withered, and he was unable to state what was their colour when fresh.

Mr. W. W. Saunders remarked upon the similarity between this and the Swiss gall which he had exhibited at the Meeting of November, 1864 (Zool. 9377), in which, however, the leaf-like processes were not spread out, but were adpressed to the stem.

Mr. Bond also exhibited varieties of Colias Edusa and Vanessa Urticæ, both captured in Norfolk or Suffolk; each was remarkable from having the wings, particularly the hind wings, conspicuously blotched or suffused with dark patches.

Mr. T. W. Wood (who was present as a visitor) exhibited a variety of the male of Apatura Iris, captured in Kent; it was remarkable for the absence of the usual white markings on both the upper and under sides of the wings. He also exhibited a moth from Bahia, belonging to the family Arctiidæ, and supposed to be new to Science.

Prof. Westwood, referring to the exhibition at the previous Meeting of Major Cox's Acari, said that he had at the time called attention to the position during copulation of the small male, which anchored itself by means of its mouth upon the breast of the female; he had since found that De Geer had observed the same fact, and had figured it, but had misrepresented the position; the male appeared to continue *in situ* for a considerable time, in fact for several days. Major Cox's dogs must have been very recently worried by the ticks, as many of the specimens taken home by the Professor for examination were found to be full of blood. He had taken numerous eggs off a portion of the kennel, and one female was discovered full of eggs; there were also on the wood the shells of eggs which had hatched, the first skins of the larvæ, and various stages of the insect; in the first and second stages they were dull yellow and had only six legs; in the third stage they appeared to begin to suck, and though not larger than a well-sized pin's head, were distended with blood; in the fourth stage they had eight legs, the sexual distinctions became visible and sexual intercourse was carried on. The Cimex found on the wood had proved on examination to be a well-known insect.

The President mentioned that he had also taken home a pair of the Ixodes *in copulâ*, and had gummed the female down, in which position she had remained for a fortnight, at the end of which she was found in the act of walking away. He remarked upon the great vitality of female insects after impregnation and before the deposition of eggs.

The President read the following:—

A Note on Generic Names having nearly the same Sound.

"It frequently happens that I am called upon to defend the principle that no generic name ought to be changed simply because it has a near resemblance to

another generic name of prior date. I have thought, therefore, that a short notice calling attention to the enormous evil involved in such changes, both as to the number of names that would have to be cancelled, and to the uncertainty as to what should be considered to be too near an approach to the older name, would be desirable. In such closely sounding words as *Cercus* and *Circus*, *Ectinus* and *Ectimus*, *Sypalus* and *Sipalus*, there could be no doubt; whether, having regard to our peculiar pronunciation, such names as *Lina* by the side of *Lœna*, *Centor* by *Sintor*, or *Dignomus* by *Dinomus* would be admissible, would not be a question out of England. Few, too, would have any difficulty about *Pteroclus* and *Pterocles*, *Drapetes* and *Drapetis*, *Hephialtus* and *Ephialtes*, *Spondylis* and *Spondylus*, but some may hesitate as to *Lema* because of *Lemur*, *Harpalus* because of *Hapalus* or *Colotes* because of *Calotes?* Then would no one be found to assert that *Europs* was too close to *Euops*, or *Blax* to *Blaps*, or *Astycus* to *Astacus*. *Hyperion* has been found too near *Hyphæreon*.* Should we not also reject *Tychius* because of *Trichius*, *Frixus* because of *Phrictus*, *Typhœa* because of *Tiphia?* M. James Thomson ignores *Desmocerus* because of *Desmoderus*, *Orthostoma* because of *Orthosoma*, *Aphies* because of *Aphis*. But compare *Thysia* to *Thyrsia*, *Frea* to *Phœa*, *Nicias* to *Nysius*, *Ælara* to *Hilara*, and by the same standard we should reject them too. Then there are many names that, owing to a radically different spelling, may not have struck us as being similar in sound, such, for instance, as *Allœsia* and *Halyzia* (as well as *Alysia*), *Sitona* and *Cetonia*, *Lichas* and *Lycus*, *Enema* and *Anœma*, *Cyrtus* and *Syrtis*, &c. One great authority considers all names as practically identical which only vary in the termination. Thus *Ammobius* is sunk because of *Ammobia*, while to replace it we have *Ammophtorus*, notwithstanding that there is already an *Ammophorus*, and in the same family too. Following up this rule, what is to become of *Dromius* after *Dromia*, *Pachyta* after *Pachytos*, *Mycetœa* after *Mycetes*, *Pogonus* after *Pogonias*, and so on. What are the advantages to be derived from such changes? Ornithologists have no difficulty in using *Pica* and *Picus*, *Otis* and *Otus*, &c. It is bad enough to have to alter the names that are *absolutely* identical, and they are more numerous, I think, than is generally imagined. It will be seen that I have entirely confined myself to the Coleoptera, as being better known, in the names I have quoted that will require to be cancelled, if the principle I contend against should be adopted. A word or two as to making slight alterations to render, I presume, names more classical. This, I think, ought not to be done except when some very gross error has been committed, as in the celebrated *Spavius* case. Dr. Kraatz has just used the word *Melarachnica* avowedly because the more correct form would be too long. On the other hand, Mr. Crotch, in his 'Catalogue,' changes *Emus* of Leach to *Emys*, but Leach, probably, very well knew that this form of the word had been already appropriated to a genus of tortoises. Mr. Crotch, therefore, must either coin a new word or go back to the old one. Is there anything but confusion likely to follow such alterations?"

Prof. Westwood thought it unadvisable to change generic names on the ground discussed by Mr. Pascoe, or indeed on any ground except the precise identity of the two appellations. He had, thirty years ago, compiled a catalogue of all the generic

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* Prof. Westwood changed the first of these names to *Campylocnemis*, under the idea that it had been previously used; Mr. Macleay's genus, however, was *Hyphæreon*.

names then published, and in so doing he had made numerous alterations in the forms given by the authors thereof, either because the names were too near to others of prior date, or because they were not classically formed, or for other reasons which then appeared to him sufficient. That Catalogue was still in MS., but if it ever should be published, his experience had led him to the conclusion that the proposed alterations ought to be rejected, and that for the avoidance of confusion, the original names, even if not quite classical, ought to be retained. Even where two generic names were precisely identical, not only in sound, but in spelling, he thought some modification of the rule, as now generally understood, was admissible; he did not think it necessary that the name of a genus of insects should be sunk and another substituted in its place merely because it was subsequently discovered that the same name had been previously applied to a genus of plants, birds or fishes; it was sufficient if the same generic name did not occur in duplicate in the same class of the animal kingdom.

Mr. W. W. Saunders thought that botanists had now abandoned the practice of altering the names of genera of plants on the ground that such names had been previously used for zoological genera.

Prof. Westwood directed attention to a translation, in the March number of the 'Annals and Magazine of Natural History,' of a paper by Schiödte on the Classification of Insects, and in which the author compared the merits of Fabricius and Latreille as philosophic classifiers, his conclusion being strongly in favour of the former. The Professor combatted this view, and vindicated the scientific and philosophic eminence of Latreille.

The President, whilst admitting the ability of the author, also criticized the paper in many of its details, as *e. g.*, where the author sets aside all the primary characters whereby the Prionidæ are at once distinguished, for the purpose of establishing a character in the stipes of the maxillary palpi, which is said to be moveable, but the adoption of which character served only to group insects together which were, in fact, widely separated, and thus to produce an unnatural arrangement; and again, where the author argues in favour of the lamellæ of the antennal club of the Lamellicorns being a modification of hairs. Moreover, Schiödte's observations appeared to be made for the most part on the very limited fauna of Denmark.

Paper read.

Mr. M'Lachlan read "Trichoptera Britannica; a Monograph of the British Species of Caddis-flies."

In this paper, the result of five years' study of the group, the author gives detailed descriptions of 124 species, arranged in 43 genera, and full accounts of the habits of the same, so far as they are known to the present time. Stephens, in his 'Illustrations' (1836-37) described no less than 183 so-called British species; but some species were there given under as many as six different names, and the two sexes of the same insect were not unfrequently placed in different genera or sections. The number was reduced to 108 by Dr. Hagen in his Synopsis of the British species published in the 'Entomologists' Annual,' 1859—61, the true number known at that time being probably under one hundred. The difference between that number and the 124 species now enumerated represents the additions to our Trichopterous fauna during the last four or five years.—*J. W. D.*

The Entomological Society of London.

The Entomological Society of London was founded in 1833, for the purposes of forming a centre of union for British Entomologists, of amassing a Library of Entomological Books, and of publishing in its "Transactions" papers on Entomological subjects.

The Society is now producing the 12th volume of its Transactions. During the last year it published 560 pp. of letter-press, illustrated by 22 Plates. The inadequacy of its funds to defray the expense of printing and illustrating all the valuable contributions to Science which are offered to it, and which, from the unremunerative nature of such publications, may probably not otherwise issue from the press, induces the Council to make an appeal to the patrons of Science in general to join the Society, and thereby enable it to enlarge its present sphere of usefulness.

The Council is extremely desirous of increasing the knowledge of the Entomology of our own country, and on that account asks more particularly for the assistance of the many Entomologists who are scattered over the United Kingdom; especially also is it anxious to devote attention to Economic Entomology, and requests therefore the support of agriculturists and horticulturists, and of all who are interested in the habits and economy of insects, and the best modes of cultivating the useful and of destroying the noxious species.

The Council has recently offered two Prizes of the value of Five Guineas each, to be awarded at the end of the present year to the Authors of Essays or Memoirs of sufficient merit on subjects belonging to the economic department of the Science.

The Society consists of Members (who pay an Admission Fee of Two Guineas and an Annual Contribution of One Guinea) and Subscribers (who pay the same Annual Contribution, but are exempt from any Admission Fee). Both are entitled to attend and introduce Visitors at the Monthly Meetings of the Society, to use the Society's Library, and, if resident more than 15 miles from London, to receive gratuitously the "Transactions" as they appear, thus actually obtaining a full equivalent for the amount of the Subscription. Members or Subscribers residing within the above limits can purchase the Transactions at half-price.

Papers of high scientific interest are awaiting publication; the furtherance of Science is the sole object of this appeal; and the Council trusts that it will result in a considerable increase of the Contributing Members of the Society.

Further information will be gladly supplied by the Secretary, to whom all communications should be addressed.

F. P. PASCOE, President.

12, Bedford Row, London, W.C.
February, 1865.

Life-History of Agrotis Segetum (the Turnip Grub).

By Edward Newman.

I believe I should rather understate the fact if I were to say that I had received, through her Majesty's Post-office, one hundred consignments of this most injurious insect, together with details of its ravages and demands for a remedy. It is taken for granted, from my long course of observation, and frequent communications to public papers on the subject of insect pests, that I possess a sort of omniscience in these matters, whereas, the truth is, however we may seek to disguise it, that the most learned and most observant of entomologists knows but little, very, very little; and when he ventures on advice, that advice, instead of being couched in the cabalistic figures of a prescription, or a recommendation to purchase some nostrum of which he, the entomologist, may be supposed the proprietor, is generally a simple recommendation to the querist to allow Nature to take her course. Thus, all my own observations tend to show that Nature is her own physician, and that neither allopaths nor homœopaths can do anything better or wiser than allow Nature to work out her own cure. In our own bodies we find that almost every disease can be traced, more or less directly, to some interference with the course of Nature: we eat too much, or drink too much, or interfere in some way with Nature's laws; inconvenience follows, and we demand a counter interference to balance the first. It is exactly thus with the world of animals. Birds, insects, all living things, have their appointed food: this is a law with which it is dangerous to interfere: the present instance is as good an illustration of this as can possibly be given. Nature supplies roots as the food for the turnip grub. Man increases the supply of food prodigiously; Nature increases the number of devourers prodigiously. The farmer does everything in his power, and very properly so, to increase the crop of swedes, turnips, mangold wurzel, potatoes, and so forth; Nature does all in her power to increase the number of the grubs so abundantly supplied with food: these grubs are the especial and favourite food of certain birds—the partridge, the rook, the starling. Following up the invariable law, Nature multiplies the birds because of this superabundant supply of grubs; man thwarts Nature, destroys the birds, and gives immunity to the grubs. Thus we allow the grubs to increase—in fact, give them every encouragement; they revel in the abundance we have provided for them, and we wonder at their voracity, and demand a remedy for the injury we have caused. This principle of interference is carried on

by man in very many other instances, in a manner highly detrimental to his own interest: he pays the price of a sack of grain for every owl nailed to his barn-door, because that owl would destroy mice every night; and these mice being relieved of their oppressive enemy would, in a very short time, destroy a sack of wheat, peas or beans. The kestrel, in like manner, kills mice, and the death of a kestrel may fairly be reckoned a loss of five pounds. A sparrowhawk left to himself, even by scaring the sparrows from the ripening grain, will save the wages of at least three boys. In Scotland the incessant warfare against birds of prey, and the near accomplishment of their extermination, has allowed such an increase of the ring dove as to threaten, by their insatiable voracity, a dearth of cereals for the food of man. Associations are formed, officers appointed, speeches made, rewards offered: the object being solely and exclusively to remedy the evil which the speech-makers have, by their supposed sagacity, induced. Fifty such instances might be given, but let us take the particular instance of the turnip grub. Two birds make it their special and favourite food; these are the partridge and the rook. Neither of these is favoured with a place in that "gamekeeper's museum," the bole of an oak or the door of a barn; but, nevertheless, they are persecuted for sport, or destroyed by poison, and, whatever the pretext for the slaughter, the effect is the same. Partridges and rooks alike grace our tables—partridges under their own name, rooks, *nomine mutato*, as the chief ingredient of pigeon pies.

The history of the turnip grub has only been partially narrated. I will endeavour to give it briefly, but in a somewhat more connected form. The first author who noticed the extent of its ravages was "Rusticus" of Godalming, in 1832; the second, Mr. Le Keux, in the 'Transactions of the Entomological Society,' in 1840; and the third, Mr. Curtis, in his 'Farm Insects,' in 1860. Neither of these authors has observed the commencement of the evil. The grub is the offspring of a moth, Agrotis Segetum, which is seen on the wing twice in the year—first, in June; and, secondly, in October. Of course, naturalists assume that the October flight is the produce of the June flight, and the June flight the descendants of the autumnal flight; this is not so; there is but one generation in the year.

The egg is laid in June, on the ground, and soon attacks the young plants of the various kinds of turnips, carrots, cabbage-plants, charlock, mangold wurzel, radish, and a number of the common weeds. Having tried the grub with a great variety of provender, I can vouch for its feeding on any plant sufficiently succulent; but when young its

depredations are mostly above the surface of the ground, and it seems to delight in that particular part of a plant which lies between root and stem, as I have found numbers of young turnips and carrots divided exactly at this spot, the upper part being left to perish on the surface of the ground. In August and September the grub goes further down; its operations are now almost entirely subterranean, and its chosen site is the very base of the turnip bulb around the tap root which descends into the earth. Here it excavates large and almost spherical cavities, in which it resides henceforward, except during severe frost, not returning to the surface unless its food fails. When full grown it is an inch and three-quarters, or even two inches, in length, extremely stout, and its skin tight and shining. When forcibly unearthed, it rolls itself in a loose ring, but almost immediately afterwards unrolls, and, if placed on the surface of the earth, instantly buries itself with the activity and skill of a mole. Both rooks and partridges are aware of this, and it is very interesting to watch with a pocket-glass the instantaneous movement with which they seize on this grub directly they have brought him to the surface, the rook delving for him with his beak,—a habit that might have obtained for this invaluable bird the name of *fodiens* rather than *frugilegus*,—and the partridge turning him out by the simple expedient of scratching, after the method practised by all birds of the poultry order.

The head of the full-fed larva is stretched out on a plane with the body, and is much narrower than the 2nd segment, flattened, and not notched on the crown; the body is cylindrical, the back slightly wrinkled transversely; the colour of the head is pale dingy brown, with two longitudinal patches of dark brown on the face; the labrum and antennal papillæ are white; the body is pale smoke-colour, sometimes slightly tinged with pink, and the 2nd segment having on its back a dark and semicircular shining plate; each of the other segments has ten circular, shining, dot-like spots, slightly raised above the surface of the skin, and slightly darker than the ground colour; each of these spots emits a small central bristle, and each, also, is surrounded by a paler area; on the 3rd and 4th segments these spots form a pretty regular transverse series, but on the 5th and following segments four of them are ranged in a square or trapezoid; one spot is situated just above each spiracle, and one below it, and two others on each side of each spiracle; the spiracles themselves are very small and intensely black; the belly of the larva is the colour of putty; the legs are pale, and the claspers putty-coloured and very small, not spreading at the ends. The larvæ turn to smooth brown pupæ in the ground, some in

October, but the greater number not until the following May. Those which become pupæ in October emerge as perfect moths in the course of a few days; they rarely, if ever, pass the winter in the pupa state, and it is a very remarkable and hitherto unexplained fact, but one which I have dwelt on at some length in a paper read before the Entomological Society, that the female moths which are disclosed in October and do not hybernate are almost invariably barren: I say *almost*, because I do not desire to press this theory unduly; as far as my observations have extended they are *always* barren females, and therefore entirely useless as regards the continuance of their kind. This is by no means an isolated case of the superabundant supply of life provided by Nature; the autumnal production of drones in bee-hives, not one in a thousand of which ever serves any useful purpose, as far as apiarians have ascertained, is a similar instance of the lavish abundance Nature supplies, and the destruction of these drones by the workers is a striking instance of the mode in which she disposes of this superabundance. These barren moths are not merely of necessity unproductive from the absence of males, but their bodies are perfectly empty, mere hollow cavities without eggs or any perceptible ovary.

If the winter prove severe the larvæ retire entirely beyond the reach of frost, returning towards the surface again as soon as the thermometer rises.

The bulk of the brood emerges in June, and then the sexes are in equal numbers, and the females are invariably fertile, their bodies being filled with eggs. A vast and incalculable amount of injury accrues from this hybernation of the caterpillar. The hybernation of caterpillars is a very familiar fact to entomologists; but they live through the winter in a quiescent state, as though slumbering, and do not eat, simply because their usual supply of food has failed; the leaves have fallen, and they are compelled to wait until spring has produced a fresh supply. But in the case of these turnip grubs it is very different: their food, being roots, is to be found at all seasons, and the work of destruction goes on incessantly, and is only limited by the supply; indeed the various agricultural roots are often harvested with the enemy concealed in the interior.

There is small need for me to dwell on the injurious character of this insect; every farmer and every gardener must have been convinced of this during the dry summer and autumn of 1864. The great cause of the evil may be traced to the use of poisoned wheat, provided intentionally for the rooks, and perhaps unintentionally, but certainly

to an equal extent, for the partridges: this has been carried so far that the legislature has at last stepped in to protect the farmer from himself, to compel him to stay his suicidal hand. Well aware am I that a disposition has arisen among that better and more educated class of farmers into whose homesteads the 'Zoologist' is penetrating, to regard this subject in a more logical and more scientific point of view.

EDWARD NEWMAN.

Life-Histories of Sawflies. Translated from the Dutch of M. Snellen van Vollenhoven, by J. W. MAY, Esq.

(Continued from page 9477).

NEMATUS WTTEWAALLI (*v. Voll.*)

Larva and imago undescribed.

Nematus rufo-flavus, antennis, vertice, fronte, et tarsis posticis fuscis, alarum stigmate pallide fusco, dorso metathoracis et mesothoracis, macula basali abdominis ac maculis pectoralibus nigris.

I cannot find that this wasp has been described by any author who has treated of European sawflies; as far as the larva is concerned this may very well have been confounded with nearly allied species; for in the absence of any but superficial descriptions of such very similar larvæ it is extremely difficult, not to say impossible, to determine which of the allied species the writer has really had in view.

I received the larva from Dr. Wttewaall, who sent it me from Voorst and Utrecht, also from Mr. de Roo van Westmaas from Velp; I also took it myself near Leyden and at Sterkenburg near Driebergen, in the year 1861, when a considerable number of willows near ter Wadding, between Leyden and Voorschoten, were entirely unleafed by this insect.

It lives gregariously until spinning up, almost always attaching itself by the eight or ten anterior pairs of legs and raising the body frequently in the air. How and where the eggs are deposited I do not know. The young larvæ differ very little from the older, being only somewhat darker in colour.

The larvæ live on different species of willow; de Roo found them on Salix capræa, Wttewaall on Salix alba, and I myself took them on

Salix babylonica and S. pentandra. They are eminently voracious, and seem as if they did their best to get through their larval stage of existence as quickly as possible, for they feed without intermission. Those sent to me from Voorst were received on the 5th of May, those from Velp on the 6th of July; I also found them at Sterkenburg at the end of July, and near ter Wadding in August and September. We always found half-grown and full-grown individuals on the same tree. From the above it will be seen that it is very difficult to determine how many generations there may be in the course of a year; four may be looked upon as certain,—there are probably five.

The following will serve as a description of these larvæ.

Head shining, black, fuscous between the eyes and at the base of the trophi. Legs twenty. Body slender; the first segment orange without black spots; the second to the tenth segments pale sap-green, with three black lines on the back, the edges of which lines are not even, nor emarginate, but as it were frayed out. Below the plane of the white tracheal tube, which can be perceived through the skin, are some oval and circular shining little black knobs, namely, on the second and third segments three spots united so as to form a line; on the other segments first an oval spot, then two smaller nearly circular, and below this first row a second, consisting of a small vertical elliptic spot and a larger horizontal one, elliptic, and evidently consisting of two joined together. The last two segments are orange and unspotted, the thirteenth in young individuals being green at the base. The anal valve is orange, with two little orange spines; the ventral surface yellowish green and unspotted. There are some little hairs about the legs and at the anus.

The first pair of legs is orange at the base, glassy green further on; the two following pairs greenish, with a small black spot at the base. these horny thoracic legs have a thick pad on the penultimate joint, the last joint being armed with a black claw. The middle legs are green, unspotted; the anal legs orange.

The larvæ did not all attain the same size; some when full grown were only fifteen millimetres long, others eighteen millimetres. When they were about to change they descended to the ground and crept about among the dried leaves, and shortly after constructed simple cocoons of a yellow colour, which were placed close together and connected by a loose web. Comparing these cocoons with those of the preceding species, a great difference will be apparent, so as to render remarkable the close agreement between the imagos.

In the summer the larvæ change into pupæ within ten or twelve

days; those of the autumn brood probably only reach this stage by the spring, thus after an interval of seven months. The pupa represented at fig. 6, enlarged $2\frac{1}{2}$ linear, is very pale yellowish green, with dark eyes, a little green coloration being observable on the prothorax, the margins of the abdominal rings and the last segment; the black and brown mass attached to this latter in the figure is the old larval skin. This pupa remained in that state for a very short time; a couple of days after the imago appeared. This was seven millimetres long, expanding to sixteen millimetres, thus being somewhat smaller than Nematus Salicis; it has otherwise so much resemblance to that species that it requires careful examination to separate the two. It will not be necessary to describe the imago in detail; but it will be, I think, sufficient if I state the points of difference between N. Wttewaalli and N. Salicis.

Nematus Wttewaalli is, as has been said, generally smaller, its largest examples resembling the smallest of N. Salicis. The antennæ of N. Wttewaalli are more fuscous, the head is darker, especially on the vertex. The wings have a redder, less yellow, tint; the stigma is brown, instead of black. The colour of both thorax and abdomen is a darker orange and not so much of a gamboge-yellow. The cenchri are entirely surrounded by black colouring, which colouring, moreover, extends to the second abdominal segment (fig. 7). Lastly, on the prothorax, near the coxæ of the first pair of legs, is a small black spot (fig. 8 *a*), and the mesothorax or breast, between the first and second pair of legs, was entirely black (fig. 8 *b*). In fact, the points of difference are greater than a cursory examination would have led one to suppose.

I obtained from this species four examples of Tryphon exstirpatorius, *Grav.*

I am acquainted with another species of Nematus, which, in the larva state, has a very strong resemblance to N. Wttewaalli, but is of a grayish green colour, and lives on poplars. The imago has a black stripe over the abdomen. For want of a good specimen for drawing, and from which to write the description of the imago, I am unable to insert it here in order to complete the group.

Nematus trimaculatus.

For the larva, see De Geer, 'Mémoires,' Vol. ii. p. 264, No. 17, plate 38, fig. 1.

Nematus fulvus, antennis supra fuscis, maculis tribus in thoracis dorso nigris, abdomine immaculato.

In the larval state this insect pretty strongly resembles Nematus Salicis (see plate 3), and in the perfect state Nematus fulvus, *Hart.* It appears to me that the imago has never been described, but the larva is described by De Geer, *loc. cit.*; his description is also referred to by Brischke, in his account of Nematus Salicis, where he speaks of a very nearly allied species which has probably been confounded with the one under consideration.

I have only once had an opportunity of examining these larvæ, and that was in September, 1859, at which time I found a number upon a poplar in my garden in the position in which I have represented one at fig. 9. They are very easily distinguished from N. Salicis by this position in which they rest, as also by the colour of the body and the distribution of the black spots. They have twenty legs, as have all the larvæ of Nematus with which I am acquainted. Head entirely shining, black, the first three and last three segments of the body are orange, the intermediate part bluish gray. The ventral surface and the first five pairs of abdominal legs are somewhat greener than the back, which is blue-gray; the stigmata are very small and obscure, the last pair of abdominal legs and the anal legs are orange. On the first three segments are a very few black dots, the largest being above the legs of the second pair. Along each side of that part of the back coloured blue-gray are three rows of shining black spots; these do not run together, and are most of them almost square; there are, moreover, two small elliptical spots just above each leg. Thus, besides the tint and the relative extent of the colours, the number of rows formed by these black spots affords a very good and ready characteristic to separate this larva from that of N. Salicis, N. trimaculatus having six and N. Salicis seven such rows. The last divisions, again, are but little spotted, the penultimate segment only having at the end two clearly defined transverse rows of round spots; above the anal valve is a shining black spot, below which are two little *black* spines (fig. 11). These larvæ were also very voracious and were almost continually feeding, sparing only the lower parts of the leaf-veins. Shortly after I had found them they went into the ground, but not to any great depth, and made their cocoons; these were double, having coarse meshes on the outside and were covered with grains of sand, the inside being polished, smooth, fine and of a dark brown colour. Fig. 12 represents the inner cocoon, which has been opened by the wasp, lying inside the outer cocoon, this latter being torn open on one side.

I was more fortunate with my brood than De Geer was with his;

on the 11th of May, 1860, out of six cocoons I got six females of the species of Nematus in question. My remaining larvæ appear to have dried up and died in the cocoons. I was sorry not to have got a male, but I did not consider this a sufficient reason for postponing the publication of this description, as I thought it best to publish these three so nearly allied species together.

At first sight I took these insects for Nematus fulvus, *Hartig*, but a close examination showed it to be a new species, and I felt the more sure on this head from the fact of all my examples being perfectly alike.

The imago is eight millimetres long, expanding to eighteen. Entirely shining reddish yellow, the upper surface of the antennæ being fuscous; the points of the upper jaws shining chestnut-brown; there is a little dark spot between the three ocelli, and three oblong black spots on the dorsum of the thorax. The anterior wings have a yellow tinge. The costal and postcostal nervures, the stigma, and the anal nervure are orange, the remaining nervures black.

The points of difference between the present species and Nematus fulvus of Hartig are as follows: the upper surface of the antennæ is not so dark in N. trimaculatus as in N. fulvus; the posterior margin of the scutellum is red, not black; there is no black line on the middle of the dorsum of the abdomen, and there is no trace of brown on the posterior tibiæ and tarsi.

I have not met with any of these larvæ during 1860 and 1861; should I, however, do so, and be so fortunate as to rear a male, I shall be happy to insert a description in this periodical, and give it as an appendix to some nearly allied species of Nematus.

Note on the Turnip Grub.—Last autumn, having a large field of Swedish turnips near to where I reside, I had an opportunity of making a few notes on the economy of Agrotis Segetum, or whatever it is that attacked the turnip-roots. In August and September, noticing large flocks of rooks and starlings hovering over and alighting on the field, I was induced to examine some of the turnips, and I found that the earth had been billed away by the birds to get to the insects. A little later I walked over the field, which comprises fourteen acres, and I could scarcely find a single turnip that was not eaten. The earliest sown turnips seemed to suffer most. Many of the larvæ retired into the earth with the first frosts, but a vast number did not enter the chrysalis state. I found them in the soil in winter in all stages of growth. When the field was ploughed, in March, the rooks and starlings were again busy; the latter, however, were not so numerous. The starlings were very tame; they would alight sufficiently near the ploughmen to permit a view of their burnished plumage. Besides the rook and starling, the thrush, the common hen and the Guinea fowl will eat these

larvæ greedily. Great havoc was committed among potatoes. I found them numerous among gooseberry rows and in waste places.—*George Roberts; Lofthouse, Wakefield.*

Proceedings of Societies.

Entomological Society.

April 3, 1865.—F. P. Pascoe, Esq., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'The Journal of the Royal Agricultural Society of England,' 2nd series, Vol. i.; presented by the Society. 'The Transactions of the Linnean Society of London,' Vol. xxiv. Part 3; by the Society. 'The Journal of Entomology,' No. 12; by the Proprietors. Hewitson's 'Exotic Butterflies,' Part 54; by W. W. Saunders, Esq. Doleschall, C. L., 'Bijdrage tot de Kennis der Dipterologische Fauna van Nederlandsch Indië,' Parts 1—3; 'Bijdrage tot de Kennis der Arachniden van den Indischen Archipel;' 'Tweede Bijdrage tot de Kennis der Arachniden van den Indischen Archipel;' by A. R. Wallace, Esq. 'The Entomologist's Monthly Magazine' for April; by the Editors. 'The Zoologist' for April; by the Editor.

Election of Members.

Captain Willoughby S. Rooke, of the Scots Fusilier Guards, and of Bigswear, Gloucestershire; R. S. Scholfield, Esq., of the Junior Carlton Club; and Dr. Sichel, of Paris, were severally ballotted for, and elected Members. Mr. Stephen Barton, of Bristol, was ballotted for, and elected an Annual Subscriber.

Exhibitions, &c.

The President exhibited a new species of Bolboceras from South Australia, which was found burrowing in the hard road at Gawler, near Adelaide, a habit similar to that of the European B. gallicus. The Australian species was described by its captor, Mr. Odewahn, as "making a noise like a Longicorn, by moving the small pulvilli beneath the hind coxæ."

The President read the following extract from the 'Athenæum' of the 18th of March, 1865:—

"Bottesford Manor, Brigg, March 13, 1865.

"In Saturday's 'Athenæum' (p. 352), it is recorded, that at the Meeting of the Entomological Society, held on March 6, 'Mr. Bond exhibited specimens of a gall found on a willow tree near Cambridge; the attack of the insect . . . caused a premature terminal development of leaves in whorls, so as to resemble a flower-head.' Galls of this kind are of very frequent occurrence on willows in this neighbourhood, and, I believe, throughout the whole of Lincolnshire. They are so common here that I have always supposed that they must be familiarly known to naturalists. They first show themselves in the latter summer and early autumn, but are not easily discovered until the tree sheds its leaves. When that happens the gall-leaves become prominent objects. Their form is singularly like that of a small rose, and the likeness is increased by the colour, which, in December and January, is a light brown, very often nearly

approaching red. As time goes on the brown becomes deeper, and when the green leaves shoot forth in spring the galls drop off. The likeness to a rose is often so complete that an uninstructed person might easily be led to the absurd conclusion that he had seen roses growing on willows. That this opinion was current at one time is proved by the following entry in the chronicle of John Capgrave, 1338: 'In that same yere welowes bore roses, red and frech; and that was in Januarie,' p. 207. This is another proof to be added to those accumulating daily, that the strange histories to be found in the records of past ages are not, for the most part, deliberate fables, but truths ill understood, or facts seen out of their proper perspective. There is a story told by an Irish writer, of a certain willow tree, which, having received the blessing of S. Coëngenus, straightway began to bear apples. (*Luc. Beyerlinck, Theat. Vitæ Humanæ*, t. 1, p. 921a), It is highly probable that the foundation of this legend must be sought in a similar direction.

"Yours, &c.,

"Edward Peacock."

Mr. W. W. Saunders exhibited a number of galls collected during the previous year in Southern Syria by Mr. B. T. Lowne. One was on a species of Acacia, from Engedi; another was of scaly or flaky material placed round the stems of Atriplex Italinus, from the Dead Sea; a third, probably the gall of a Dipterous insect, was on a grass; a fourth kind occurred on Reaumuria, from Ain Terebeh, Dead Sea; a fifth on Ærua Javanica, from Engedi; a sixth on a Salvia, from the same locality; and a seventh kind was found on a species of Tamarix, at Ain Terebeh. With respect to the first two, Mr. Saunders was unable to say with certainty whether they were the nidi of insects; the gall on the tamarisk bore great resemblance to that described and figured in the 'Transactions' some years ago (see Trans. Ent. Soc. v. 27, pl. ii. figs. 5—9), and was probably caused by one of the Buprestidæ. Mr. Saunders hoped to breed some of the perfect insects, and on a future occasion to supply further information, or at all events to lay before the Society accurate drawings of the galls.

Mr. F. Moore exhibited a small collection of Lepidoptera lately received, *by post*, from Captain A. M. Lang, from the North-Western Himalaya. It included various Polyommati; a fine new Chrysophanus from Kunawur; a small Anthocharis, allied to A. Cardamines, also from Kunawur; two undescribed species of Pieris—one allied to P. Mesentina—from the Runang Pass (14,800 feet elevation); a specimen of Pieris Daplidice, which was found in considerable numbers in the village fields along the Spiti River; Gonepteryx Wallichii from the north of Simla; Parnassius Jacquemontii and P. Hardwickii—the former from the high passes (18,000 feet) in Upper Kunawur, Spiti and Tibet, the latter from the Runang Pass (14,800 feet). Of Nymphalidæ there were Argynnis Kamala and A. Jainadeva from the Simla district and Kunawur; a new Limenitis, allied to L. Sybilla, from North of Simla; a beautiful little Melitæa from the Kongma Pass leading from Kunawur into Chinese Tibet. Of Satyridæ, five new species of Lasiommatus, Hipparchia and Erebia, from the mountain slopes of Spiti, Upper Kunawur, and Tibet. Lastly, a single specimen of the curious form figured by Bremer, in 'Lepidopteren öst Sibiriens,' as Callidula Felderi.

Mr. F. Moore also exhibited two Entomogenous Fungi found at Darjeeling by Mr. A. E. Russell—similar to that figured in plate 277 of vol. iii. of Cramer's Pap. Exot., upon a species of Sphinx (Pachylia achemenides) from Surinam. One of these parasitic Fungi was upon a male imago of the common Indian Lepidopterous insect,

Spiramia retorta (Noctuidæ, Fam. Hypopyridæ), and the other upon the imago of a species of an undetermined Geometridous genus. Both these moths had the fungus springing, in more or less lengthened hair-like filaments, from the body, legs, palpi, antennæ, and along the nervures (but not from the membranous portion) of the wings on the upper side. Mr. Moore was informed by Mr. M. C. Cooke that these peculiar Fungi belong to the doubtful genus Isaria, the majority of the species of which are parasitic on insects or exuviæ: this genus is *not* regarded as autonomous, but as a condition of the ascigerous genus Cordiceps (Entomogenous Sphæriæ).

Mr. Janson exhibited a large collection of insects, principally Lepidoptera and Coleoptera, formed by Mr. A. E. Russell in Bengal and the Himalayas.

The President read the following extract from 'The Times' of the 28th of March, 1865:—

"*French Honey.*—A great portion of the immense quantity of honey consumed in France is supplied from the island of Corsica and from Brittany. Corsica produced so much wax in ancient times that the Romans imposed on it an annual tribute of 100,000 lbs. weight. Subsequently the inhabitants revolted, and they were punished by the tribute being raised to 200,000 lbs. weight annually, which they were able to supply. Wax is to honey in Corsica as one to 15, so that the inhabitants must have gathered 3,000,000 kilogrammes* of honey. When Corsica became a dependency of the Papal Court it paid its taxes in wax, and the quantity was sufficient to supply the consumption not only of the churches in the city of Rome, but those in the Papal States. Brittany likewise supplies a great quantity of honey, but of inferior quality to that of Corsica. The annual value of the honey and wax produced in that province is estimated at 5,000,000f."

The President read the following note:—

"Last July, when passing over the snow-fields on the top of Monte Moro, at an elevation of about 8000 feet, I noticed here and there a sharply-defined cylindrical hole in the snow, such as might have been caused by pressing a wine-cork into it. These holes were generally about an inch in depth, and at the bottom of each was either a small lump that looked like peat, or more frequently an insect, invariably either Dipterous or Ichneumonideous. I cannot account for the lumps of peat; but I imagine that the insects settling on the snow, became torpid from its low temperature, and sank gradually (or perhaps rapidly) into it, the hole being caused by the melting of the snow by the radiation of heat from the insect. The solar rays on mountain summits are asserted to be warmer than those falling on the plains, but there is no doubt that the radiation from solid bodies at great elevations is very marked. I took Cryptus tarsoleucus apparently not long alighted, and still feebly moving a wing or a leg. Perhaps it is only in the finest weather that insects would take so lofty a flight; however, a little lower down, Bombus montanus was not uncommon, enjoying itself amongst the flowers of a Linaria, but surrounded on all sides by patches of snow. Nearly up to the same point I frequently passed a little black moth, Psodos trepidaria, taking its short trembling flight. Higher than either of these, and among some short grass in the middle of the snow, I found a Byrrhus. These were the last evidences of animal life observed. But as flowering plants extend

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* *Qu.* kilogrammes or pounds?

to upwards of 10,000 or even 11,000 feet, it would be interesting to learn if insect-life in any form co-exists with them. A mammal, Arvicola nivalis, is found, I believe, at the highest point of phanerogamic vegetation."

In reply to enquiries, the President added that the insects in the snow were all dark in colour, that the holes were on the slope of the mountain on which the sun was shining directly, and that they were truly cylindrical, not hemispherical, or narrowed at the bottom. His explanation of the phenomenon did not meet with general acceptance; it was objected that radiation was scarcely likely to produce a cylindrical excavation; and Mr. A. R. Wallace doubted whether an insect of so small bulk and mass, and which could only give off by radiation the heat which it had first absorbed, was capable, even though of dark colour, of absorbing sufficient to produce the considerable melting of the snow around it which the President had described.

Prof. Westwood directed attention to Karsten's recently-published 'Beitrag zur Kenntniss des Rhynchoprion penetrans,' and protested against the generic appellation there applied to the Chigoe or Jigger. Linnæus was uncertain to what genus to refer the insect, and Latreille suggested that a new genus was probably required for its reception; the Rev. Lansdown Guilding had in MS. assigned to it the name Sarcophaga, which, however, had been previously employed amongst the Diptera. In a paper in the 'Transactions' of this Society (vol. ii. p. 199), Prof. Westwood had himself first given the generic characters and published the name Sarcopsylla; Dugés had about the same written on the Jigger, but referred it to the genus Pulex, and Guérin-Méneville, in the interval between the reading (May 1, 1837) and the publication (1840) of his (Prof. W.'s) paper, had on the plates of the 'Iconographie du Règne Animal' employed the name Dermatophilus, but his description was not published till long afterwards. The name Sarcopsylla was entitled to stand, according to the rule of priority, and Prof. Karsten was not justified in rejecting it, and falling back upon Rhynchoprion, which had been formerly used for a genus of Acari. Prof. Westwood also took credit to himself for having first shown that the Jigger was oviparous, not larviparous or pupiparous; Prof. Karsten had now shown how the sexes might be distinguished before the female became gravid: the 'Beitrag' also contained elaborate details of the structure and anatomy of the Jigger, but it did not contain one word on the generic arrangement, nor did it add one single fact to the natural history of the species. He (Prof. W.) was anxious to know what became of the eggs after they were deposited (say) in the toe of a human being? where did they hatch? and where and upon what did the larvæ feed? There could not be room for all the numerous eggs to develope in such a situation as above supposed; and moreover, in the vast majority of instances the eggs could not be deposited in flesh at all.

Mr. Bates had had personal experience of the attacks of the Jigger, but was unable to answer the Professor's enquiries; the common belief was that the body of the female burst within the toe, that the eggs hatched therein, and that the larvæ fed upon the flesh; but he had never had anything but eggs (no larvæ or pupæ) extracted from his own person; if during the process of extraction the body of the female burst, he had always applied tobacco-juice to prevent any ill effect.

Paper read.

Mr. Bates read a paper "On the Species of Agra of the Amazons Region."

In the introduction, the author treats of the affinities and describes the habits of this arboreal genus of Carabidæ peculiar to Tropical America, and then proceeds to

characterize sixteen new Amazonian species, whereby the total number of described species is advanced to 140. Forty-seven species of Agra and Agridia are recorded as occurring in the Amazons region; of these forty-two were found by Mr. Bates, and thirty-one of them were new to Science.

The employment by Mr. Bates of the two forms Carabici and Carabidæ to denote the same group of insects evoked from the President a strong protest against the indiscriminate application of two names to the same thing; he insisted also upon the desirability—to prevent confusion, amounting to a necessity—of having one uniform termination for the names of groups of co-ordinate value and importance; and further, that the proper termination for the name of a family was *-idæ*, the form almost invariably adopted by English entomologists, and which was now being adopted also by the French. Prof. Westwood also expressed himself in favour of the nomenclature introduced by Kirby, and the employment of *-idæ* as the termination of the name of a family or of a group of insects corresponding to one of the old Linnean genera.

New Part of the 'Transactions.'

A new Part of the 'Transactions' (Third Series, Vol. ii. Part 4) was on the table. —*J. W. D.*

Note on the Wolf Fish.—This fish very rarely comes amongst us: I was, therefore, glad to secure a half-grown specimen at a fish-stall; it measured 3 feet 2 inches. To my great disgust, barbarous hands had been laid upon it—it was gutted. Even in this condition, however, I can recommend it to any ichthyological friends who may come across it. Its cranial anatomy is very interesting: more especially striking is its formidable dental apparatus, with its broad crushing molars, forming a most effective whelk-mill, while the strong sharp grapplers in front of the mouth must render this powerful fish a dangerous neighbour to its scaly cousins.—*Charles W. Devis.*

Lump Sucker at the Land's End.—I have just had brought to me a specimen of the lump fish or lump sucker. It was alive, and was a female, and had, I think, recently spawned. Its colours were very dull; in fact, a mere dark blue over the head, back and sides, and a dusky white on the belly. It measured over all 24 inches clear, and from eye to fork 18½ inches clear. Both Yarrell and Couch figure the fish exceedingly well, and the only addition I have to make to their descriptions is that, in this specimen, the ventrals were obliterated without junction, or rather were lost in the membrane by which the sucker was enclosed. Probably the great size of the specimen will account for this. The fish was remarkably heavy for its size: it will be stuffed for our Museum here. I do not know that the fish is uncommon, except in this neighbourhood.—*Thomas Cornish; Penzance, April* 1, 1865.

Ostrea virginica, a new British Oyster, at Tenby.—Last year I made a collection of shells in the Bay of Cadiz, where I obtained many specimens of Ostrea virginica, which abounds there, particularly in the tidal portion of the River Guadalete, and grows to a great size, often more than ten and twelve inches in length. These oysters were hitherto unknown or unnoticed in Britain; but, from the many fragments of the shells found by me on the Tenby coast, I was led to suppose that they existed here

also; and now, having obtained some perfect and living specimens, I find that I was right in my conjecture. The largest I have as yet obtained is $5\frac{1}{2}$ inches long, 1 inch wide at the hinge, and $1\frac{3}{4}$ inch when measured at the distance of $1\frac{1}{2}$ inch from the hinge-end or beak, while the broadest part is $3\frac{3}{4}$ inches in width. The greatest external height of the shell is $1\frac{3}{4}$ inch. The half-deck-like and grooved hinge (the very distinctive peculiarity of this oyster) is of the usual triangular form, with a deep undulation in the centre, and measures three quarters of an inch in length; that is, from the back, or point, of the triangle, to the front, and $1\frac{1}{8}$ of an inch at the broadest part, or base, of the triangle. To avoid any damage to the shell by opening it with a knife, I preferred boiling it, and was therefore unable to draw or measure the animal in its living state; but even though shrunk up by the hot water, it presented a very different appearance from our well-known round Ostrea edulis when similarly treated, being oblong and straight-sided, and measuring $2\frac{1}{2}$ inches in length by $1\frac{1}{4}$ inch in breadth. The individual which I have described appears to be a young one; for in the full-grown Ostrea virginica of Spain the beak (and with it the hinge) frequently becomes depressed or bent downwards. I have, however, found the depressed end in other smaller specimens at Tenby, one of which, though very small (only 2 inches long by $\frac{5}{8}$ths of an inch in breadth), presents the most marked peculiarity of the O. virginica in its long narrow trough-like conformation, scarcely varying in width throughout its length. But here, as in Andalusia, the outline of the shell is very variable in different specimens,—a remark which applies to the whole family of oysters. The septum, or half-deck, which supports the hinge-plate is, moreover, a constant and unmistakeable feature by which to recognize the O. virginica, independent of its other peculiarities. I have also found at Tenby a very small specimen, little more than 1 inch in length by $\frac{5}{8}$ths of an inch in breadth, which has every appearance of being a young shell, but which has the "half-deck" with a deep hollow space receding beneath it, and this is prolonged into a tail-like projection, or spur, curving downwards to a length of $\frac{3}{8}$ths of an inch, and terminating in a sharp point. The depth of the shell itself is $\frac{1}{4}$th of an inch. I have not attempted at this season of the year to dredge, so that I have only been able at present to obtain these shells occasionally at low water; but that the O. virginica prefers, in England as in warmer latitudes, the mouth of a river, is shown by the greatest number of specimens being met with in the neighbourhood of the small stream which runs into the sea on the south sands of Tenby. But, as we might naturally expect, the fish cannot exist, in this cold climate, in a shallow and exposed situation; they are not, therefore, found in the stream itself, as they are at the mouth of the Guadalete, where, though every tide on receding from its muddy banks leaves the oysters more or less exposed, they are not affected by the change. Here, at Tenby, even within the influence of the warm current which softens the climate of this coast, they can only exist in a certain depth of water, though probably at no very great depth; but this and other points I can only hope to decide by dredging.—*Gardner Wilkinson; South Cliff House, Tenby, March* 31, 1865.

Note on Coronella lavis.—In Dr. E. Opel's most interesting and valuable account of the habits of the smooth snake (Zool. 9505), he does not mention the fact that it has the power of "stinking *se defendo*" (as White of Selbourne says of the common species). A specimen which I took in August, 1862, in the Valley of the Neckar,

gave very disagreeable proofs of its possessing this faculty, nor were our hands freed of the disgusting smell until after repeated washings. This example was about to cast its skin, and where the outer cuticle has been rubbed off the scales beneath show the fine steel-blue tint described by Dr. Opel. The Coronella is not very common in the north of Baden, and seems to be principally confined to the dry, thickly wooded glen of the Neckar. Dr. Opel states that the female lays a number of eggs; one in the possession of Mr. Buckland gave birth to six *live* young ones in October, 1862. May not the truth be that the animal is oviparous, but has the power of retaining her eggs up to the hatching point when in adverse circumstances? Perhaps Prof. Bell could help us to an explanation.—*Edward R. Alston; Stockbriggs, Lesmahagow, N. B., April* 6, 1865.

Note on the Squirrel.—On the 3rd of February I examined a male shot during the late hard frosts, in company with a female. It was strongly in season: the stomach was full of food and the duodenum of chyle. *Query*—Is the breeding time of the squirrel forwarded by a local abundance of food?—*Charles W. Devis; Queen's Park, Manchester.*

On the Food of the Squirrel (Sciurus vulgaris).—Allow me to corroborate the statement, quoted from Tschudi by your correspondent Mr. Alston (Zool. 9484), as to the squirrel sometimes digging up truffles (*Tuber cibarium*). Some years ago, at Elveden, one of my brothers, seeing a squirrel intently scratching a hole in the ground, went to the place expecting to find a nut or an acorn deposited there. To his surprise, there was nothing of the sort, but a freshly dug-up truffle. On his mentioning the fact to me I kept a look out, and it was not long before I watched a squirrel perform the same action. After giving the animal time to eat part of his prize, I walked up and secured some of the fragments. Blasius (*Sæugeth. Deutschl.* p. 274) mentions mushrooms as forming part of the squirrel's diet, but until I read Mr. Alston's note I did not know that any one else had observed it feeding on truffles.—*Alfred Newton; Magdalene College, Cambridge, March* 1, 1865.

Liverpool and other Rats and Salt Water.—Such readers of the 'Zoologist' as reside upon the banks of the Mersey must have been greatly edified (?) by learning (Zool. 9431) that its waters opposite Liverpool Docks at low tide is probably fresh and drinkable, the novelty affording yet another illustration of the adage, "Go from home to learn the news." Whatever may have been the case some two or three centuries ago, when Liverpool was a mere "creke of the Port of Chester," and the tidal influx infinitely less in proportion to the outflow of fresh-water, to say nothing of springs possibly existing in the bed of what was then a river, the idea at the present day is simply absurd and preposterous. In short, the Mersey from Runcorn Gap northwardly (notwithstanding its common designation) is a river no longer. It is a considerable estuary, whose huge volume of brine is and has long been constantly augmenting, through the gradual depression of the land, whilst the extensive lines of quay-walls upon either side have in a most remarkable manner straightened the previously circuitous tidal current here (and main channel), thus effecting an improvement in the natural scourage and deepening of the channel, invaluable to this the first sea-port of England and the world. So much for Mersey water: I now approach, as awe-struck as may be, the "mighty army of rats" asserted by your correspondent's informant to have issued, as if wont, from the warehouses, deliberately crossed the

(street and) quay, descended the slip and slaked their thirst with the water there, and thence retired in order due to their several tenements. Desirous of testing, as far as possible, the accuracy of so startling a report, accompanied by a couple of brother naturalists, I called at the hut specified on George's Pier-head, and here met an intelligent official of eighteen years' standing upon this identical location. After hearing the account read, he replied with perfect readiness that certainly he had never seen or heard of aught confirmatory; on the contrary, having formerly been many years upon the high seas, he was firmly convinced that rats would not *drink* salt water, though, like a shipwrecked man upon a raft, they might possibly, when hardly pressed by thirst, taste it *for once*, and this opinion is universal among "old salts." Determined, however, to gain from the public any possible confirmation of the statement, an enquiry from my pen appeared in one of our local newspapers, more particularly addressed to tide-waiters and dock-gatemen, the only reply to which also proves condemnatory of the theory. It elicited the following account, which I have reason to believe authentic:—"A friend of mine, a captain, tried an experiment with a rat during a voyage from this port to New York in the middle of summer. He procured a small box or cage, in the bottom of which he fixed a wine-glass, which he filled with salt water. Having caught a rat, he placed it in the box and kept it in confinement. He is certain, from close observation, that the rat did not taste the water, although apparently it suffered from thirst. After it had been confined a week, he offered it fresh water, a draught of which it seemed only too glad to get. He has also noticed, when in dock, rats descend by the fender-ropes to the surface of the water, but they ascended again immediately." In conclusion, I cannot but fear your correspondent has been imposed upon by some member of another "mighty army," *viz.* that of the "larking swells" of this place, who infest the district worse than any marsupial.—*H. Ecroyd Smith; Egremont, Birkenhead.*

Scarcity of Winter Migrants.—Several correspondents of the 'Times,' 'Field,' &c., have mentioned the immense flocks of redwings, fieldfares, bramblings, &c., observed in some neighbourhoods; here, however, it is far otherwise. Since I have taken an interest in Ornithology, I think, I never remember seeing so few winter migrants as this season. We usually get great quantities of bramblings, but, hitherto, I have not seen a single bird of that species. At the commencement of the winter a few tree sparrows visited our neighbourhood, but did not, as usual, remain through the winter, but took their departure before Christmas, I presume further south. Owing to the severity of the winter, since the commencement of the new year, dozens of fieldfares have perished for want of food; and yet I have not found a single redwing apparently suffering from a like cause: this I attribute to the latter's being more nearly allied to the blackbird and song thrush in its habits, *viz.* by frequenting the bottoms of hedgerows, thereby obtaining a sufficiency of food in the shape of mollusks and the pupæ of Lepidoptera. A few blackheaded buntings have remained with us throughout the winter: I do not recollect ever having seen any here before at this time of year. Even in the present enlightened age, we seem too much in the background to account for the variations in the routes of migratory birds. I think it is generally admitted that their normal course should be due north and south; but where are the migrants which do not deviate, either east or west, from the normal route? This may probably

be owing to adverse winds; still our winter migrants are not influenced by the trade-winds, monsoons, &c., of the tropical and sub-tropical regions; in fact, these latter winds will scarcely account for the occasional appearance of North-American birds on our shores. I should be glad to hear what theories have been advanced on this interesting subject.—*Henry Reeks; Manor House, Thruxton, Hants, March* 27, 1865.

Ornithological Notes.—Allow a humble votary of Oology to send you a line or two, in case they may be worth the trouble of insertion in your charming periodical, the 'Zoologist.' The other day, wishing to procure some specimens of the lesser redpole for stuffing, I shot four, one cock and three hens, and on examination, after skinning, the crops of all were full of the seeds of the common bullrush or "bob;" they were shot by myself on the edge of a large pond. I have killed specimens before, together with the siskin, off alder trees, where both seemed busily engaged with the buds of those trees. I can only suppose that the backwardness of the season has prevented these birds from obtaining their usual forage, more especially as there are alders by the pond. Not having my "Yarrell" at home, I have not been able to refer as to whether this information be new or not. I have this moment seen and heard the butcher bird (redbacked). The tree creeper also has begun to build in our summer-house between two pieces of bark.—*W. Jesse, jun.; Maisonette, Ingatestone, Essex, April* 9, 1865.

Backwardness of the Season.—The cold winds and frosts have thrown everything back again, killing many young plants which ventured to peep out in the warmer days we had a week or two ago: the cold since Saturday has been intense. Yesterday I picked up a poor robin quite dead from cold. The thrushes, which began to build some weeks ago, have apparently done nothing lately; a half-finished nest remains now as it was two weeks ago; they are doubtless waiting for more genial weather. A pair of starlings, which commenced building in my house-top on the 10th, and continued for some days, have left to join the flocks of their companions till the winter is over. Not a green leaf can be seen on the hedges, and the gooseberry trees are just bursting their buds. The rooks have apparently just commenced breeding.—*Richard Tyrer; Keighley, March* 22, 1865.

Early Arrival of Summer Birds at Freshwater.—March 18. My nephew shot a chiffchaff and a wheatear on this day, but both species had been seen two or three days earlier. April 3. I was out with my nephew looking for a pair of cirl buntings for a friend, when a single swallow (*Hirundo rustica*) passed us flying east. A yellow wagtail (*Motacilla Rayi*), several willow wrens (*Troglodytes trochilus*) and a wryneck were seen on the same day, also several wheatears: the wryneck is called here the "barley bird." April 4. Several swallows seen and plenty of wheatears. April 5. A large flight of wheatears, a flight of swallows, and some sand martins seen, and a fine male redstart.—*Frederick Bond; Freshwater, Isle of Wight, April* 7, 1865.

Pugnacity of "Cock Robin."—A neighbour of mine having long fed one of these favourites, he became so tame as to enter and remain in the kitchen during the late severe frost. Upon one occasion, when the window had been closed, he espied a rival outside, and immediately became so much inflamed by passion and absorbed in the intruder's movements as to heed nothing transpiring immediately around him, when he was quietly taken by the hand and ejected to finish his "little difference" elsewhere.—*H. Ecroyd Smith.*

Destructive Propensities of the Raven.—I should not have supposed, had I not had evidence of the fact, that the raven could prove so destructive, and that, too,

among birds of his own class, as the following history shows. About two years since I had a female raven, bred on the Sussex cliffs, which I allowed to roam at large in my garden, it having its wing cut. In July, 1863, a young herring gull, from the same locality, was procured and placed in the garden as a companion for the raven. For a long time these continued to live very amicably together. In August, 1864, another young herring gull was added to their number, and the three confined in an ample space, enclosed with a wire fence, in which was an artificial pond, and where all delighted to perform their ablutions. The last comer was the cock of the walk, and when he pleased would keep both raven and elder gull at a respectful distance. The first evidence of the raven's destructiveness was evinced by its attack on an unfortunate jackdaw, which happened to stray into the garden from a neighbouring cottage: this bird was speedily killed, picked and devoured, much to the chagrin of its owner, a boy, who prized it highly. On the 3rd of February, in this year, I made an addition to this happy family, in the shape of a very interesting little specimen of the common gull (*Larus canus*): this pretty creature was soon quite at home with the other birds, and all agreed pretty well for a few days, when one morning I was horrified at seeing wings, tail and feathers scattered about on the snow, the body having been picked and devoured. This so annoyed me that I had the raven driven out from the enclosure into the open garden; but this only made matters worse, as two days afterwards the older of the herring gulls, getting into difficulties by thrusting his head through the wire fencing, from which he was unable to extricate himself, was attacked by the raven, and before relief could be afforded, had his scalp torn off and the skull perforated by the powerful beak of its antagonist. About this time also a tame sparrowhawk belonging to the owner of the jackdaw before mentioned, was in the habit of coming into the garden; and, having duly cautioned the owner of the fate which awaited his bird if he did not confine it to his own premises, it was allowed to stray once too often, and speedily met the fate of the other birds. I was very anxious to save the only gull I now had remaining, yet very unwisely allowed the two birds to remain together in their enclosure, feeling confident in my own mind that, from the pluck and size of this gull (he being a larger bird than the raven), he would be able to take care of himself if he had but fair play. In this I was unfortunately mistaken, for a few days since, without our being made aware of any quarrel by the cries of the bird, we found the poor gull picked and partly eaten, which operation must have been performed very expeditiously, as it had been seen alive but a short time before. It would be interesting to know, from anyone who has had experience in keeping ravens with other large birds, and where, as in this case, they have lived amicably together for a considerable time, if it is usual for this destructive propensity to become suddenly developed. In this case, the thirst for blood being once roused, it was carried to the extent of destruction of every bird which came in the raven's way, in spite of a liberal allowance of meat, fish, &c., with which it was regularly supplied.—*James Dutton; Hammersmith, March*, 1865.

Sand Grouse, &c., near Keighley.—I have just seen, in the shop of Mr. Gott, bird-preserver, of Keighley, a fine specimen of the sand grouse: this bird, the only one seen, was killed on Oakworth Moor, near here, in June, 1863, and brought to him for preservation. He has also a rednecked grebe, shot in the River Aire in the winter of 1848: I believe it to be a female in its winter plumage, though time and light have so faded its colours as to make it somewhat difficult to distinguish. In March, 1859, a roughlegged buzzard was shot on Cullingworth Moor, and was preserved by him;

he has it still; it is a very beautiful specimen. He tells me he had once for preservation a hoopoe, the only one seen near here, which was shot at Ainsworth Shaw on the 14th of April, 1851. Mr. Gott is a very intelligent man, and well acquainted with the Ornithology of this district.—*Richard Tyrer; Keighley, March* 22, 1865.

Malformation of a Snipe's Beak.—Last February, along with five brace of ordinary billed snipes, I shot one with the beak so curiously formed that I made a note of it for the pages of the 'Zoologist.' A snipe, making a very peculiar cry, rose some seventy or eighty yards from me, and pitched again about a quarter of a mile distant. On reaching the place, my red setter "Dan" brought up with a dead set. The bird rose, emitting the peculiar cry "ku ku," and fell to my first barrel. Never hearing a snipe utter this note, I was confident of a *rara avis*, but on picking up my bird all thought of Sabine's and the brown snipe vanished: my bird was only a common Scolopax gallinago, a pale variety, and a bird of last year, but with a most peculiar beak; in fact, a perfect "recurvirostra," similar to no bird I know but the avocet. This peculiar formation of bill accounted for the strange cry. So perfect is the turn of the beak in both mandibles, that if the bird had been shot in any foreign country, it would be considered most probably a distinct species.—*H. Blake-Knox; Dalkey, Co. Dublin, March* 18, 1865.

Solitary Snipe near Thetford.—It may interest the readers of the 'Zoologist' to hear that on the 13th of March I saw, on the Little Ouse, near Thetford, a solitary snipe (*Scolopax major*): it rose within ten yards of me from a marshy place. I noticed particularly its steadier flight, the white on the tail, which it carried in a curious manner, the greater distinctness of its markings, and its greater size, as compared with the common snipe.—*M. R. Pryor; Croxton, Thetford, March* 14, 1865.

Abundance of Jack Snipe during the past Winter.—I can also bear witness to what I have seen recorded by several observers respecting the abundance of jack snipes during the past season. As is always the case when the smaller species is plentiful, the common snipe has been unusually scarce even in the Somersetshire peat-moors, one of its most favourite haunts in the kingdom. At Christmas time a full snipe was not to be bought anywhere in the fens. All through the winter in this neighbourhood jack snipes have been in the proportion of at least four to one common snipe. Last October the fens were so dry that there was no feeding for snipes. Consequently the birds in their autumn migration went elsewhere, finding themselves disappointed in what in ordinary seasons has always been a rich feeding-ground. The heavy snow-falls at the beginning of the year brought the fens to their customary state of moisture, and thus, on their way northwards to breed, many snipe were led to visit them, and at the end of last month and the beginning of this better sport has been had among the long-beaks than at any other time during the season.—*Murray A. Mathew; Weston-super-Mare, April* 11, 1865.

Spoonbill near Helston.—An unusually adult spoonbill was killed, on Tuesday last, on the banks of the Loe Pool, a lake barred off from the sea by a mound of shingle, about two miles from Helston. The occipital crest is about three inches long, and probably would have been far better developed in another fortnight.—*Edward Hearle Rodd; Penzance, March* 24, 1865.

Ruffs and Reeves in Cornwall.—I observed at Mr. Vingoe's laboratory two ruffs, one with the head and neck white, and apparently preparing to turn out the ruffed feathers. I am not acquainted with this bird in its nuptial dress; those that have appeared here have been almost entirely in the winter; the specimen now under notice

gives me the idea of being a bird of last year, and that the *full* ruff will not appear. How old are the male birds before they put on their full *court* dress?—*Edward Hearle Rodd.*

Note on the Rednecked Grebe.—During the last three weeks I have bought five specimens of this bird in the Birmingham fish-market, three of which were killed on the Fern Island, Northumberland, and sent here from Scarborough with fish. The three killed on the Fern Island, two males and a female, I bought on the 3rd instant: the female measured, from tip of bill to rump, 1 foot $5\frac{3}{8}$ inches, and weighed 1 lb. $5\frac{1}{2}$ ounces; one of the males 1 foot $5\frac{7}{8}$ inches, and weighed 1 lb. $7\frac{1}{2}$ ounces; the other 1 foot $7\frac{1}{2}$ inches, and weighed 1 lb. 12 ounces. The remaining two I bought on the 20th instant; one measured from tip of bill to rump 1 foot 6 inches, and only weighed 1 lb. $2\frac{1}{2}$ ounces; it was in a very emaciated condition: the other weighed 1 lb. $12\frac{1}{2}$ ounces, and measured 1 foot 7 inches. Is not the male measuring 1 foot $7\frac{1}{2}$ inches from tip of beak to rump a large bird? I observe Mr. Morris states the length of the male is from 1 foot $4\frac{1}{2}$ inches to 1 foot 6 inches.—*C. B. Hodgson; Hunton Hill, near Birmingham, March* 21, 1865.

Great Crested Grebe in Warwickshire.—A fine bird of this species, in beautiful clean plumage, was killed on the 5th of March, on the reservoir near Earl's Wood, Warwickshire: it measured from tip of beak to rump, 1 foot $10\frac{1}{4}$ inches. I have in my collection another, though not so fine a bird, which was killed in the same place in 1858.—*Id.*

Sclavonian Grebe near Salisbury.—As I believe this grebe is not frequently found inland, I thought its occurrence near this town might be interesting to some of the readers of the 'Zoologist.' On the 11th of February I was walking on the banks of the River Avon, about two miles from this town, in some of our beautiful water meadows, when I saw, at some distance off, a bird which I at first took for a dabchick, which are very numerous about here; but, as I found it did not dive on my nearer approach, I looked again, and at once guessed what it was. I had a young friend with me, whom I immediately sent to obtain a gun, and during three-quarters of an hour the bird allowed me to keep it within twenty yards of the same place, by walking at some little distance off the bank and heading it back as often as it had swam two or three yards off. It certainly (according to Meyer's description of it) does not seem to share in the shy nature of the other grebes, especially as I apparently missed it with the first barrel, on which it dived about four yards and came up again, when I killed it. I should think it a male bird in winter plumage; length 13 inches; the feathers on the head beginning to assume the appearance of a crest; breast and all under parts pure silvery white; top of head and all back parts dark, approaching nearly to black, the edges of the feathers being slightly lighter. The iris of the eye has a narrow circle of yellow round the pupil, and the rest carmine-pink, pink flesh extending also from the beak to the eye, and in a slight degree under the beak.—*Arthur P. Morres; Salisbury.*

Note on the Great Crested Grebe.—A beautiful specimen, procured from the person who shot it on Gorton Reservoir, near this city, was lately offered in Manchester Market. It is a female, in the second year's plumage, and most probably a straggler from Rostherne Mere, the nearest of their breeding-places: it was in capital condition, yet the stomach contained the largest and most compact mass of feathers that I have observed in these birds: there was no admixture of food, nor indeed any room for it. This feather-mass in the grebe's stomach is a matter requiring elucidation. The

feathers are supposed to be the bird's own, and further supposed to be swallowed accidentally in the act of preening, and still further supposed to be regurgitated together with fish-bones, &c. The first part of the theory is, I think, correct; the second is, to say the least, extremely doubtful; it might be allowed to account for a few feathers or occasional feather-pellets analogous to the hair-balls of ruminants, &c.; but it would seem passing strange that so large a quantity of feathers should be constantly swallowed by accident—an accident occurring seldom or never to similar birds with similar mandibles, plumage, food and habits. As to the supposition of ejectment upwards, can any one supply an observation of the fact? In other divers, at least, the passage of the whole of the fish-bones through the intestines can be demonstrated. In a second specimen procured in the market the mass of feathers was much less compact, and mixed with it were vertebræ and cranial bones of two small dace. Two other specimens have been offered for sale, but their condition precluded purchase. The skeleton of the grebe affords the ornithologist many highly interesting points of observation.—*Charles W. Devis; Queen's Park, Manchester, March* 11, 1865.

Note on the Blackthroated Diver.—With the three grebes killed on the Fern Island came a blackthroated diver, also killed there. It was a male, and measured from tip of bill to tip of tail 2 feet $2\frac{3}{4}$ inches, from tip to tip of outstretched wings 3 feet $9\frac{1}{4}$ inches, and weighed 4 lbs. 9 ounces.—*C. B. Hodgson.*

Ivory Gull at Weston-super-Mare.—One day last month a magnificent specimen of the ivory gull, in full mature plumage, was shot on the little island of Birnbeck at this place. This is the second adult ivory gull which has been obtained at Weston-super-Mare within the last few years.—*Murray A. Mathew; April* 11, 1865.

Ornithological Notes from Shetland. By H. L. Saxby, M.D.

(Continued from page 9526).

February, 1865.

Hooper.—It is so seldom that hoopers arrive here on their way northwards before the middle of March, that the appearance of a small flock so early as the 8th of February can only be considered as accidental. They alighted upon the voe at Baltasound about an hour after sunset, and on being disturbed early next morning flew off to a loch about a couple of miles distant, and settled upon the ice. Some people who happened to be passing that way very nearly succeeded in catching them in their hands, for the hoopers, being either unwilling or unable to rise from the frozen surface, shuffled awkwardly to the shore before attempting to take wing, but once clear of the ground they flew away with their accustomed vigour. Although it was dark when they arrived their peculiar cry at once betrayed their presence. So far as I am aware they always rise facing the wind; therefore, in shooting them from the land, one can often obtain a fair shot by running in from the windward side and waiting until they pass over-

head. This plan will answer even when they are sitting far out of shot from the shore, for they rise so heavily that only a very slight elevation is attained by the time the first fifty or sixty yards have been traversed. For similar reasons, sailing down upon them before the wind affords a good chance, but an opportunity of doing so very rarely occurs, owing to their preference for the lochs.

Peregrine Falcon.—Birds of this species have been seen in couples all the winter, but I have had no means of ascertaining whether these were *pairs*. In Shetland, as in most other places, conjectures as to the sex of a bird are so frequently erroneous, that although the statement of the inhabitants that the peregrine "pairs for life" is probably correct, it still requires confirmation.

Heron.—Herons have not yet left. Flocks sometimes numbering as many as twenty or thirty individuals are often met with near the sea, sandy bays being preferred, especially such as are sheltered from the wind. Low tides frequently tempt these birds to seek their food among the rocks, although the slipperiness of the latter seems to render their footing somewhat insecure. It is amusing to see a heron running over them suddenly fall flat upon its side, a mishap that I have witnessed more than once, but upon no occasion did the bird make the slightest exertion to save itself by means of its wings. In every specimen which has fallen into my hands, the claws, and especially the hind ones, have always been much worn and blunted, as though they had been ground down upon a coarse stone. In one, shot last autumn, the claws had become reduced to mere stumps.

Glaucous Gull.—There are still many glaucous gulls remaining, but these are nearly all young birds, none of the old ones which left us early in the season having yet returned.

Greenfinch.—A few greenfinches are still lingering about the gardens. All of those which flew into the houses and were captured have now become quite tame; but the old males at first displayed considerable unwillingness to submit to restraint. Their chief food is oats, of which they appear to be extremely fond.

Fieldfare.—Early on the morning of the 15th of February (wind S.E.) about five hundred fieldfares arrived. Early next morning the wind had changed to N.E., but not one was remaining.

Common Bunting.—Several flocks of common buntings appear here every winter. A few days ago an individual of this species, having the middle of the back perfectly white, was seen by me in the garden, where, singularly enough, I observed either that same one, or another marked in a precisely similar manner, four years ago. As upon

the present occasion, it only remained for a short time, but none like it have been seen during the interval.

Rock Dove.—Rock doves are still in very large flocks, but couples are frequently observed, especially near the caves. Couples are also constantly to be seen arriving among and departing from the main body. At almost all seasons I have seen them in what I supposed to be pairs, a supposition which dissection has invariably proved to be correct, so far as may be judged from the fact that they were of opposite sexes. Unfortunately, I have in many instances omitted to notice their age; therefore it is quite possible that some of the supposed pairs were merely couples of young birds from the same nest.

Scaup Duck.—Scaups are never abundant in this neighbourhood, but this winter they are unusually scarce, although two or three are always upon the voe. I have never seen them here in flocks, even in the most favourable seasons. They prefer the sea to the lochs, and approach the shore mostly at high water, the chief attraction being the mouths of burns, but for what reason it is difficult to say, for in the stomachs of those killed in such places I have never found any article of food which could not have been readily procured in salt water. Their curious habit of stretching forward the head, and at the same time opening the bill, has often been remarked; but here at least, although it is most frequently exhibited in spring, it is certainly not peculiar to that season alone. The scaup is an excellent diver, and when near the shore (the only situation in which I have timed its movements) it continues submerged for about twenty-four seconds. Although it is decidedly less shy than most other ducks, it is generally sufficiently upon the alert to be able to escape the shot by diving to the flash. In the stomach of an adult male which was killed on the 28th of February, I found sand, shells, and the remains of crabs.

Cormorant.—I first observed cormorants in spring plumage about the end of February, by which time the few scattered white marks upon each thigh had given place to a distinct white patch.

Herring Gull and Lesser Blackbacked Gull.—About the end of September the head of the herring gull becomes spotted with dark gray. On the 27th of February I first shot specimens having the head quite free from those spots, although but a few days previously not one whiteheaded bird could be obtained. Precisely similar changes occur in the tame lesser blackbacked gull at Halligarth. In it the last dark spot disappeared on the 25th.

Guillemot.—Guillemots are returning to Burrafirth in considerable numbers; but they are never seen upon the rocks until much later.

Purple Sandpiper.—Purple sandpipers are still numerous, and, judging from their movements in former seasons, they will yet remain with us many weeks. Specimens shot a few days ago differ but little in appearance from those which were procured in early autumn, except that, after the wear and tear of the winter, the plumage has lost a good deal of its gloss, and the edges of the feathers are rather worn. In Hoonie, where these birds are but little disturbed, they are exceedingly tame. By allowing the boat to drift past the rock upon which they were standing, I have sometimes almost touched them with the rested oar. Sometimes instead of flying off they merely crouch among the sea-weed.

Hooded Crow.—This hard weather is driving the hooded crows to the sea-shore. Many of them are in couples, but there are still some flocks of considerable size. Macgillivray states that they remain paired throughout the year, and I have been told that these flocks are composed of young birds only. I know one pair well by the broken leg of the male, and these two most certainly remain together all the year. The well-known habit of breaking open shells by dropping them from a height upon the rocks may be constantly observed here. Not only shells, but bones also are treated in this manner, the bird rising to the height of about fifty feet, sometimes much less, and then letting them fall, following them very closely in their descent. I have read a most vivid description of the process, concluding with an appropriate remark upon the wonderful instinct which leads the bird to select a spot suitable for the performance, together with one upon the marvellous accuracy of its aim. Perhaps my opportunities have been less favourable than those of other observers, but unfortunately I have repeatedly seen the bone or the mollusk dropped upon soft sandy ground, and even upon short grass. In most cases, however, it has been dropped upon the shore, where a nice aim indeed would be required to avoid the stones. Once I saw a hooded crow drop a piece of bone upon the only patch of sandy ground on a long line of rocky coast, and it was only after frequent and persevering trials that the bone was accidentally broken upon a small rock. Now had that spot been the only *rocky* one in the neighbourhood, or even had it been occupied at the time by some Shetland Æschylus, I should doubtless have lost no time in presenting a full account of the fact to the readers of the 'Zoologist' in illustration of the almost human sagacity displayed by the hooded crow.

Raven.—Ravens seem fully to appreciate the time-honoured remark as to the propriety of having "two strings to one's bow,"—indeed

many of them have at least half a dozen. Unlike the crows, they are very seldom driven by the weather to seek their food by the sea-side, for the raven's harvest only begins when snow and wind compel weakly and starving animals to creep to the walls for shelter. Failing these, poultry and eggs can always be procured, and there is always corn to be had in the yards. They have already committed considerable damage. Scarcely a sheep or a pony lies down exhausted with cold and hunger without being attacked and blinded by these mischievous birds, and then left to certain death. Many attempts have been made to drive the ravens from Shetland, but they have invariably failed. Traps are almost useless, and guns, if effectual for a time, soon become equally so. Poison would no doubt fully answer the purpose; but whoever used it would be considered responsible for every death which might occur in the farm-yards for many years afterwards. It is by no means difficult to get within shooting distance of young birds, but the old ones are extremely wary, especially in those parts where guns are much in use. Even when they are feasting upon carrion at the foot of a high wall, it is not often that they can be approached, for so suspicious are they that they will constantly interrupt their meal by rising upon wing for a few feet, and then if the expectant gunner be observed his chance is lost. Occasionally, however, this habit defeats its own purpose, for when there happens to be any place of concealment within a hundred yards or so of the spot it is easy to run up as the bird disappears, and thus make certain of a shot. In a case of this kind, the raven is always sadly "taken aback," and seldom fails to utter a confused croaking sound as he clumsily endeavours to fly off, his own haste only serving to increase his embarrassment. I have often succeeded in shooting them by hiding among the bushes at Halligarth, or by crouching in the angle of a wall which lies in their track, for they have regular hunting grounds, which they traverse most methodically several times in the course of the day. An angle formed by the junction of two walls forms an excellent hiding-place, the side which is selected depending upon the direction of the wind, for ravens, like most other birds, greatly prefer flying to windward. When engaged in hunting they scarcely ever cross a wall abruptly; their habit is to sail slowly along its top, keeping exactly above it, and following every bend so as to be able to inspect both sides at once. When larger game does not meet their view, there is always a good chance of poultry. It is probable that in these situations they procure the field-mice which are sometimes found in their stomachs. Ravens seem to be well aware how near they may approach man with

impunity. A gunner is kept at the respectful distance of about eighty yards, field labourers are regarded with less caution, but a rider will not cause any alarm before he is within easy stone's throw. Some years ago I accidentally discovered a very successful mode of shooting them, the only objection to it being the expenditure of time which it occasions. I was lying upon the heather, keeping my gun beneath me to shelter it from a slight shower, when five ravens appeared in the distance, and soon catching sight of me they commenced hovering and croaking overhead. Their curiosity was evidently excited, and they showed every disposition to cultivate a closer acquaintance; but although I stirred neither hand nor foot, about half an hour passed without any further advance upon their part. Presently the profound truth dawned upon me that dead animals never move their eyes, and accordingly, to make the resemblance as complete as possible, I nearly closed my own. Very shortly afterwards they began to wheel nearer, croaking more loudly than before, and occasionally alighting upon a distant hillock, and at last, when they came within easy range, I started up suddenly, and killed two. Upon several other occasions I have shot them in a similar manner, but they never come within reach either when the gun is exposed to view or when my eyes are open. Although they are so cautious upon these occasions they will fearlessly approach a pony even when it is giving very evident signs of life. A raven will often sit until a dog is almost within reach, and then rise slowly and with apparent carelessness; but this indifference is only assumed, for an aggressive movement on the part of the dog is nearly always accompanied by a hurried ascent upon that of the raven. Sometimes, however, as in a case which occurred here a few years ago, the raven's impudence brings its own punishment. A dog which had long been very much annoyed by one of these birds, which frequented his master's farm, suddenly gave up all attempt at retaliation, and was repeatedly seen to proceed upon his way with great apparent unconcern, although his tormentor was evidently using every means to provoke the usual snarl and its accompanying unsuccessful spring. Seemingly in despair of ever being able to grapple with his enemy, the dog could never again be enticed to forget his own want of wings, and consequently the raven grew bolder and bolder, hopping along almost beneath his very nose, and sometimes even striking him with its claws. One day, however, as the dog was passing along a low turf-wall, the raven thought fit to repeat the performance, keeping most provokingly a little in advance, and occasionally varying the amusement with a croak or a sly pounce. The dog trotted along as briskly

as usual, looking neither to the right nor to the left. Then the raven, making a short circuit, again assailed him from above, and, passing over his head, was about to alight deliberately upon the wall, when the dog, making a mighty bound forwards, seized his enemy by the wing, and tore him literally to shreds.

HENRY L. SAXBY.

Baltasound, Shetland, February 28, 1865.

Ornithological Notes from Lanarkshire.

By EDWARD R. ALSTON, Esq.

(Continued from page 9442.)

Rook.—Rooks have now eggs; these vary much both in form and colour. I have one in my collection which is hardly larger than a song thrush's, and nearly oval in shape; others, again, are much elongated and pointed. A curious emigration of this species took place here a few years ago. A colony had seceded from the old rookery, and established themselves on some trees which were overlooked by a high bank; here they remained for a year or two, but one spring they were much persecuted by boys throwing stones into the nests from the bank above, and in one day the whole of the colonists deserted their nests (although many of them had nests), and went over in a body to a wood at Douglas Castle, six or seven miles distant, where they founded a new settlement, and have remained ever since. Here, as throughout Scotland, the rook is popularly known as the "crow," or "craw," the carrion crow being called the "huidy craw," while the true hooded or gray crow is almost unknown. The raven was formerly found in our hills, but seems now to be quite extinct. Perhaps I may be allowed to suggest that your contributors of "Ornithological Notes" should mention the local names of the various species, a subject of some interest, and one which has been much neglected in this country.

Jackdaw.—We have a good many of these quaint and self-satisfied birds; some build in deserted rooks' nests, others in hollow trees, whilst others, I am almost certain, build for themselves. The males of this and the preceding species feed their mates at this season by regurgitating the food from their crops. The jackdaw is rather a pugnacious bird at all times, but in the building season a convenient hole in a tree is sure to set two or three pairs at loggerheads. I was much

amused by such an encounter the other day; one pair had taken possession of a hole, where they were besieged, or rather blockaded, by another couple; every now and then a black head would appear at the entrance,—"kieugh, kieugh!" the attacking party were at it directly,—but the first pair had the best position, and were finally left in peace.

Wood Pigeon or Ring Dove.—These birds are also now sitting: the great warmth of their eggs when fresh from the nest must be familiar to your egg-collecting readers; probably this unusual amount of animal heat in the parent bird may be the reason why it builds so slight and cold a nest. Large flocks of wood pigeons arrive here about the middle of July to feed on the ripe blae-berries, on which they grow very fat: where these numbers come from I cannot tell. The Scotch name of "cushie," or "cushie-doo," is evidently a form of the old Saxon "cushat."

Curlews and Peewits.—Curlews and peewits arrive here to breed about the beginning of March, from the sea-coast and lower country. Both species are very noisy about nightfall, and even long after dark. The cry of the latter by night seems to me to sound quite differently from that uttered by day, being much more sharply and harshly intoned. The Scotch name of the curlew is the "whaup," which is doubtless derived from its low inward cry of "whau, whau, whau-u," seemingly a call to its mate, and very different from its loud and peculiar whistle.

Woodcock.—Like the fieldfares and other winter visitors, the woodcocks arrived this winter in considerable numbers, nor have they left us yet. Occasionally a pair remain to breed in this neighbourhood, but I have never yet been fortunate enough to find a nest. I noticed a remarkably pale variety of this bird lately in a shop in Glasgow; it was light brown above, with hardly any dark markings, lower parts almost white.

EDWARD R. ALSTON.

Stockbriggs, Lesmahagow, N.B.,
April 11, 1865.

Ornithological Notes from Lincolnshire. By JOHN CORDEAUX, Esq.

(Continued from page 9538.)

Green Sandpiper.—This beautifully marked bird, the most interesting of the Tringæ, is by no means uncommon in North Lincoln-

shire. One or two pairs of these birds may generally be found on a small stream which forms the eastern boundary of this parish. It is not, I think, improbable that they breed in the neighbourhood, as it contains several quiet retreats well adapted for this purpose: I have seen a pair of green sandpipers on our stream as late as the 5th of May; and two or three years since, in August, put up five of these birds altogether, probably a young brood, from the side of an osier bed. Often when first flushed they fly low down near the water, following the windings of the "beck," and then suddenly pitch down on some litttle mud bank. When repeatedly disturbed, however, they rise high, flying round the intruder in a wide circle, all the time uttering their wild shrill whistle, and then going straight off to some distant part of the stream. These birds feed by night as well as by day, as I have occasionally on moonlight nights put them up from the shallows in the streams, their well-known cry being then the only means of distinguishing them from a snipe.

Golden Plover.—A specimen of this bird was sent to me on the 1st of April. It had been shot in the marshes, and is probably the last I shall have an opportunity of examining this season, as in the course of a few days they will have left the neighbourhood. I once, however, saw a solitary specimen in full summer plumage as late as the 10th of May. As yet this bird shows but little signs of any change in plumage. On pulling out, however, one by one, the white feathers from the under parts I found the young crop coming underneath, the black feathers just bursting out from their blue sheaths. There did not, however, appear to be a sufficient growth of these new black feathers to make up the full summer plumage. Probably, as some ornithologists assert, the deficiency is made up by many of the white feathers becoming changed by the black pigment from white to black. In the bird I examined a considerable portion—at least two-thirds—would have been entirely new feathers.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire.

Ornithological Notes from Norfolk. By HENRY STEVENSON, Esq.

(Continued from page 9496.)

Rednecked Grebe.—In looking over my notes for the last two months (February and March), the most noticeable fact is the extra-

ordinary number of rednecked grebes which have visited our coast during a period extending from about the first week in February to the 25th of March. A few specimens invariably visit us in the winter months, though but rarely remaining late enough in the spring to have acquired the rich red throat of the breeding season; but their numbers of late, judging merely from the specimens brought to our birdstuffers for preservation, or exposed for sale in our markets, have far exceeded anything I have previously witnessed, or of which any local record, to my knowledge, exists. I have myself examined, or have heard of on reliable authority, at least five and thirty examples, brought into Norwich alone, a large proportion of them between the 18th and 28th of February, when from eight to ten were seen in a week, and these have been brought, with but few exceptions, from the immediate vicinity of the coast, as at Yarmouth, Salthouse and Blakeney. These would appear to have formed a part, and probably a considerable part, of a large flight, which, from some cause difficult to arrive at satisfactorily, has visited our eastern and south-eastern counties during the late severe winter, as from previous notes in the 'Zoologist' I find they were simultaneously met with in Yorkshire and Lincolnshire, and others were observed at the same time in the markets of Cambridge and London. Of those killed in Norfolk the chief portion appears to have been adult birds in full winter plumage, with perceptible tufts on either side of the head, and their throats grayish brown. Here and there a bird showed slight traces of the red patch, but not more amongst the early than the later specimens, as of the two I noticed myself as having most red on the throat, one was killed on the 10th of February, the other on the 28th; and an old male shot on the 25th of March showed no indications whatever of this nuptial tint. The stomachs of these birds, as usual, contained a mass of long curled feathers, closely matted together, and stained a bright green from some minute vegetable substance, apparently confervæ, from the surface of the water. Mixed also with these were small flinty particles, but, in such at least as I examined myself, no further indication of their usual food than a strong fishy odour.

Brambling.—These birds have been extremely plentiful throughout the winter. Several still seen up to the 25th of March, the male birds fast assuming the black head of the breeding season. Mr. Samuel Blyth, a good naturalist and a very accurate observer, assures me that whilst staying at Framingham, near Norwich, towards the end of January, just previous to the late severe weather, he observed for several successive days immense flights of birds passing low over the

fields in a southerly direction, and always about the same time, between three and four o'clock in the afternoon. Being desirous of knowing what they were he stationed himself under a fence, near their ordinary course of flight, and, making a long shot, succeeded in dropping a single bird, which proved to be a brambling. On the following day he repeated the experiment with the same result; and still at the usual time, from about half-past three till dusk, these birds kept passing on in one unvarying line, and continued to do so for about a week. Although fully believing from the first that these were migratory flocks, he was sufficiently interested in the matter to watch all one day, from the early morn, to ascertain if any of them would return again, but not one appeared till the afternoon, and then as before in large numbers and in the same direction.

Great Gray Shrike.—A single specimen of the gray shrike was killed at Hathersett, near Norwich, on the 14th of February.

Storm Petrel.—The only bird of this species I have heard of during the past winter was picked up dead on Kelling Heath, near Holt, about the end of last year, and was sent to Mr. Barlow, of Cambridge.

Redbreasted Merganser.—On the 4th of February I saw a splendid adult female in our fish-market, having a rich buff tint on the breast, quite as vivid as in some males, and a similar bird from Barton Broad was killed on the 9th of March. Two fine old males, in full plumage, were sent me from Salthouse on the 14th of February.

Goosander.—An adult female killed at Holkham about the 11th of February; a fine old male, near Lynn, on the 2nd of March; and two males, one adult and one immature, at the same place, on the 11th of March.

Smew.—On the 10th of February two immature specimens of this bird were exposed for sale in the Norwich Market. On the 17th a beautiful adult male and a young bird were killed at Yarmouth, and an adult pair at Southery on the 27th.

Divers, Black and Redthroated.—On the 4th of February a black-throated diver for sale in our market, having a perfectly white throat and a few white spots on the wing-coverts. On the 11th of February one specimen from Holkham and two from Gaythorpe, Suffolk, with white throats and no white on the upper parts. On the 18th of March a redthroated diver was killed somewhere on the coast, in full winter plumage, the throat white and the feathers on the back broadly tipped with the same.

Cormorant.—A remarkably fine specimen of this bird, in full

breeding plumage, with much white on the head and crest, and the patches on the thighs very pure, was killed near Hoveton Broad on the 23rd of March. It is said to have frequented that neighbourhood, in company with another bird, for more than a week; but they were far too wary to come within shot of the keeper, who only procured this one by having them driven over his head as he laid in ambush. This species is now rare in Norfolk, and particularly in mature plumage. On dissecting the above I found it to be a female, with three eggs, varying in size from a small marble to a pea, besides a large cluster not bigger than a pin's head. The stomach was quite empty, and though, from its perfect plumage, the bird might have been considered in good health, the internal parts showed evident signs of disease.

Sclavonian Grebe.—An adult male, in full winter plumage, killed on the Norwich River, near Coldham Hall, was brought to me on the 27th of February. The stomach contained nothing but feathers, as usual stained with green and having a brackish smell.

Velvet Scoter.—Another adult male was purchased in our fish-market on the 27th of February, but was not so rich in colouring as that previously described (Zool. 9495). The plumage had a decidedly weather-beaten appearance, which is particularly observable in the common scoter after long-continued and severe frosts. The stomach contained minute fragments of shells and portions of small crabs' claws.

Wild Swan.—An adult Bewick's swan, shot at Ludham, was exhibited in the market for sale on the 4th of March, and a fine hooper on the 20th. Two or three others have also been killed near Yarmouth, and one at Burlingham.

Wild Geese.—With the exception of a few brents, we have had scarcely any wild game brought to our market this winter, in spite of the severe weather. I have seen only one bean goose, and that on the 18th of March.

HENRY STEVENSON.

Norwich, March 31, 1865.

Ornithological Notes from East Sussex. By JOHN DUTTON, Esq.

Wild Geese. On the 13th of February large flocks of wild geese were seen flying westward, but some distance "off at sea." It was a bitter cold day; snow about two inches deep.

Wild Duck.—On the 14th of February several were shot at the Crumble Pond: one man shot four.

Wild Swan.—On the 20th of February a small flock were seen flying over the Crumbles.

Eagle.—A large eagle, probably Haliæëtus albicilla, was seen at Cuckmere Haven and Seaford for several days in succession, in January last. It was also seen off the Wish Tower here on the 17th of January. There is scarcely a winter but one is seen at this place, although seldom procured.

Brambling.—On the 29th of October, 1864, Mr. Bates, the bird-stuffer, brought me two mountain finches, shot at Compton Place, the seat of Mr. F. Howard.

Spotted Crake.—On the 31st of October I inspected two spotted crakes, shot at Wallsend, Pevensey, a day or two before. They are in the possession of Mr. Bates.

Velvet Scoter.—On the 2nd of November I purchased a fine female velvet scoter shot off here on that date by Mr. H. Sayers, a fisherman.

Snow Bunting.—On the 1st of November two snow buntings were seen here. They always occur here in hard winters, but not in great numbers. Numbers have been seen since that date.

Merlin.—On the 6th of January last Mr. Bates brought me for inspection a splendid old blue-backed merlin, shot at Abbott's Wood a day or two previously.

Rock Dove.—On the afternoon of the 23rd of January Mr. Harrison shot a fine specimen of the rock pigeon at Bell Tont Lighthouse, and which he presented to me. On the 25th another specimen was shot at Holywell.

Woodlark.—On the 31st of January Mr. Bates brought me a specimen of this bird, shot near here. On the 25th of January, when out shooting, I saw a small flock of woodlarks in a field where I had killed four or five in the severe winter of 1859-60. They are easily distinguished from sky larks on the wing by their smaller size and shorter tails. I believe they are generally to be met with here most winters if looked after.

Smew.—On the 18th of February Mr. Bates had brought him a beautiful smew in the immature plumage. Old males in the white dress are rare here, as I believe elsewhere.

Redthroated Diver.—On the 18th of February I purchased a beautiful specimen of the redthroated diver, picked up near the Redoubt by a fisherman. There are hundreds off here in the sprat season, and as there were 10,000 mackerel caught off Beachy Head the day previous by

one boat, it is probable that Mr. "Herring Bar," as the fishermen here call them, was after the mackerel.

Fieldfare.—Large flocks were about here during the late snow and frost.

Redwing.—More than usually numerous this winter. I have seen hundreds.

Golden Plover.—Great numbers have occurred this winter in our marshes and fallows. They are always winter visitants to these parts.

Very few rare things have occurred here this winter, which, considering how rich this district is in Ornithology, seems strange. Last year three bitterns were shot, but I have not heard of a single specimen having been killed this winter.

JOHN DUTTON.

51, Terminus Road, Eastbourne,
February 20, 1865.

Ornithological Notes from West Sussex.

By W. JEFFERY, jun., Esq.

(Continued from page 9498).

FEBRUARY, 1865.

Nuthatch.—The stomachs of two of these birds which I examined contained a considerable quantity of small gravel and small pieces of red brick, which seemed to have been worn smooth by the action of the gizzard. In one I found also some pieces of acorn? and one or two small seeds, and in the other a spider and two spiral snail-shells about a quarter of an inch long and a twelfth of an inch wide.

Peewit.—A large flock were seen on the 6th and 10th of February; after this a few, perhaps from twenty to fifty, were seen at different times up to the 24th; none seen after this latter date.

Golden Plover.—From the 16th to the 18th of February a flock of from seventy to eighty was seen. I have been told that much larger flocks were seen throughout the month, up to about the 25th, in the Manhood, but they have now entirely disappeared.

Grebes.—A specimen of the Sclavonian grebe, in the winter plumage, seen on the 1st of February: it had been recently killed on the coast. A great crested grebe, having a good bit of the chestnut colour about

the head, but not much crest, was killed about the 22nd of February.

Redthroated Diver.—One seen in Chichester Market on the 22nd of February. This species has been scarce on this coast during the past winter: I have not seen more than three specimens all through the winter, and in these the red patch on the throat has been absent, as is almost invariably the case with Sussex-killed birds. I have only known three specimens with any red on the throat to have been killed in Sussex during the last five years. Will Captain Hadfield excuse my asking the question, Has it been satisfactorily proved that this species, after having obtained the red patch, retains it through the winter? The Captain's note (Zool. 9499) would lead one to suppose that it is so; but Yarrell appears to have been undecided on this point, as he quotes evidence on both sides of the question.

Although we have had several pretty sharp attacks of frost this winter we have had no great quantity of Anatidæ on the coast, and what few have visited us have been of the commoner species, wild duck, widgeon, teal and a few pochards. I have heard of three wild swans having been seen at two places, probably the same three.

MARCH, 1865.

Redwing.—I have frequently, during the month, heard this bird twittering; one day in particular (the 13th of March), about noon, I met with a congregation of them in some trees in a low meadow; there was scarcely any wind, and the sun was shining brightly; it was, in fact, a spring-like morning, and the redwings appeared to be quite aware of it. As I was quietly walking closer to get a better view of them one or two of the birds nearest me gave the alarm-note, a kind of "chook," and in an instant the concert was stopped. After waiting a few moments some of the more distant birds began again, and soon they were all on twittering as before; the least movement on my part, however, caused the signal "chook" to be given, and again all was stopped, or nearly so. Occasionally a bird near me flew to a tree further off, uttering a note on starting somewhat resembling "ceete." In Bechstein's 'Handbook of Cage-Birds,' by Mr. H. G. Adams, this twittering is called "recording." The author says, at page 151, "In favourable weather it may sometimes, during its sojourn in this country, be heard 'recording,' as the bird-dealers term it; that is, running over its modulations, in a low, subdued tone, like one that is striving to recover the notes of some half-forgotten tune, or practising a yet imperfectly-learned musical lesson. The ordinary note of

the bird is, however, harsh and shrill. Sometimes a number assembled together at the top of a tree utter this in a low tone in concert, and then it falls on the ear with pleasing effect." These few lines would appear to agree with the ideas expressed by Mr. Harting (Zool. 9106).

Gray Wagtail.—A bird of this species, shot on the 22nd of March, had the black patch on the throat nearly perfect; the white line bounding the black was not, however, very distinct. The change of plumage in this bird is very rapid. The bird above mentioned had frequented the place where it was shot for some time, and on the 13th, being nine days before it was shot, no black was visible. The change appears to be a moult, not merely a change of colour, and is not confined to the throat, new feathers appearing on the forehead of a clearer gray than the old ones, and on the breast new feathers of a clearer and deeper yellow than the old ones. I have not seen a bird of the sort about since, but heard of one having been seen on the 31st of March. In the specimen obtained the testes were very large, about the size of No. 1 shot.

Lesser Redpole.—I shot two of these birds on the 14th of March; they were feeding on the seed of the alder; both were females, and neither uttered any note: after one was shot the other merely flew to the next alder, a few yards off, to await its doom. None seen since.

Green Woodpecker.—A female of this species was brought me on the 28th of March: it was trapped by a gamekeeper, and I have no doubt at a wood-ant hill, as the stomach contained several of these insects. The largest ova were about the size of No. 9 shot: I had anticipated finding them larger, as I have always understood this bird to be an early breeder.

Golden Plover.—Last seen on the 25th of March, when a flock of about thirty, on being disturbed, rose high in the air and disappeared in a N.E. direction. Some of the golden plovers that I have examined lately have had black feathers intermixed with the white ones on the breast.

Gray Plover.—On the 22nd of March I saw five gray plovers, which had recently been killed on the coast. None of these had any of the black feathers on the breast peculiar to the summer plumage.

Redshank.—A few redshanks are to be met with on the coast, and curlews winter with us. No whimbrels, godwits, or any of the waders which arrive in the spring, either to breed in this county or to go further north, have yet made their appearance here.

Spotted Crake.—A specimen of the spotted crake was shot on the 28th of March, at Appledram Common, near Chichester.

Water Rail.—The water rail was seen as late as the 29th of March. I have not ascertained that it breeds in Sussex.

Grebes.—I have lately seen a specimen of the rednecked and one of the Sclavonian grebe, which were shot at Pagham Harbour in February.

The wheatear, willow warbler and chiffchaff, which usually appear in March, have failed to do so this season, probably owing to the wintry weather that we have experienced during the middle and latter part of the month, and from the same cause we have had flocks of redwings quite late in the month, as tame as they have been at any time through the winter. Small flocks of fieldfares seen occasionally up to the 31st of March.

W. Jeffery, Jun.

Ratham, Chichester, April 7, 1865.

Ornithological Notes from the Isle of Wight.

By Henry Rogers.

Fieldfares.—These birds have been unusually abundant. You may find them in every meadow, ploughed field, or on the open down. They visit us every winter, but some years very sparingly: since 1855 I have not seen them in such numbers as during the present season.

Redwing.—This bird visits us every year in great numbers; but this year they far exceed their usual number.

Dartford Warbler.—I fear we shall shortly lose this interesting bird: the Government works are destroying its usual haunts, and the bird is fast disappearing; I have not seen more than three this winter.

Rock Pipit.—A beautiful variety of this bird was shot by Mr. T. Murrow, of the Royal Albion Hotel. The beak, legs and toes pale flesh-colour; the head, wings and tail white; the back and breast mottled: in fact, it was one of the most beautiful varieties I have ever seen. It was given me to preserve for Mr. Bond; unfortunately it was destroyed by a hooded crow which I brought from Egypt last year, he having entered my workroom during my absence; on my return he had torn the pipit all to pieces, except the head and legs, which I kept and have shown to Mr. Bond.

Starling.—Two varieties of this bird have been shot: one a beautiful cream-colour, with bright yellowish margins to the feathers; the other a light gray.

House Sparrow.—A fine variety of this bird; the head pure white, the other parts of the usual colour.

Turnstone.—One fine immature specimen in Alum Bay. This bird is very scarce with us.

Bittern.—I have a fine male and female bittern shot on the River Yar. There were three of them together, which is unusual, two being the most I have ever known to have been seen together, though I obtained five specimens shot by the same river in 1855. I consider this the best shooting ground we have in Freshwater for wading birds and wild fowl.

Little Stint.—I have obtained two specimens of this bird, which is new to our list.

Temminck's Stint.—I have also obtained two of this species, which is another addition to our Isle of Wight list.

Purple Sandpiper.—I obtained one specimen of this bird near the Needles. It is here scarce with us.

Tufted Duck.—I obtained one specimen on the River Yar. It occurs every year, but not in any great numbers.

Redbreasted Merganser.—I shot one in Freshwater Bay. This bird occurs every year.

Common Shieldrake.—Several are shot every year. I obtained a fine male off Yarmouth.

Guillemot.—This bird has been very numerous. Several I obtained were in full summer plumage, which I consider very unusual, never having obtained one before at this time of the year in the same state.

Little Auk.—I have a fine specimen shot in Totland Bay. This bird is very rare with us.

Shag.—A fine immature specimen shot off the Needles. Twenty years ago this bird was common with us, but, like the chough, I fear it will soon be numbered with one of the things of the past. We seldom have a pair breed with us, although the cormorant breeds with us in immense numbers.

Redthroated Diver.—These birds have been very numerous. One day when shooting off the Needles, they flew by in hundreds. I know one man here who shot fifteen on one day.

HENRY ROGERS.

Freshwater, Isle of Wight.

Obituary Notice of William Sharp MacLeay, F.L.S.

Mr. MacLeay was born in London on the 21st of July, 1792. He was the eldest son of the late Alexander MacLeay, Esq., F.R.S., F.L.S., so long known and respected as the Colonial Secretary of this Colony, and also well-known in the scientific world as the Honorary Secretary to the Linnean Society. Mr. MacLeay was educated at Westminster, and passed with credit through the full course of study in that celebrated school. He subsequently graduated in honours at Trinity College, Cambridge. Shortly afterwards he received the appointment of Secretary to the Board of British Claims on the French Government, established at the peace of 1815. In the performance of this duty he spent several years at Paris, where he became the friend of Cuvier and other celebrated men of science in France. Having successfully performed the duties entrusted to him in the capacity referred to, he was, on their completion, and on his return to England, promoted, in 1825, to the higher and more responsible office of H.B.M. Commissioner and Judge in the mixed tribunal of Justice at the Havannah. He remained in that sickly climate for ten years, and there is strong reason to believe that, although he had accomplished the usual period allotted to man, his life might have been spared for several years more, but for the deteriorating effects of so long a residence in the tropics. On relinquishing the office of Commissioner and Judge at the Havannah, he retired from the public service on a pension of £900 a year. In 1839 he arrived in this colony, where he has resided ever since. Since his arrival he held the appointment of Trustee of the Australian Museum, until the state of his health compelled him reluctantly to retire. It was under his advice, and with his able co-operation, that the Act for establishing and endowing the Australian Museum was introduced and subsequently passed into law. Mr. MacLeay also acted for several years as a member of the National Board of Education, and for a short period as a member of the Executive Council, during Sir William Denison's administration, and before the inauguration of responsible government. Mr. MacLeay's health began to decline about three years ago, when he was attacked with that insidious and wasting disease, diabetes. Late in the afternoon of Thursday last he became unconscious, and in the evening about seven o'clock his spirit passed away without a struggle. He was buried on Saturday in the family vault at Camperdown.—*Sydney Paper, dated January* 30, 1865.

Notes on the Common Minah of India. By Major Norgate.

Linneus calls this bird Airidotheses tristis; why he called it "tristis" I am at a loss to understand, for the bird is about one of the most lively in India, and sports a plumage of several colours—black, snuff-colour, white, yellow, and the irides bright red with white dots; certainly snuff-colour predominates, but the colours I have mentioned can hardly be called "tristis." Well, this sad-coloured bird is most abundant all over India, both in the plains and, in the hot weather, at a considerable height up the hills. It belongs to the Sturnidæ or starling family, and flies about in small family parties of six or seven to twenty or thirty, but most often of the two old birds and their young ones for the season; and when a large flock is seen it consists of four or five families united for the time being, either in quest of food or from being attracted by the screams of two birds fighting, for there are constant misunderstandings going on among themselves, and they are most pugnacious. When two of these birds have a fight it generally takes place on the ground, and they seize hold of one another with their claws, beating their opponent with their wings, and roll over and over, uttering the most piercing screams: this soon attracts the whole family, and the old birds try to separate them, if one may judge from the severe pecks that are administered to both belligerents. Sometimes the whole family are suddenly imbued with the spirit of fighting, and have a regular set to, often ending in one having its wing broken: during these little wars the noise the birds make is quite surprising and very disagreeable.

The minah is a very sociable bird, and often selects the eaves of a verandah, a hole in a wall or a water-pipe for its nest; it will build in a room if it can get in and out easily; sometimes it selects a chimney, and the noise the two birds make when employed on their nest, coming down the funnel of the chimney into the room, as it were through a speaking-trumpet, has a most curious effect. The minah in size is about that of the common thrush, but from its habit of puffing out its feathers it sometimes looks twice that size. Its voice or note is very loud and powerful; at one time a deep croak, then a loud whistle. It is very laughable to see the way the bird makes these curious noises; it generally commences by two or three nods of the head, as if to inflate its throat, and then utters a series of croaks, grunts, thrills, varied by a whistle and a scream, with a few really pretty notes. When it flies off the ground or a tree it utters a low sort of shaky

scream, and when disturbed by a cat, snake or bird of prey, it sounds a warning note, very harsh and loud; this is often taken up by other minahs, so that the real cause of the noise may be a quarter of a mile off.

Minahs attend cattle when feeding or when lying down, and dexterously catch the flies which abound round the animal's noses, or are whisked off by their tails. This bird is not an adept in building, for its nest is a very slovenly finished affair, placed on some ledge of an inside wall or in the aperture of a gutter-pipe, where the stupid bird will build its nest three or four times, lay its eggs, perhaps rear its young ones half-fledged, and four times have its nest washed down by the heavy rain before it gives up the situation as a bad one. The nest is composed of dry grass, small sticks, old rags, pieces of paper and feathers, and from four to five eggs are laid of a dull pale blue; these are in size rather smaller than a thrush's. The male bird takes his turn upon the eggs, to allow the female to feed, and when he attends upon the female always seems to have a good deal to tell her, as a great amount of chattering goes on. The young birds are at first of a dusky brown, and accompany their parents for many days, on the ground or on short experimental flights from tree to tree; they are very importunate for their parents to feed them, even when they are quite big enough to take care of themselves, and I have often seen the female bird give her young ones a severe pecking to make them earn their own white ant or grasshopper.

In the evening the minahs of a neighbourhood collect in some thick-leafed tree and make a great noise until it gets dark, when they all remain silent; sometimes, however, in the dead of the night some dyspeptic individual, waking up from its sleep, will give a squeak, and it will be responded to by all the others in the tree, once, perhaps twice, and all is still again. Minahs are very early risers, for they begin making a few enquiring notes before the gun fires of a morning; when the report comes they all fly out of their roosting-places with loud screams and whistling, some one way, some another.

The food of the minah is worms, grubs, grasshoppers and other insects found in grass, varied by a little fruit; they eat bread, rind of cheese, boiled rice and raw meat, but I have never seen them eat dry grain of any kind. During the rains the minah catches the white ant in the air when these insects emerge from the ground, which they do then in tens of thousands: the bird is not very graceful in its flight after them, nor can it fly very quick, but nevertheless succeeds in catching a great many. I have been informed the minah will build a

nest in a tree, but this must be when the bird is a long way off any human habitation, as it never does so if there is any other place at hand. I have frequently seen the minah at work in a crow's or kite's nest, but this was not putting sticks there, it was taking them away.

The minah is met with strutting about in pairs, far away in the jungle, forty miles off any house or hut, but even then it allows you to approach within five yards.

I must say I like the minah; he is a jolly, noisy, chattering sort of fellow, never seems to lose his spirits on the dullest of rainy days or the hottest of evenings, and sometimes he rewards one with some really very rich notes, just to show what he could do if he had not studied thorough bass so much. He does no harm, and places much confidence in man; it is a great shame to shoot him, for after all he is not very good eating: the only time he is the least offensive is when he fills up your fire-place with two or three basket-loads of small sticks, which have fallen down the chimney in his clumsy attempts at building his nest, and this small fault of his is easily remedied by nailing perforated tin plates over the smoke-vents.

Although the minah has his own domestic quarrels, he lives very peaceably with other birds; crows, starlings, pied minahs and the large black flycatcher often join his family parties when hunting in the grass for insects, without any misunderstanding taking place.

T. P. Norgate.

Sealkote, Punjaub, India, March 13, 1865.

Ornithological Notes from Shetland. By H. L. Saxby, M.D.

(Continued from page 9572).

March, 1865.

Sky Lark.—Sky larks have been unusually scarce during the winter, but large numbers began to return early this month; they are now extremely abundant. Their song commenced on the 7th, a cold rainy day with N.W. wind, and it has since been constantly heard.

Common Bunting.—Common buntings also reappeared early in the month, joining with those flocks which had remained here throughout the winter. With the exception of the few which remain to breed, they will probably continue in this neighbourhood for at least another month.

Lapwing.—Between the 3rd and the 17th considerable numbers of lapwings arrived at intervals, and at once proceeded to their breeding stations, but as yet there is no appearance of nests.

Herring Gull.—Herring gulls are returning to the cliffs in which they breed, and, as is always the case in the pairing season, they now soar to a vast height and utter loud cries. At this time also, large flocks are to be seen closely following the plough, and while thus engaged they seem to be quite fearless, although at other times they are rather shy. They are also fond of visiting newly-sown fields, where they consume a very large quantity of grain; nevertheless, they are seldom molested while thus employed, the service which they render by destroying grubs and worms being considered cheaply purchased at the cost of such of the seed as is left uncovered by the soil. It is said that in consequence of this habit the stomach becomes unusually thickened in spring; this may be true, but among most of the sea-birds which I have examined I have observed great irregularity in this respect. In the herring gull especially the coats of the stomach have been as much thickened in autumn as in spring, and again in the latter season they have been unusually thin. In spring and summer these birds often come inland; long before sunrise I have seen the lawn at Halligarth whitened with their numbers, and from the examination of individuals shot in like situations I am inclined to believe that they visit them for the sake of feeding upon the small gray slugs which abound before the dew leaves the grass. About noon, after a hard morning's work in the fields, flocks of herring gulls visit the fresh-water lochs, where they will remain for hours dipping and trimming their plumage.

Guillemot and Kittiwake.—The number of guillemots and kittiwakes is steadily increasing, and, although they will not lay for some weeks yet, they began to return to the rocks about the 17th.

Puffins.—Puffins are returning to their breeding-places in their usual numbers. For some weeks after their arrival upon the coast none are to be seen in the cliffs, but about the middle of March they regularly visit their burrows a little before sunset, remaining there until early next morning. During the day they are only to be observed either upon the water or flying a little above the surface, and then it is very difficult to get near them, for upon arriving here they are very wild, and almost the only sure method of obtaining a shot is by waiting under the cliffs in the evening or about a couple of hours before sunrise.

Redthroated Diver.—On the 8th a redthroated diver was caught by

hand in a deep burn, to which it had doubtless wandered in quest of trout. It was a male, apparently a young one, and there was no appearance of red upon the throat. In swimming beneath the surface this species makes use of the wings as well as the feet.

Raven.—Ravens were first observed at their nests on the 11th.

Rock Pipit and Wren.—Rock pipits and wrens were first heard singing on the 12th. The song of the former, although short, is very pleasing, and, like the tree pipit, this bird sings while descending towards the ground, the tail being spread and the wings gently quivered during the performance. Frequently, but not invariably, singing commences during the previous ascent.

Ringed Plover.—On the 13th the flocks of ringed plovers which frequented the shore during the winter began to disperse, and small parties returned to their breeding-grounds. They are now very familiar, often being met with near houses, and occasionally venturing even beneath the very windows. Their usual note is now, in a great measure, exchanged for a variety of others, which are chiefly uttered during flight. At all times of the year they feed much at night, and although they are then easily approached it is difficult to steal upon them unobserved, for they are always upon the alert, and their cry of suspicion may be heard when the intruder is yet at a considerable distance. At night, when walking close to the edge of the sea, in order to avoid the snow upon the shore, I have often found myself able to approach nearly within arm's reach of a flock of ringed plovers, although they have evidently been aware of my presence in their neighbourhood for some time previously.

Oystercatcher.—I have elsewhere (Zool. 9091) noticed the regularity with which the oystercatcher arrives in these parts. On the 14th I saw the first of the season at Bluemull Sound, between the islands of Yell and Unst, but none appeared at Baltasound before the 18th, the very day upon which they arrived in that locality last year. When they first visit us they exert themselves but little, and are so regardless of danger that they may be easily shot; but the very opposite is the case as soon as they have recovered from the fatigue of their journey, and they remain very wild until the breeding season has fairly set in, when their boldness is almost unequalled even by that of the lapwing. The oystercatcher will take to the water and swim with ease when wounded, and not unfrequently it eludes pursuit by diving, an act which I have repeatedly witnessed. In these islands its food mainly consists of limpets and mussels, together with many species of small univalves, which are obtained at almost all states of the tide; but, so far as I can

ascertain, it never feeds upon the oyster, even in those situations where the latter abounds. It is not easy to imagine how the limpets are procured, although it is possible that experience may have taught the bird to strike them from the rock suddenly and without previously alarming them, and it is not at all unlikely that they are also picked up while feeding in shallow water before they have time to retreat within the shell. By way of experiment, I have easily detached limpets from the rocks by means of the bill of a recently-killed oystercatcher; but this can only be done by means of a sudden blow, otherwise the shell will be closed down so firmly as to defy all further effort. The common song thrush, as is well known, often betrays its feeding-place by allowing the shells of snails upon which it feeds to accumulate in one particular spot, and the oystercatcher has the same habit. On capturing a limpet it does not at once devour it, but carries it to a suitable place, such as a flat rock or a grassy ledge, where the operation of *unshelling* it is easier than it would be upon the slippery sea-weed. These collections of shells used to puzzle me greatly before their cause was ascertained, for they are often met with some hundred yards inland. Those birds which I sometimes see in confinement always place the limpet with the shell downwards, and then, running the bill round the inner margin with a peculiar tremulous motion, detach the animal as rapidly, and far more neatly than I can do it with a knife. I have never seen them use the foot to assist in the operation.

Goldeneye and Tufted Duck.—Goldeneyes and tufted ducks became more numerous about the middle of the month. The latter species seems to be less partial to sea-water than the former.

Longtailed Duck.—Many longtailed ducks are now returning from the south, remaining here for a few days upon their way. Upon these occasions they seem to prefer the lochs to the sea.

Merlin.—The number of merlins is perceptibly increasing. On the 15th I obtained a beautiful female specimen. When first seen it was sitting upon a stone devouring a snow bunting, and although it was driven up several times before a shot could be obtained, it never flew further than a couple of hundred yards at a time.

Snipe.—I first heard the drumming of snipe on the evening of the 17th, about an hour after sunset.

Great Blackbacked Gull.—Great blackbacked gulls have now perfected their spring moult, and now the bill and eyelids are much more brilliantly coloured than they were during the winter. This species has been more than usually abundant this season. As a rule

it keeps apart from other birds, except when attracted by unusual abundance of food, and it is always so wary that it is not often shot.

Black Guillemot.—Black guillemots are still to be met with, with as much white in their plumage as I have observed at any time in winter; but there is good reason to believe that all in this state are birds of the previous year. The black ones, however, are now by far the most numerous, but they are so unaccountably shy that it is a difficult matter to procure specimens, although in summer they scarcely take the trouble to move out of the way of a boat. They are now more especially wild in calm weather, but I have always observed that they are less willing to take wing during a strong breeze. They prefer rising head to wind.

Eider Duck.—The flocks of eider ducks having almost entirely dispersed, scattered pairs are now to be met with upon most parts of the coast.

Great Northern Diver.—The food of this bird having been everywhere abundant this winter, the number of individuals observed here has been very small, the greater proportion of them having been scattered over the whole coast. Of late there has been a very marked increase in their numbers.

Snow Buntings.—Snow buntings are returning northwards, and flocks of them are to be met with almost everywhere.

Glaucous Gull.—Glaucous gulls are revisiting us in small parties on their way northwards. These are nearly all old birds, the young ones which remained here all the winter having almost entirely disappeared.

HENRY L. SAXBY.

Baltasound, Shetland, March 31, 1865.

Ornithological Notes from Beverley, East Yorkshire.

By W. W. BOULTON, Esq.

(Continued from page 9477).

Goldeneye and Great Blackbacked Gull.—Dr. Saxby (Zool. 9486) gives an interesting account of an attack by great blackbacked gulls upon a wounded goldeneye. On the 27th of February Mr. Joseph Owen, of Beverley, was shooting wild fowl for me at Spurn: he there saw a very large gull (most probably one of this species from its unusual size) stoop at a duck that was swimming alone, and at the time

within gunshot of him. The gull continued a most determined attack, from which the duck sought to escape by diving, until Owen fired and killed the duck, which proved to be a very beautiful old female widgeon. He brought the duck to me, and with the exception of wounds produced by his own shot, there was no evidence of any previously sustained injury. The duck was in fine condition, and I have no doubt was perfectly uninjured when attacked by the gull. Although evidence abundantly proves the preference of the great blackbacked gull for carrion, I have little doubt that when pressed by hunger or tempted by opportunity, he will not reject a living prey.

Gray Phalarope.—I inadvertently omitted from my last notes a notice of the occurrence of this bird at Filey. On the 22nd of February Mr. D. Brown, of Filey, sent me, in the flesh, a very fine female specimen of the gray phalarope. It was in full winter plumage, and had been shot on the coast of Filey a day or two before.

Ring Ouzel nesting near Beverley.—The nesting time of many of our British birds is fast approaching, and this reminds me of an unusual circumstance that came under my own observation last year. A nest of the ring ouzel was found in a bank, concealed by coarse herbage, within five miles of Beverley, by Master John Hewitson, son of Mr. H. Hewitson, of Beverley: he saw the parent bird, which, flying from the nest, revealed its place of concealment. The nest contained four eggs; these he brought home, having unfortunately thrown the nest away: I have one of them in my possession, and it is without doubt the nest of the ring ouzel. Moreover, the boy is unusually observant, and if I had not seen the egg, I should have easily recognized the species from his lucid and simple description of the parent bird. The locality of the nest is evidence in favour of its belonging to the ring ouzel, although I may add that last year I saw no less than than three blackbirds' nests built *on the ground;* two were in banks, concealed behind tufts of grass, and the other was on the level ground near to a larch-tree root and partly concealed amongst the long grass: in one of these instances I saw the female bird on the eggs and set her off the nest, and in another I saw the eggs. I never knew the ring ouzel breed in this neighbourhood before; indeed we look upon it as of rare occurrence, seldom more than two or three specimens being observed each year, and then usually late in the autumn or early winter. I have not met with a specimen of the ring ouzel near Beverley after the fieldfares have left our neighbourhood.

Pairing and Nesting of our Common Birds.—During the first and second weeks of March, in spite of the almost unparalelled severity of

this long cold spring, I observed constant evidences of the approaching breeding season amongst several species of our hardy native birds. Thus the rooks with noisy clamour greeted the few straggling rays of sunshine that reminded them how soon their busiest days would come, and by the middle of the month our rookeries were well filled with nests. I disturbed many *pairs* of partridges, too, that seemed only waiting for the leafy hedgerows and grassy banks to hide away their cherished offspring. Hedge accentors chased each other from twig to twig, and along the bottoms of the naked fences. Yellowhammers and blackbirds, too, might be seen in pairs; and the lapwings or green plovers had returned to the dry fallows and stubbles in search of their future nesting-places. On the 22nd of March I saw a nest of the missel thrush, nearly completed, on the fork of a sycamore branch; a gamekeeper patient of mine had seen the birds building, and called my attention to the nest.

Golden Plover.—These birds usually leave us before the breeding season, although in the winter time hundreds of them may be seen, mingled with the lapwings, on chosen feeding-grounds. I have observed that these birds appear to select two or three fields, generally of young wheat, on which they feed in preference to others; and here they may be seen almost any day during the period of their sojourn in this neighbourhood. Several years ago a Mr. Bell, of Beverley, shot a fine old male of this species, with the perfectly black breast of the breeding or nuptial plumage, in the midst of the breeding season, on one of our common pastures close to the town of Beverley: it was with another, probably a female, and I have no doubt they were nesting with us: this bird is now in my collection. On the 9th of March, Mr. F. Boyes, of Beverley, shot an adult male of the golden plover on Swine Moor, the pasture or common where my own specimen was shot: this bird was changing its winter for its summer dress; it was in company with several others: the remainder have not been seen since that I know of, and are the last that have visited the immediate neighbourhood of Beverley.

Great Crested Grebe.—On the 10th of March I received, in the flesh, three splendid mature specimens of this fine grebe, a male and two females, the latter containing ova in a very forward stage of development. These birds had been shot on a private water within a few miles of Beverley, and are the first I have had in the flesh, although I had previously in my collection an immature specimen, shot a few years ago on the River Hull.

Nesting of Starlings and Ring Doves.—During the two last weeks of March the eccentric but pleasing ditties of the starling, breathing of spring, and sunshine, and flowers, might be often heard down many a chimney and from many a roof, as the light of early morning revealed his mate, and reminded him of brighter days now near at hand, dedicated to the busy duties of domestic life. Many of these birds have paired, and evidently selected their future nesting-places; but flocks of starlings may still be seen whirling in their circling flight, or intent and active in their search for insect food, on the fields of grass but recently dressed as future meadow land. The sweet and plaintive voice of the ring dove may also be heard by the early riser, almost daily, as at break of day he serenades his mate on the lofty elms or amid the shades of the larch plantations, which have afforded him a fitting home and nesting-place in former years.

Stock Dove.—This British dove but rarely visits the neighbourhood of Beverley, preferring the more densely wooded counties or localities, more suitable to its habits and requirements than our richly cultivated agricultural district, which, generally speaking, is but sparingly wooded. During the past winter a flock of these birds has been observed frequenting the low-lying country about Arram, a village close to the River Hull, and about four miles from Beverley. On the 15th of March Mr. Holmes, jun., farmer, of Arram, shot a beautiful old male of this species, and kindly brought it to me for my collection; he told me that when he shot the bird it was in company with another, probably the female, but the flock he had so often seen during the winter months had gone.

Wild Geese.—On the 16th of March, about twelve o'clock at noon, a flock of about sixty wild geese passed over my garden situated in the heart of the town of Beverley. They were flying in a north-westerly direction, and at no great altitude, for I was readily able to estimate their numbers by counting. These are the only wild geese I have seen or heard of since my report of the pink-footed geese, in my last communication.

Ringed or Bridled Guillemot.—On the 18th of March Mr. T. Jones, of Bridlington Quay, sent me a fine specimen of this guillemot in the winter plumage. It was shot on the coast near Bridlington two days previously. Mr. Jones had unfortunately skinned the bird, so that I could not determine the sex. This is the only instance I have met with of the ringed guillemot in winter plumage.

Pintail Duck.—This elegant duck is rarely shot on the River Hull. A fine mature female was shot on that river by Mr. Holmes, jun., of

Arram, on the 18th of March; I purchased it in the flesh for my collection. The pintail frequently finds its way into the Hull Market with other ducks shot by the punt men on the Humber; but the specimen I have recorded is the only pintail I have seen that had been shot on our own river, the Hull.

Stonechat.—I have never met with the stonechat in the immediate neighbourhood of Beverley until the present month. On the 25th of March an old male of this species was shot on Swine Moor, one of our common pastures, by Mr. Bell, jun., of Beverley. I secured it, in the flesh, for my collection. When shot it was alone, and no other of the same species has since been seen. I once saw a specimen that had been shot near Cottingham, about five miles from Beverley; it is in the possession of, and was shot by, Mr. P. Martin, gamekeeper, of that place.

Rock Dove.—This undoubted originator of the now almost numberless varieties of domestic pigeon breeds on the more lofty and rocky portions of our eastern coast. In the winter months flocks of these birds come inland searching for food, and from the widely distant points where they may be seen throughout East Yorkshire at this inclement season of the year, I conclude they traverse great distances to their feeding-grounds, like their congener, the passenger pigeon of America. In the "carrs" of this portion of the East Riding flocks of the rock dove may frequently be seen at times feeding along with wanderers from the neighbouring cotes, and I am informed occasionally returning with the domestic birds to their more genial abodes. A cross between the wild rock dove and common domestic pigeon is often met with as the consequence of this intermingling of the races. These birds are fertile *inter se*, are smaller than the domestic birds, are very hardy, and are endowed with wonderful powers of flight. They are much sought after for trapping at pigeon-matches, as they afford better sport in consequence of their greater agility on the wing. I obtained an old male rock dove the other day that had been shot by Mr. Grant, of Arram, together with another of the same species, in the "carrs" of Arram, near Beverley. I understand that they have been unusually abundant during this long and severe winter.

Gray Wagtail.—This species, known here as the "winter wagtail," may be seen, almost any bright winter's day, gracefully flitting or running along the river's brink, or the margin of one of those numerous drains and streams that intersect our pastures or fringe our lanes with their silvery thread. But with the advent of spring they leave us for more favoured breeding haunts. I was surprised to see at Mr. Richard

Richardson's, my birdstuffer, on the 28th of March, a most beautiful male of this species with the full black "cravat" of the breeding plumage: it had been shot on the same day by Mr. F. Boyes, of Beverley, on Swine Moor. The day after, a female was shot by the same gentleman on the same pasture, so that I concluded the two birds had been a pair, which, had they escaped their untimely end, might have remained to breed on the pasture where they were shot.

Hen killing Mice.—Mr. J. H. Gurney (Zool. 9539) relates an anecdote of a hen killing mice. I believe that many poultry fanciers and breeders will bear me out when I say that it is not unusual for some breeds of poultry to evince this predilection. Several years ago I used to breed fancy poultry on a rather extensive scale, and I have more than once seen birds of the Shanghae or Cochin China breed both catch and swallow mice. I have never seen a fowl lie in ambush with the deliberate object of surprising the mouse, but I have seen a hen rush at, seize and devour a mouse as it ran across the poultry-yard.

W. W. Boulton.

Beverley, April 6, 1865.

Erratum. — In my "Ornithological Notes" (Zool. 9491), *for* Walton Abbey, *read* Watton Abbey.

Ornithological Notes from Manchester.

By C. W. Devis, Esq.

A few noticeable birds appeared in our markets during the earlier part of March, but on the whole the month has not satisfied our ornithological appetite.

Great Northern Diver.—The great northern diver was represented on the 4th of March, by a young female adult, in bone and plumage, but with a virgin ovary: she is a fine bird, weighing 6 lbs. 12 oz., and measuring 35 inches from beak to tail, and 44 inches in expanse of wing. Can any explanation be offered of the fact that almost all these stragglers are of this age and sex? Fish piled on fish in the bird's gullet testified to its voracity. Within a length of 16 inches were, first, a gurnard as large as an average herring, below this another of like size, then another 6 inches long occupying the proventriculus and part of the stomach, which was filled by the bones and *débris* of still another similar fish undergoing comminution. Whatever the grebes may do, their cousin-german the diver certainly does not eject its

bone refuse in pellets; bones pass through the whole intestinal canal and into the cœcal sacs preparatory to ejection downwards. The sternum of this diver affords an interesting example of structural adaptation; its floor is extended backwards into a broad median lobe, which forms a comfortable, and indeed necessary, support for the strong heavy gizzard and its load of fish. As an instance of the persistence of apparently delicate animal tissue, I noted the occurrence, in the cloaca, of a fish's eye-lens, which had passed through digestive operations unscathed, and was fresh and bright as if just from the ball, while strong bones had been ground and dissolved to pulp. Two of the fish within the gullet afforded me from their stomachs good specimens of Lacuna vincta and Acera bullata.

Goldeneye.—A single male specimen of this duck offered itself on the 6th of March. The species makes but angel's visits to us. This bird's last bill of fare is somewhat curious; nine young eels, forty-eight Lymnæa peregra, three L. stagnalis, six caddis-worms of four species, an *entrée* of fresh-water shrimps with "fixins" of earthworms, larvæ of gnat, larvæ of dragon-fly and grit—all marsh food.

Gannet.—For three weeks we have been inundated with these birds, and grown quite accustomed to see the stalls festooned with their long wings and necks by scores. In former years they have been comparatively few in number and proportionally high in price. Will those correspondents of the 'Zoologist' who have opportunities of observing the living bird tell us something of its modes of life? That it is a bird of strong, rapid and sustained flight is patent in the structure of the wing; that it strikes its prey from above, like the gull, is inferable from the tremendous power of the neck, and that it can also follow its victims beneath the surface appears to me not only from its wing-like foot, but from the great size and muscularity of its tail; but there are other points of structure whose relations are not so readily traced. What, for example, is the office of the pectinated middle claw in this and other birds?

Willow Ptarmigan.—Abundant of late, but almost all shamefully mutilated by the removal of both wings. Truly the feminine greed of decoration has much to answer for to the ornithologist. The black line from eye to beak is usually given as distinguishing the male from the female: I have found the indication reversed.

CHARLES W. DEVIS.

Manchester, April 8, 1865.

Ornithological Notes from Lincolnshire. By JOHN CORDEAUX, Esq.

(Continued from page 9574).

APRIL, 1865.

Pied and White Wagtails.—I observed during the last week in March two or three pairs of white wagtails in this neighbourhood. At this season of the year it is not difficult to distinguish them at once from Motacilla Yarrellii, both by their light gray mantle, which contrasts strongly with the much darker shades on the head and tail, while in M. Yarrellii the whole of the upper part was one uniform dark colour; also by the white patch on the side of the head and neck, which in M. alba is much larger, and runs quite down to the wing without any intervening colour. In the autumn it is very difficult to distinguish between the young broods, both having the light upper gray parts. Several pairs of pied wagtails remain in this neighbourhood during the winter; they may generally be seen feeding in the turnip fields, about the sheep-troughs, and always in close propinquity to the flock. This bird is by far the most frequently met with of the two species in this parish: M. alba is not, however, uncommon during the spring and summer. We had a very large increase to the number of the pied wagtails on or about the 7th of April, on which day I saw no less than thirty pairs of these pretty graceful birds during a short morning's drive.

Wheatear.—On the 8th of April, a warm and fine day, wind S. and S.W., considerable numbers of wheatears arrived in our marsh district, their first appearance in the neighbourhood this spring. On this day they might be seen everywhere, in pairs, about the dry banks and drain sides, also on the Humber embankment. The next day, and for ten days afterwards, although I daily traversed nearly the same ground, I did not see a single bird: they had all left us. I observed two or three pairs during the last week in the month searching amongst the mass of drift-wood and sea-weed on the coast. Very few out of the many which arrive in the spring remain in the neighbourhood for breeding purposes, and I have never been able to discover their nest in the marsh district.

Widgeon.—April 1. Widgeon still linger in the neighbourhood. I observed a large flock on the Humber on the 1st of this month, but have not seen any since this date.

Scaup Duck.—A few scaup ducks still remain on the Humber, apparently old males. My last notes of them are—April 7th, three;

and on the 11th, two; all males. In both cases the birds were sleeping on the water and floating down with the tide, their heads buried under the left wing, and their broadsides swung round to the current, and thus they drifted along with all the apparent inaction of dead birds.

Dunlin.—April 4th, 4 P.M. Immense flocks of dunlins on the mud flats, one flock alone numbering many thousands; as yet they show very slight traces of the black summer feathers on the breast. Since this date, and up to the end of the month, they have almost entirely disappeared from the district, only a small flock or so remaining on the Humber flats. A bird I examined, shot on the 18th of April, had partly acquired the summer garb, the tips only of the feathers on the breast having become changed to black, giving the bird a mottled appearance.

Gray Plover.—April 7. A decided increase in the number of gray plovers; but few, however, compared with the number we may expect later in the season. Their usual time of arrival in their passage northward, during the spring migration, is about the first week in May, and they will not leave us again before the end of the month. A small flock, on the 22nd of April, contained some birds which had nearly acquired the full summer dress.

Golden Plover.—April 10. A considerable flock of golden plovers in the marshes, an unusually late period for them to remain. I saw two of these birds on some wheat-land on the 18th: they had acquired their full summer dress.

Fieldfare.—April 14th and 29th. Observed flocks of fieldfares in the low meadow-grounds bordering our stream. I have for some years, in April, and as late as the first and second weeks in May, seen large flocks of fieldfares on the east coast, generally on the low grounds near the streams, apparently recruiting themselves before their final departure.

Hooded Crow.—April 18. A few still linger about the mud flats and banks, also in the newly-sown corn-fields.

Whimbrel.—April 5. A small flock of whimbrels on the flats, their first spring appearance. It was not, however, till the 27th that I saw any considerable quantity: on this day I counted forty feeding in their favourite haunt, the grass marshes near the Humber.

LATE APPEARANCE OF SUMMER MIGRANTS.

Swallows.—Swallows are unusually late in showing themselves. I saw them for the first time on the 14th of April, on which day ten

chimney swallows made their appearance, and might be seen busily hawking under the far-spreading branches of some old willow trees, which overshadow the stream. Last year I saw two chimney swallows and two martins on the 9th of April, and in the same place under the willows.

Sand Martin.—Considerable numbers appeared about the stream during the second week in April.

Cuckoo.—April 18th.

Middle Willow Wren and Lesser Whitethroat.—April 19th.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
May 2, 1865.

Ornithological Notes from West Sussex.

By W. JEFFERY, jun., Esq.

(Continued from page 9582.)

APRIL, 1865.

THE greater part of our summer visitants have now arrived. The severe weather, which kept back some of the first comers, having given place to quite summer weather early in the present month, the remainder of the immigrants have arrived at about the usual dates, as will be seen by the following list:—

April 3. Wheatear. A pair seen.
„ 4. Willow Warbler. Several seen and heard.
„ 5. Sand Martin and Swallow. Several of the former and a few of the latter seen.
April 7. Chiffchaff. One seen and heard.
„ 13. Ray's Wagtail. One seen and heard.
„ 14. Whitethroat. One seen.
„ „ Nightingale. Seen and heard.
„ „ Cuckoo. Heard.
„ 15. Sedge Warbler. One seen and heard.
„ 16. Grasshopper Warbler. One heard.
„ „ Blackcap. A pair seen.
„ „ Tree Pipit. Seen and heard.
„ 20. House Martin. Several seen.
„ 21. Lesser Whitethroat. Heard.
„ 22. Wood Warbler. Two seen and heard.
„ „ Common Sandpiper. One seen.

Wryneck, Redstart and Whinchat.—The wryneck I first heard on the 22nd of April, but I heard *of* it about a week before. The redstart has made no stay with us this year; the only one that I have seen was a male on the downs on the 22nd. The whinchat also appears to have reached the downs (where it breeds) without stopping in the lowlands, as it sometimes does for a few days. On the 22nd I saw several of these birds on the downs.

Willow Warbler.—Very numerous and in full song on the 9th of April.

Whitethroat.—Almost every hedge was full of these birds on the 15th and 16th of April, after which they seem to have dispersed.

Sedge Warbler.—Not plentiful until the 18th of April.

Blackcap.—Yarrell says the males of this species arrive before the females; I have always fancied that this bird comes in pairs, as I have almost invariably seen male and female together. I observed a pair on the 16th of April, being the first day I saw this species this year; the male singing and the female sitting just by.

Ray's Wagtail.—From the 13th of April to the end of the month I have occasionally seen, and oftener heard, these birds passing over, generally in a northerly direction; not in large numbers, however, and often singly. I cannot ascertain that these birds breed in Sussex, but they usually visit us in the spring and autumn, and while here in the spring may frequently be seen running about round the legs of cattle or following the plough in search of food; at this season they are very shy, often rising just as you get within gunshot of them, if not before, and not settling again until fairly out of sight. They do not, while they are here, frequent water-courses, as the gray and pied species do. Captain Hadfield (Zool. 9500) notes that the gray wagtail is more arboreal than the rest; my own observations tend to corroborate this, and I think that it is also more aquatic than the others, being rarely found but at the edge of a pond or water-course.

Green Sandpiper.—Scarce through the winter; one heard on the 16th of April.

Hoopoe.—A fine specimen of this curious bird was shot on a piece of low ground adjoining Pagham Harbour, on the 18th of April, and is now in my collection. The stomach contained the remains of about thirty grubs nearly one inch and a half long; one or two of them that were least decomposed were nearly white, with dark spots on the sides; I think they were the larvæ of the cockchaffer, but am not certain. The flesh of this bird, even when fresh, has a strong disagreeable smell. Two other hoopoes have been killed in the neigh-

bourhood, but less rich in colour and scarcely so large as the above specimen.

Harrier.—Two birds, supposed to have been harriers, were seen sailing northward over the downs on the 22nd of April. They were very high in the air, and appeared to be light coloured, excepting the primaries, which were dark; they did not once flap their wings while in sight.

Tawny Owl.—Took a young bird of this species on the 23rd of April. There were either one or two others in the nest, but being a very difficult place to get at I did not take the trouble to ascertain which, not wanting more than one. The nest was in a hollow yew tree.

Water Rail.—One seen on the 25th of April.

Whimbrel.—This bird, here called "titterel," was heard at night on the 25th of April.

W. Jeffery, Jun.

Ratham, Chichester, May 6, 1865.

Ornithological Notes from the Isle of Wight.

By Capt. Henry Hadfield.

(Continued from p. 9500.)

February, 1865.

Kittiwake.—On the 17th of February a small flock was seen flying against a head-wind, some of them young birds, with the black band on the tail.

Redwing.—Very few have been observed: some winters hundreds are to be met with on the sea-cliffs and shore, but I did not find one on the 17th of February between Ventnor and Bonchurch, though the ground was well nigh covered with snow; but thrushes had collected in considerable numbers to feed on the snails concealed among the stones and rank herbage on the less precipitous face of the cliffs, though I have never seen blackbirds on the shore, even in the severest weather: I have noticed many other species, including the stonechat, feeding among the decayed sea-weed. [Captain Hadfield's observations on the paucity of redwings in the Isle of Wight is quite opposed to information I have received from Mr. Bond; see also Mr. Rogers' remarks (Zool. 9582).—*E. N.*]

Raven.—A pair seen on the 17th of February: only single birds observed up to this date.

Redbacked Shrike.—On the northern slope, and towards the foot of the Down, I observed, on the 25th of February, a bird on the wing, whose peculiar undulating flight attracted my attention; having alighted on one of the topmost twigs of an apple tree, I had an opportunity of examining it through a glass, but for a few seconds only. That it was a female of this species there can be little reason to doubt, though early in its arrival.

Blackbird.—Though the weather of late has been unusually severe, I observed, on the 25th of February, that this species had paired, having early that morning watched a couple. When first seen, the female bird, with ruffled plumage, was basking on a sunny bank, while the male briskly perambulated the grass-plot, digging his bill into many a tuft of grass ere dragging forth a worm, which he was not destined to swallow, for the female, as quick as thought, darted down and snatched it from him, leaving her henpecked mate to continue his search.

Wood Pigeon.—Two were observed on the 28th of February, evidently paired, in a clump of fir-trees.

March, 1865.

Partridge.—On the 1st of March first observed to be paired; also the magpie.

Kestrel.—A pair seen, on the 1st of March, about the cliffs near St. Lawrence, where I have known them breed for some years. Though on the look out none had previously been observed. An attempt was once made to get at the nest, but the cord proved too slight to bear the weight of a person suspended over a jutting rock. I should not consider a man a coward for declining to stand on the edge of a precipice (see Zool. 9478), having known some brave men who could not; and it is truly a nervous thing to see another do it. For instance, when rifle shooting on the northern coast of Devon, I went to Baggy Point, accompanied by a youth from the village of Croyde: a gull or two had been shot on the wing, and a cormorant knocked off a rock at sea, when I observed another perched on a ledge of the cliff beneath, which being likewise killed fell to the shore, whereon my companion, without a moment's hesitation, began to descend the shelving but almost perpendicular face of the cliff, where a goat could hardly have found a footing, and he had neither rope nor staff. Much alarmed for his safety, he was begged and entreated to return, which he reluctantly did. I do not know the height of these

cliffs, but I took a shot or two at a gull on the beach without its being disturbed by the report.

Sparrowhawk.—Observed on the 4th of March another of these hawks in pursuit of a small bird. As to the idea of the young of this species being removed from the nest by the parent bird (Zool. 9466), I think it more likely that the male, enraged at the loss of his mate and some of the young, should have thrown out or destroyed the rest; but it is still more probable, the nest having been twice invaded, once robbed, and the old bird shot, that some man or boy was attracted by it, and then what more likely than the carrying off of the rest of the progeny? Besides, to what "place of safety" could such tender nestlings be removed?

Longtailed Titmouse.—On the 8th of March a flock, numbering some eighteen or twenty of these diminutive birds, was observed. Their flight is peculiar, for unlike most other species they rise one by one, proceeding in single file, so the first may be out of sight before the last is on the wing. How they manage to follow the same course is surprising, though they usually alight on any tree, hedge or bush in their line of flight, creeping through and among the branches with wonderful facility.

Greenfinch.—March 11. This species first observed to be paired: Montagu says, "It is rather a late breeder." The chaffinch is still gregarious, but the house sparrow is paired, also the missel thrush.

Sky Lark.—March 13. Still gregarious. A neighbour's lark, one of the finest songsters I ever heard, has lately died at the advanced age of twenty years, having been in her possession for nineteen years, and it was a year old when procured: though very infirm, and its legs much swollen, its song was continued almost to the last; but what is most remarkable is the great length to which the claws had grown, that of the back toe exceeding two inches and one-eighth, and of the middle toe seven-eighths of an inch; the rest in proportion, though some are more or less injured.

Wild Duck.—A flock was seen on the wing on the 19th of March.

Golden Eagle.—An eagle of this species passed over Shanklin in a north-easterly direction about the middle of the month, and was seen by several of the inhabitants. My informants say that it was not above thirty or forty yards overhead.

Chiffchaff.—On the 27th of March one was observed, and another on the 28th among the branches of a lofty elm near the Bonchurch Pond, and two more were seen on the 30th close to the village: on the 28th, at 9 A.M., the thermometer was at 38°, wind S.E., and there had

been a hard frost the day before. I feel pretty confident that none had previously arrived, having been daily on the look out for them, as they are a week or so behind their time. Though the wheatear is said to be the earliest of our summer birds, I have found it not unfrequently preceded by the chiffchaff.

Cole Tit.—March 28. This species observed to be paired.

Tree Pipit.—First seen on or about Lady-day.

APRIL, 1865.

Bluethroated Warbler.—Having, on the 1st of April, heard from a neighbour that a "bluebreasted robin" had been seen in his grounds at St. Boniface, and that it frequently approached the house to feed with robins and other birds on crumbs placed in a tray on the window-sill, I went immediately to look for it, but was unsuccessful. I again sought for it on the morning of the 3rd, but it did not appear, nor did I fall in with it on revisiting the spot in the afternoon; but on going towards Bonchurch, at 5 P.M., it was pointed out to me by one of the villagers, as it sat singing on a branch of an ash near the pond: it had been observed by this man and his fellow-workmen during the greater part of the day, but they had no idea of its being any other than the common robin, though differing in plumage and wanting the red breast, so like is it in shape and manner; however, when pointed out, they readily saw how much smaller it is. I was told of its familiarity, and soon had ocular proof of its tameness, for it suddenly alighted on the opposite side of the road; when, screened by the coping of the garden wall, I approached within two yards, and observed it searching for worms among the decayed leaves; but there was no need of caution, the bird being so perfectly fearless. The men, on quitting their work, left me and the bluethroated warbler together, so before dusk I had a good opportunity for making observations on its habits and manners: its flight is more sudden and rapid than that of the redbreast, and I observed the tail often raised like that of the wren, particularly when pursued or excited, as it often was by the robins, and though it did not court the attack it was ever ready for the fray, and, with outstretched neck and upraised tail awaiting the attack, it fought desperately, falling with its assailant to the ground, where it struggled on for a second or two, but on taking wing seemed none the worse for the encounter, and, perching on a tree, renewed its song, which is very similar to that of the redbreast, though not so loud, nor is it so prolonged. When singing the bill is widely opened, the wings drooping and vibrating with the tail, and in hopping among the

branches the wings were in constant motion, as is observed in the hedgesparrow. I saw it hopping among the decayed leaves in search of worms, and noticed its beak crammed with them; it was also seen to alight on a path, along which it swiftly ran, like a wagtail. Though so restless a bird, it did not wander forty yards from the spot where first seen during the hour or more that I observed it, and its song was constantly renewed. Just before the evening closed in, it sat for ten minutes or more almost motionless, not appearing to notice me, though standing beneath the leafless tree on which it was perched six or seven yards overhead. It is not only smaller than the redbreast, but a neater looking bird, the plumage being more even and close. Though in figure I could trace no resemblance to the redstart, still there is something in the abrupt manner and flight which reminds one of it; but Macgillivray could never, I think, have placed it in the genus Ruticilla had he ever seen the living bird. Temminck's remark, "Habite dans les mêmes contrées que l'espèce précédente," shows that he considered it a species of robin. The bird under notice must be well nigh a year old. Its general appearance is that of a dwarfish robin, a mere variety of that species, to prove which I have only to state that every unscientific person who has seen it has pronounced it to be a robin; even the gardener on the spot, who has had opportunities of observing it for many weeks, tells me that he took it for a young or immature robin, and that it had been frequently seen throughout the winter, generally among the trees on a sheltered bank near the pond and rivulet flowing into it. Chin and upper part of the throat of a grayish white, tinged with yellow; this gorget-like patch extends to the cheeks and over the bill, which is black, and longer and straighter than the redbreast's, but not, I think, so stout, nor is the eye so full. Breast of a dull bluish colour, longitudinally streaked with reddish brown, and slightly spotted and shaded with a dull white; the under parts of the latter colour. Under part of the tail of a darkish brown; the external feathers whitish. Head and back of a grayish brown. Wings reddish brown; tail darker. The head proportionally larger than that of the redbreast. The plumage has an imperfect appearance, the colours not being well defined, as in the young robin. There is no doubt as to its having been seen as early as February, and I am led to believe that it was first observed in the autumn; if so, it is difficult to account for its appearance unless bred in the undercliff, which is not very probable. In Macgillivray's time the appearance of the blue-throated warbler in England had been but twice recorded. In anticipation of any remarks on this note, I have only to say that,

though I made the best use of my time and opportunity, I may have been mistaken as to shades of colour, the bird being first seen under a bright sunshine, and then by a gradually failing light. [This bird was still in the neighbourhood on the 4th of May.—*E. N.*]

Pied Wagtail.—April 1. First observed to be paired.

Goldfinch.—Though a flock was seen on the 6th of April, this species has begun to pair.

Willow Wren.—First observed on the 7th of April.

Wheatear.—Though daily on the look out I saw no wheatears till the 7th of April, on which day I found two couples: having watched them for some time, I observed that male and female kept together, leading me to think they pair ere their arrival. I am told that several were seen near Shanklin on the 30th of March. A writer in the 'Zoologist' (Zool. 9108) remarks on the wheatear having been observed in March; in this island they generally arrive by the latter end of that month; but, in corroboration of Mr. Brown's remark (Zool. 9108), that he never but once saw a wheatear before April, in Scotland, I beg to state that the first wheatear I observed in Morayshire in 1859 was on the 6th of April though, according to Sir W. Jardine, they arrive in Scotland the first week in March, *i. e.* a week or two earlier than they appear in the South of England. Montagu gives the "latter end of March" as the time of their arrival; but I think him mistaken in supposing that because he had "seen it in the month of February" that "some few probably remain the whole year." And why should your North Wales correspondent (Zool. 9041) infer that the wheatears seen by him in the *middle* of March had remained throughout the winter?

Swallow.—First seen on the 10th of April near Luccombe by two men who are known to me; and on the 13th I saw some twenty or more in the same neighbourhood: first a single bird, then small parties arrived, apparently from the south-east, and flying against the wind, which had only veered round to the west the night before: the evening calm, but foggy, so that they could not be seen till close upon me. Thermometer 49° at 9 A. M.

Cirl Bunting and Bullfinch.—April 11. Observed to be paired.

Wryneck.—Seen on the 11th of April.

Wood Wren.—Seen on the 12th of April.

Redstart.—One was observed in the garden on the 13th of April, and, though much persecuted by a robin, was again seen on the following day. I hear that the redstart was seen at Shanklin some days ago, which is probable, my observations leading me to believe

that most of our summer visitants arrive from the south-east, when Bembridge would be the first point made, Dunnose the next.

Sand Martin.—April 14. Two or three birds of this species have been observed to-day.

Greater Whitethroat.—First seen on the 14th of April.

Nightingale.—April 15. First heard to-day, between 3 and 4 P.M., near St. Lawrence. Thermometer 42° at 9 A.M.

Cuckoo.—April 15. The cuckoo was heard for the first time to-day.

Green Woodpecker.—A bird of this species has occasionally been observed of late near Luccombe. [Is Captain Hadfield sure of this? I thought woodpeckers were unknown in the Isle of Wight.—*E. N.*]

Blackbird.—Though I have again had favourable opportunities for observing its manner of building, I have never once seen the male assisting, the female carrying all the material, and the rapidity with which it is collected is truly astonishing; but a short pause is invariably made before she disappears among the ivy, where the nest is placed, only a foot or two from the ground; last year it was built in the ivy on the house, some seventeen or eighteen feet high. The ingress and egress is frequently varied, and the male, ever watchful, sits concealed among the foliage, though not invisible to his mate, who works fearlessly so long as he is stationary or does not sound the alarm note; but this habit is not peculiar to the male, nor have I found "the female less clamorous" when surprised. The work ceases between 8 and 9 A.M. Macgillivray says the blackbird's principal food in winter is the snail: it may be so in Scotland, but not in the South of England, and he is decidedly wrong in stating that the blackbird "never swallows an entire worm, unless it happens to be extremely small;" and again, "not swallowing at any time more than a small fragment" even of a "moderate-sized worm." I believe the contrary to be the rule, and the "cutting up" the exception, though the large worms are well pecked and bruised before being gulped down.

Hedgesparrow and Magpie.—April 15. There being little foliage as yet, the hedgesparrow has resorted to the ivy, and I observe that a pair of magpies are building in a leafless hawthorn.

Gulls.—Within the last few days gulls have disappeared from this neighbourhood, excepting a kittiwake or two. Wishing to ascertain whether they might be nesting in the Culver Cliffs, I walked over there on the 20th of April: none were observed by the way, though for the most part the coast-line was followed; nor did I find any in or near the cliffs, though two hours were spent in looking for them, and showers of loosened flints poured down, but no birds came forth but

daws and a kestrel or two. Though informed that gulls were forsaking these cliffs I was not prepared for such complete desertion, but the season being a late one they may be looked for yet.

Sparrowhawk.—On the 21st of April I saw a sparrowhawk chased away from the sea-cliffs by a pair of pied wagtails; though it flew out to sea the pursuit was continued for some time.

Martin.—April 22. Martin first seen. Thermometer 62° at 9 A. M.

Dartford Warbler.—April 22. This species, I believe, is breeding. Having watched the male bird for half an hour or more it did not wander fifty yards, but flitting from bush to bush, in circular flight, would return to the same spot, though nothing was seen of the female. Macgillivray compares its flight to that of the bushchat, but I think it very different, though somewhat similar to that of the whitethroat and redstart. Unlike the stonechat, it more frequently alights on a side branch than on the topmost twig of the furze; nor does it remain so long stationary, but after a short pause creeps in or glides through the bush, and coming out at the lower part flits off to another, with a low and wavering, not a "jerking flight," its long and slender tail bending to the breeze, like that of the wagtail and longtailed titmouse. It is rather a handsome little bird, but the elevated head and tail, when seated, give it a somewhat peculiar appearance. Though the wings are not jerked or in constant motion, like the stonechat's, they are frequently extended as it creeps along, and the tail is flirted about. Considering its shy and retiring habits, it is difficult to account for its not being a more numerous species; however, as it is one of the few non-migratory insect-eaters, some may perish of a severe winter. April 25. A young bird has been seen to-day, its tail but about a third of an inch long, and the plumage duller and more puffed out than that of the adult. Though Montagu remarks that "it is rather an early breeder," having young "early in the month of May," I hardly expected to find a young bird strong on the wing by the 25th of April, the season backward too.

Blackcap Warbler.—First heard on the 27th of April.

Redthroated Diver.—In answer to Mr. Jeffery's query (Zool. 9580), "Has it been satisfactorily proved that this species, after having obtained the red patch, retains it through the winter?" I beg to refer him to Montagu, but as his work may not be at hand I will quote from it:—"On the throat is a patch of chestnut-red. * * * The bird from which this description is taken was killed at Hastings, in Sussex, in the winter of 1795." Even Mr. Jeffery's remarks tend to prove it, as he says three redthroated specimens have come under his

own observation in Sussex. From Temminck's remark, "Les jeunes sont très-communs, sur les mers de l'intérieur de la Hollande," &c., it would appear that the adult is less so. He says that at a year old, "On remarque quelques plumes d'un roux marron," and after the second moult, "tout le devant du cou est d'un roux marron." He says nothing of its losing these brighter colours in the winter, but rather impresses us with the idea of their gradual growth.

HENRY HADFIELD.

Ventnor, Isle of Wight, May 3, 1865.

Ornithological Notes from the County Dublin.
By H. BLAKE-KNOX, Esq.

The Colymbi in Dublin Bay.—Dublin Bay is visited every year by considerable numbers of both redthroated and northern divers, also small birds called blackthroated divers are to be met with, but these I think are only northern divers; at least, they do not differ in plumage. October brings in these birds in great numbers; but then the plumage we covet most, the adult summer, is not to be obtained, all old birds being in the moult, partly in summer, partly in winter dress. Young birds, at this season and all winter, of the northern diver have the feathers of the shoulders or back and the scapulars dull black, *pointed*, and with a broad band at tip of hoary gray; no white speckles anywhere in the plumage; the throat and cheeks white; irides brown. Adult birds shot in November and December have the feathers of the back and scapulars olive-black, truncate, a broad band of brown-gray at tip; this band pale in the centre, almost like a spot: throat and cheeks white; irides arterial blood-red. In July-feathered birds no white spots. The brown-gray band turns hoary gray later in the season from the weather. As late as January I have shot birds with summer feathers still in their plumage, and appearing *new;* these were old females; whether these feathers were retained all winter or not I cannot say. Young birds killed in February and March were in moult, the *new feathers* similar to the *adult in winter* and *truncate;* no sign of the adult summer dress. I do not think this dress is assumed by the young till the second spring. That it is partially assumed in second winter, as some assert, I do not believe, birds with a mixed plumage being adults moulting; even calling these "second winter birds," where do they go in winter? Others, again, assert that all our winter Colymbi are young birds; now from dissection I will

flatly contradict this, and say that as many adults as young are found along our coast in winter, but young birds are more frequently shot. I know that every tough run I have had after a Colymbus, if I was successful in killing, proved that I hunted an old bird. In winter I never saw a summer-plumaged bird in Dublin Bay of either species, though in April they are plentiful but unprocurable. Did any reader of the 'Zoologist' ever shoot a summer-plumaged bird in winter? I never did. The plumage of the redthroated diver is in moult like the northern diver on its first arrival here; the throat of the adult then consists of red, white and slate-colour. I have seen adults in December with a few red feathers still in the throat; all the rest winter plumage. The plumage of the young in winter is as follows:—November. Top of head and down back of neck lead-gray, marked with black and white, more so towards head; sides of neck pale brown and white; chin white; centre of throat for four inches thickly *speckled with brown;* back, scapulars, rump and tail-coverts and wing-coverts *bronze-black, a long square spot of white* at tip of each filiment—this spot is *nearly a band* on the wing-coverts; irides brown. In January the speckles on the throat are scarcer and rust-colour. The adult in winter has the top of the head and back of neck lead-blue; the back, scapulars, rump and tail-coverts *lead-gray, an oval* spot of white at tip of each web; wing-coverts black, *spotted similar to back;* throat *pure white;* irides reddish liver-colour.

Diving powers of the Colymbi.—The diving of these birds is most wonderful, but the redthroated diver is far the superior; it is nearly useless to hunt him. The northern diver will often take from two to five hundred yards at a dive, and frequently disappears altogether, though the water be as smooth as a mill-pond. In diving both birds sink their bodies under water, the only perceptible motion being when the head is thrust under, which is so slowly done that the bird seems to glide into the water; neither species throw up the rump like the auks and guillemots. The redthroated diver when fishing in deep rocky water will jump like the cormorants, a deep perpendicular dive being then required. I never saw the northern diver do this. The fastest rower will seldom row down one of these birds, though in some dozen cases I have fairly beaten them in a smart punt and a straight race. When the birds take to dodging they are easily enough killed, if the shooter understands the sport. As an example of the enduring power of the northern diver, I will copy from my note-book. Seeing a northern diver at the Muglins I gave him chase; he took me away at racing speed towards Poolbeg for fully five miles; he then took to

Howth about a mile, and I thought of giving up, as I saw the land receding from me, a punt being a poor look out against a westerly breeze; he, however, made in for shore, and gave me my first shot at Salthill, after a row of two hours and a half, pulling my best; my hand shaking I missed him. We now dodged within a circle of a hundred yards diameter for twenty minutes (my watch I always hang in the stern), but, seeing I was as 'cute as himself, he made away again, took me into Kingstown Harbour, in and out among the shipping, till at last, poor fellow, he acknowledged I was his master, came up within twenty yards of me, uttered a prolonged cry and turned over on his side, when I shot him. In twenty-four hours afterwards he was putrid, showing how exhausted he must have died. This is the only case I ever knew of one of these birds being totally exhausted by a single rower. I was four hours hunting him, stripped to my drawers. This destroying life may seem inconsistent with a naturalist's principles, but I must admit that, after a fox-hunt, I give the palm to a "loon" chase, besides the fair sex value the breast-feathers next to those of the grebe for making muffs. Respecting the time a northern diver can live under water, I state the following. Having wounded a bird I could not kill him; I pressed his breast with my knee till I was tired; still he retained life, and fought as hard as ever: to hang him or wring his neck would spoil him as a specimen, so I tied a weight to his leg and sunk him by a string; in a quarter of an hour he was still alive, though submerged all that time; in twenty-five minutes he was dead.

The Note of the Colymbi.—Respecting the cry of this bird, I must make some remarks. In bad weather, and when flying high, its note is generally "yap, yap, yau," and before wind the cry is loud, hoarse and piercing, and may be rendered "gan—a—ece," the first syllable deep, the last like a scream. When in fear and hard pressed, it makes a sound so like a man in agony that it might well appal the stoutest heart when hearing it at night. It always brings to my recollection the moans of an unfortunate slaughterman who was brought to the hospital, having driven a knife through his own knee-cap instead of a sheep's neck. Its call-note is soft, wild and plaintive, pronounceable as "caw—w—w—e." The following story respecting its cry may be interesting, as showing the superstition of the Irish peasantry and also the pleasant pages of a naturalist's life in Ireland. One dark night in December I went with three fishermen to raise conger-lines: there was no ripple on the water, but a storm was more surely foretold by the cries of the "gall-rush" than ever by Admiral FitzRoy. Occasionally a cry would sound nearer the boat than usual, and one of the fisher-

men would ejaculate with piety, "God be betune us and harm." I was sharpening a gaft with a file by the dim light of a candle in a lantern, when a cry so fearfully prolonged caused the men to rest on their oars and devoutly cross themselves, praying the "blessed Virgin" to protect them. Though I know not fear of supernatural things, yet this fearful cry and the situation I was in made my hair feel as if bristling, and I was not sorry when a curlew broke the silence by his cheerful whistle. "Oh, Mister Harry! wasn't that a fearful scrach!" said the oldest man, a man of eighty: "I never heard such another but wonst, and that was when I fished with auld Bill, who's dead now, God rest his sowl in glory! and it bides us no good, for after hearing that scrach, ten years ago, we lost all our lines and as fine a yawl as ever sot the water, and be the same token poor Bill died a month after." However, no ill luck followed; we had a splendid haul of congers, and a rattling easterly gale next day. When raising cod-lines in the foggy November morning, hearing the call-note of this bird is most pleasing, and well repays the naturalist his trouble in rising at four and five o'clock, for we shoot our cod-lines six and seven miles from Dalkey.

Flight of the Colymbi.—Both these species are very strong when once well on the wing, though on rising from the water they propel themselves along the surface by both wings and feet for a considerable distance. When hard pressed in winter they will sometimes fly, but in spring they take flight immediately on the approach of a boat. Like the shag, if fired at with a bullet, they will drop from the air as if shot. Their ordinary flight is just above the surface, but in bad weather they fly at various heights, always solitary.

Food of the Colymbi.—The food of the northern diver is chiefly flat fish, herrings and cobblers (father lashers). Of the redthroated diver, flat-fish, herrings and cole-fish (pollock), the herring, I should say, was its staple food: great numbers of divers are taken in the nets. To catch flat-fish these divers have to turn on their backs in the water and thrust the upper mandible under the sand, and thus catch them; hence the way the top of the upper mandible is worn. This may seem a strange statement, but yet I have had ocular proof of it. The sand-dab lies so closely on the bottom, on the approach of danger, even burying itself partly in the sand, that the bird could hardly take it any other way. If the bird was used to plough up the sand, as Dr. Edmondston states, would it not be more worn than it is, and would not the under mandible and the feathers at the base also suffer? The following incident happened to myself two years ago in October:

I quote from my note-book:—"At last I have solved what always was a mystery to me—the worn appearance of the top of the upper mandible of the bill of the northern and redthroated diver. Some strange freak tempted me to row to Salthill to catch some plaice, as a preliminary to my dinner: having anchored near the Martello Tower (it was high water and ebbing), I fished for some hours, catching some dozen plaice and sand-dabs. The day was most beautiful, not a wrinkle on the water, and a burning sun; just the day for an idle naturalist like myself to smoke, dream, work problems, and feel too lazy to draw in my line and unhook some small dabs that were kicking on it. Having eaten my lunch, and smoked myself sleepy, I laid my head on the gunwale of the boat, and, shading my eyes, watched the fish playing on the bottom, for the tide had fallen greatly; in fact, I was in about twelve feet water. Presently the active dabs scuttled off in all directions. My three prisoners being hooked could not follow their example, so burrowed down flat into the sand, the top of the back being only visible; suddenly a large thing passed over the hooked fish, and seemed to poise itself above them; it was a redthroated diver: suddenly he turned on his back, bringing his head under where his feet had been, thrust the upper mandible under a fish and then secured it; the same was performed to another, the bird still on its back. The fish did not move, believing, I suppose, like the ostrich, that they were safe with their heads in the sand. With two jerks my delicate hooks were snapped, but old John Manton corrected the plunderer, and I shook five dabs from his throat. To look at the lip of these birds, you can see how admirably they are adapted for this kind of diving."

Plumage of the Razorbilled Auk (Alca torda).—Dr. Saxby (Zool. 9520) asks for information from the readers of the 'Zoologist' respecting the white line from the bill to the eye of the razorbill. From what experience I have had of the razorbill, I should say the white line does not belong to the winter plumage of either young or old, but is assumed in spring, often to some time before the head moult takes place. However, the following from my note-book may perhaps interest Dr. Saxby and other readers of the 'Zoologist:'—"The razorbill cannot be said to be a permanent resident of the waters of Dublin Bay: it breeds in considerable numbers on the islands of this county, as Lambay, Skerries, &c. Great numbers come into the bay from September, but October and November are the months for this species. From early in December its numbers decrease, the birds most probably following the shoals of herring-fry. From the end of

December till March razorbills are scarce, and generally young birds. The autumn moult may be perceived as early as the end of August, but September is the great moulting month. Some birds late in September still have the summer dress, which is always coarse and worn. The adult in October is in the following plumage:—Body, same as in summer. Head, from the base of upper mandible, top of head, round eyes and centre of nape, black; *no white line from bill to eye;* below the indented line behind eye a patch of smoke-colour. Throat and cheeks white, the white extending above the indented line well into the nape; the black and white feathers do not end abruptly, but blend together at sides of head and neck. The plumage of a bird of the year at this season is similar almost to the adult in winter, except that the patch beneath the indented line is black, not smoke-colour, and in many cases meets the black of the back of the neck, thus separating the white of the throat from that of the head; there is *no white line.* The bird at this time is small, but by March it has not attained anything like the size of the adults. In the following autumn the year-old birds cannot be known from the adults; so that by the following spring, the bird, being under two years old, is probably able to propagate its species, like the smaller gulls.

"Two miles outside Muglins, March 25, 1862. As far as my eye could reach, north and south, in the tideway running from Ireland's Eye to Bray Head, seemed one vast sheet of razorbills; not one guillemot, either black or common, could I see: an odd cormorant and shag would be seen here and there; the common, blackheaded, herring, lesser blackbacked, great blackbacked and kittiwake gulls soared overhead, and a flock of manx shearwaters played out of gun-shot. Most of the adult gulls seemed in summer plumage; but the gulls were a moiety compared to the countless number of razorbills: large as the flock appeared, at no time did you see much more than half, for as many were under as above water. Their incessant diving made a strong ripple on the quiet water, which literally sounded as if agitated by a strong wind, while overhead the cat-like cry of the kittiwake, the bark of the common gull, the screech of the blackheaded, and the laugh of the herring gull, made a medley of sounds fearful to any but a naturalist's ear. To shoot above or below was next to impossible. I tried one shot at a noble great blackbacked gull, but five blackheads and a herring gull fell instead; the former have the heads nearly brown, the latter pure white. Among the razorbills there was no fighting, though birds would strike each other rising, the only token of fear or anger being a guttural croak, pronounceable as "thoke."

When one rose near my punt, he would look wildly at me, raise his tail in the air, utter his croak, swim rapidly for a few yards, and then dive again. Their food was the fry of the sand-eels. Of this vast host of birds about one-third were in transition plumage, the rest in winter dress. The young as in winter, but generally with the addition of a *white-speckled line* from bill to eye; young birds shot in January never have this line. Is this line the only difference in the young from first winter and second summer (*i. e.*, that after which they have been hatched), or does the young assume the dark head in second summer? I have never seen yearlings here in summer. Five adults shot are all in different plumage: No. 1 nearly all black on the head and upper neck; No. 2 thickly speckled black; No. 3 as in winter, but with the *white line speckled;* No. 4 as in winter, *no white line*, but indicated at eye and bill by some *white feathers;* No. 5, *no white line.* All the birds partly black show the white line distinctly.

"February 28, 1864. Shot six razorbills (a rarity at this time of year in the Bay), not for wanton cruelty, but for hat furniture for some of my fair friends: two were young birds—*no white line;* the other four adults in winter plumage, one having a *slight indication of the white line.*

"April 2, 1864. Tried the plumage of the razorbill again to-day; shot four, two adults in winter plumage *still*, one with a *speckled white line*, the other minus; the other two are nearly black, white line perfect; the bird without the line is oldest of the four and a male. At first I fancied these lineless birds were 'two-year olds,' but the 'yearlings' having a white line in March, and even getting it in February, routed this notion. The simple fact alone, that all birds in the one year want this line, clearly, I think, proves it only to be a summer appendage, assumed by individuals the first thing in the spring moult; I never saw a summer bird without it.

"March 2, 1865. A young razorbill killed to-day is getting the *white line;* an adult indicates it by five or six feathers: one shot late in February wants it.

HARRY BLAKE-KNOX.

Dalkey, County Dublin, April 3, 1865.

The Golden Oriole.—The last specimen which I reported to you from Scilly turns out to be a male bird, and, from the generative organs being at least one half the size of the first bird, I should imagine that it was last year's bird, and the first a two-years

old bird. I have now traced four distinct states of male plumage before this species attains its perfect livery.—*Edward Hearle Rodd; Penzance, May* 11, 1865. [This letter should have followed the two immediately succeeding.—*E. N.*]

Occurrence of the Golden Oriole at the Scilly Isles.—I have before mentioned, I think, that the golden oriole has been observed at Scilly, and that the prominence of its bright plumage scarcely admitted of a particle of doubt of the fact. Mr. Smith's servant has sent me a good specimen, which he said he had shot in the gardens of the Abbey yesterday, and adds, in his note, he has seen one or two specimens besides. I only hope they may not be destroyed, and that they may have a chance of building and rearing a brood in the beautiful exotic shrubbery in the grounds of the Abbey. The specimen sent here appears to be a male bird of last year, as there is a mixture of green with the yellow on the back.—*Id.; May* 6, 1865.

Female Golden Oriole at Scilly.—I regret to say that an adult female of this species has fallen a victim to powder and shot, where its male companion was killed a few days since. Unfortunately the Scilly packet did not sail in time to convey my request that the other specimen should be spared.—*Id.; May* 9, 1865.

Occurrence of the Hoopoe and Golden Oriole at Scilly.—There is a hoopoe flying about at the Abbey Gardens, and one other golden oriole, in a fine state of plumage. The first plumage on its leaving its nest appears to be principally brownish gray, with perhaps some yellow on the upper and lower tail-feathers; the second state shows an approximation to that of the adult female, and which I reported to you in the second example sent over from Scilly as being a female, but which proved to be a male; the third state of plumage shows a fine tone of saffron-yellow, but of a darker tone, the yellow being (if I recollect the characteristic rightly) King's yellow; the fourth state is that of the specimen I had from this neighbourhood some years since, which is of a pure bright sienna-yellow, of almost dazzling brightness, and showing a lovely contrast with its black wing and tail.—*Id.; May* 14, 1865.

Occurrence of the Squacco Heron near Carhayes Castle, Cornwall.—This little heron was captured at St. Michael, Carhayes, a fortnight since, in an exhausted and emaciated state. Although pretty far advanced in our spring season, I regret that this specimen showed no external signs of plumes. The same remark applies in a more or less degree to all the specimens that have come under my notice here in the last thirty years.—*Id.*

Arrival of Hirundine Immigrants at Blackheath.—On Thursday, April 20, 1865, at 5.50 P.M., I saw one swallow fly over St. Germain's Place. In the afternoon of Sunday, April 23, I saw one sand martin hawking over the round pond in Blackheath Park. On Monday, April 24, I observed two house martins carefully examining their old nest: I watched them fly out and join four sand martins and one swallow feeding about the round pond: the house martins began to repair and build up their old nest the next day: I have for years noticed they fly to their old nests directly they arrive, which satisfies me the same birds return to the same locality.—*Matthew Hutchinson; Blackheath, S.E., May* 11, 1865.

Arrival of Vernal Immigrants at Birmingham.—The chiffchaff, willow wren, wheatear, whinchat, swallow and sand martin have been with us some few days. This morning (April 19th) I saw a redstart. Yesterday the cuckoo was heard in Sutton Park.—*Charles B. Hodgson.*

Arrival of Vernal Immigrants at Worthing.—I send herewith a list of spring

migrants observed during the present year in the neighbourhood of Worthing, with the earliest dates at which they were noticed: for many of these particulars I am indebted to Mr. Wells, birdstuffer, of Worthing:—

March 25. Wheatear.
April 1. Dartford Warbler, male and female, on the Downs.
„ 4. Yellow Wagtail.
„ 6. Greater Whitethroat, Chimney Swallow and Black Redstart (male).
„ 8. Thicknee.
„ 9. Willow Wren and Chiffchaff.
„ 14. Cuckoo. Hoopoe at Patching.
„ 15. Redstart and Nightingale.
„ 17. Garden Warbler.
„ 18. Sedge Warbler.
„ 20. Blackcap, Tree Pipit, House Martin and Lesser Whitethroat.
„ 24. Two additional Hoopoes at Patching.
„ 28. Pied Flycatcher. Dartford Warbler (male) exhausted on the beach.
„ 29. Turtle Dove and Swift.
„ 30. Spotted Flycatcher.

—*J. H. Gurney; Worthing, May* 6, 1865.

Two Young Cuckoos and an Egg in a Meadow Pipit's Nest.—During an interview with a friend of mine a short time since, I happened to make a few remarks respecting the curious propensity of the cuckoo in the laying of its egg in the nests of other species, when he informed me of a singular instance that came under his notice last breeding season. A respectable young man, named Dunn, with whom he is acquainted, was out egg-collecting with a companion, on Mousehold Heath, near this city, one afternoon during the summer, when he discovered a nest of Anthus pratensis, situated under cover of a furze-bush. They were both much surprised to find that it contained, in addition to two of the owner's offspring, two young individuals of Cuculus canorus and an addled egg of the same species: they took possession of the nest and its occupants, and brought them home, when my friend had an excellent opportunity of seeing them himself. Knowing this circumstance to be of rather unusual occurrence I take this opportunity of placing the facts before the readers of the 'Zoologist' just as I received them from my friend, and on whose statement I can place every possible reliance.—*T. E. Gunn; Norwich, April*, 1865.

Eared Grebe near Barnstaple.—I have the pleasure of recording the occurrence on the River Taw, near Barnstaple, of a fine male example of this scarce bird. It was shot, on the 7th inst., by a boatman of the town, who tells me that when he killed it it was in company with four others of its own species. This is the first time, to my knowledge, that it has been noticed in the north of Devon. The bird, which is in beautiful summer plumage, is now in my possession, and it was by the merest piece of good luck that I managed to obtain it. I arrived here on the 14th inst., and the next day heard that a queer bird had been shot on the river, and on going to see it I found it among a heap of rubbish in an out-house, where it had been thrown, as no one knew its value or cared anything for it. It had been killed eight days, but was only just beginning to putrefy, as fortunately it had been shot clean. It is a marvel to me how it escaped, for such a time, the attentions of either cats or rats; perhaps, however, they do not admire the fishy flavour of marine birds. On dissecting this bird I found its stomach contained, as is usual with birds of this family, a ball of its own under

feathers, tightly packed together, and stained of a saffron-colour, in which were the elytra of two or three species of Coleoptera, among which I recognized those of Badister bipustulatus and Phylan gibbus; there were no signs whatever of marine Crustacea or small fish. I have drawn up a description of this bird, as that given by Yarrell is evidently from a younger or more immature specimen than mine. Beak black; tip of lower mandible, which is curved upwards, slightly tinged with horny white; irides scarlet; head, upper surface of neck and throat black; lower part black, streaked with silver-gray and chestnut; chin black, with a few scattered white feathers; from behind the eye, and forming the ear-coverts, a triangular patch of elongated feathers, rich chestnut-brown; the black feathers of the head and upper portion of the throat are also somewhat elongated; back and all the upper surface of the body dark shining brown, almost black; secondary wing-feathers white, but scarcely seen unless the wing is expanded; breast and belly pure shining silvery white; sides under the wings and flanks chestnut, mingled, on approaching the lower part of the body, with white and dusky streaks; legs dark green on the outside, greenish olive within. Whole length nearly thirteen inches. — *Gervase F. Mathew; Raleigh House, near Barnstaple, April* 20, 1865.

Carnivorous Propensity of the Great Blackbacked Gull.—The account given by Dr. Saxby, in his "Ornithological Notes from Shetland" (Zool. 9486) of three great blackbacked gulls attacking and killing a wounded golden-eyed duck, and at which he expresses surprise, brings to my recollection a somewhat similar case which occurred one day when I was shooting in the neighbourhood of Lisbon. I was being rowed in a small boat up a stream which flows into Jackass Bay, at a place called Coinha, nearly opposite the city, when a mallard widgeon passed, at a considerable height above my head; I fired at and evidently struck it severely, as it flew on up the stream with apparent difficulty, and was soon lost to view, owing to a bend in the river. I loaded again and proceeded, and a short time afterwards observed a great blackbacked gull struggling with something in the middle of the stream, some distance ahead of me: on pulling towards it the gull rose, but was not sufficiently close to kill, although I treated it to a charge of No. 4. On approaching the dark object left floating on the surface of the water, I discovered that it was my mallard widgeon; it was quite warm, seemed to have been dead only a few moments, and was little damaged, having lost but one of its eyes, and some of the feathers of the shoulders having been plucked off, the flesh exposed and slightly torn, but in other respects quite presentable for the table.—*Id.; Portsmouth, March* 18, 1865.

Proceedings of Societies.

Entomological Society.

May 1, 1865.—H. T. Stainton, Esq., V.-P., in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Natural History Society of Dublin,' Vol. iv. Part 2; presented by the Society. 'Bulletin de la Société Linnéenne de Normandie,' Vol. ix.; by the Society. 'Mémoires de la Société de Physique et d'Histoire Naturelle de Genève,' Tome xvii.,

2e Partie; by the Society. 'The Entomologist's Monthly Magazine' for May; by the Editors. 'The Zoologist' for May; by the Editor.

Election of Members.

F. D. Godman, Esq., of Park Hatch, Godalming; J. T. D. Llewellyn, Esq., of Ynisygerwn, Neath; and W. H. Groser, Esq., of 19, Claremont Square, London; were severally ballotted for, and elected Members.

C. B. Clarke, Esq., Fellow of Queen's College, Cambridge; Edward Clift, Esq., of Lewisham; and Mr. W. Farren, of 10, Crescent, Cambridge; were severally ballotted for, and elected Annual Subscribers.

Death of William Sharp MacLeay.

The Secretary read from a Sydney paper of the 30th of January, 1865, an obituary notice of William Sharp MacLeay, whose death, at the age of seventy-two, occurred on the 26th of that month. Mr. MacLeay was elected a Member of this Society in 1837 and a Member of the Council for 1838, but resigned on his departure for Australia in 1839.

Exhibitions, &c.

Prof. Westwood mentioned that with reference to the jigger, the subject of some discussion at the previous Meeting, Mr. F. Smith had called his attention to a passage in Waterton's 'Wanderings in South America,' pp. 173, 174, as tending to show that the larvæ fed on the flesh in which they were deposited. He considered, however, that further observation on this point was necessary.

Mr. S. Stevens produced a Cassida, which he had hoped to have exhibited alive; it had been found some days previously in London, near a newly-opened case of Orchids, but had unfortunately died a few hours before the Meeting. Mr. Baly recognized the beetle as a Himalayan species of the genus Brioptera.

Mr. Stainton exhibited a nest of smooth (hairless) Lepidopterous larvæ found near Marlborough, hanging from a beech-tree by means of silken strings, which were at first mistaken for threads.

Mr. Dunning read the following extract from the 'Journal of the Society of Arts' for the 14th of April, 1865:—

"*A new American Silkworm.*—It appears, from 'Silliman's Journal,' that after numerous experiments, Mr. L. Trouvelot, of Medford, Mass., has succeeded in rearing successfully, and in great numbers, Attacus Polyphemus, *Linn.*, and in preparing from its cocoon an excellent quality of silk, possessing great lustre and strength, and pronounced superior to Japanese and all other silks, except the best Chinese, by competent judges. The silk is unwound by a simple process perfected by Mr. Trouvelot, each cocoon yielding about 1500 yards. This insect is very hardy, being found throughout the Northern States and Canada; and, as it feeds upon the leaves of oak, maple, willow, and other common forest trees, may be reared easily in any part of the country. Mr. Trouvelot has gradually increased his stock from year to year, by raising young from the eggs of the few individuals first captured, until he has at present seven waggon-loads of cocoons, the entire progeny of which he proposes to raise during the coming season. The first public notice of his experiments with this insect was given by Mr. Trouvelot at a meeting of the Institute of Technology, at Boston, about a year ago, when he exhibited specimens of silk manufactured from it, both natural-coloured and dyed."

Mr. F. Smith read the following letter from Mr. T. C. Jerdon, dated "Lahore, March 16, 1865:"—

"I have at last got hold again, after a long absence, of the specimens of workers of Dorylus, and they are, as you suggested, evidently, I think, Typhlopone. It is, however, strange to say, quite a Termes in its *habits*, working under ground *entirely*, and never coming outside except when the males are coming forth winged, when they accompany them in swarms to the holes by which they make their exit. I first observed the workers at Mhow, in Central India, where they had undermined a house so completely that the foundation had to be dug up, and I there saw the winged males (*Dorylus*) issuing out of the same holes as the workers. I afterwards saw them twice again; the last time in a green-house of the Botanical Garden at Saharunpore, N. W. Prov. They were issuing every morning and evening in great numbers from a hole in the flooring (lime), and several winged individuals were with them, and these entered houses at night: this was in February. I have met with Dorylus in every station where I have been, and it is certainly curious that the workers are so little known, as they must have been observed occasionally by hundreds of Europeans. I have a lot in spirit, and enclose you three or four in this letter, enough, I dare say, to show if it is the same species mentioned in your 'Catalogue,' T. Curtisii, or not. Dr. Jameson laughed me to scorn when I talked of digging up the flooring of his pet green-house, but if I ever get an opportunity of another nest in a get-at-able situation I will try and get at the mystery of the female. Surely, however, some of the winged individuals must be females; if not, then the only other conclusion is that the female always remains apterous, and is impregnated in the nest; or, if winged, that she is kept a forcible prisoner till her wings drop off. I would have written long ago, but was separated from the bottle containing the workers."

Mr. F. Smith thought there was now little doubt that Typhlopone was the worker of Dorylus, as had been suggested years ago by Shuckard. The female, however, was still unknown.

Prof. Westwood enquired whether Mr. Smith was acquainted with the insect which Gerstäcker represented to be the female of Dorylus; it was very different from Typhlopone. Mr. Smith replied that he had never seen the large female in question, but he believed its connexion with Dorylus to be purely conjectural.

The Rev. Hamlet Clark exhibited an interesting collection of Phytophaga received by him from Mr. Du Boulay, who captured them in the district of Champion Bay, West Australia. Among the many novelties was a very abnormal form of Eumolpidæ, unique in structure not only among Eumolpidæ but throughout the Coleoptera: the male leaps vigorously and quickly when captured, and it is the only species of Eumolpidæ that is known to be saltatorial; but the peculiarity of the insect is, that it is not the posterior but the *medial* femora which give this power of leaping: the posterior femora are of ordinary form, or perhaps somewhat attenuate; the medial, however, are very robust, incrassated, sufficiently elongate and with strong and curved tibiæ. Mr. Clark remarked that it might be a question whether the insect properly belonged to the Eumolpidæ or to some other group: he stated that it had been carefully examined not only by himself but by Mr. Baly, and that there seemed to be no doubt on the subject. He proposed to create a new genus for the reception of this insect, and to describe it under the name of Thaumastomerus viridis.

The Rev. H. Clark read from 'The Reader' of the 1st of April, 1865, the following

extract from a review of Cameron's recent work on 'Our Possessions in Malayan India:'—

"The following account of that very common tropical phenomenon, the light of the fireflies, is altogether new to us, and not quite intelligible. Does the author mean that the little insects actually keep time with each other so accurately, that thousands of them scattered over a shrub or tree all put out their lights at the same instant, and rekindle them with equal punctuality? If so, here is a new insect-wonder, before which the economy of bees and ants will sink into insignificance:—'The bushes literally swarm with fireflies, which flash out their intermittent light almost contemporaneously; the effect being that for an instant the exact outline of all the bushes stands prominently forward, as if lit up with electric sparks, and next moment all is jetty dark—darker from the momentary illumination that preceded. These flashes succeed one another every three or four seconds for about ten minutes, when an interval of similar duration takes place, as if to allow the insects to regain their electric or phosphoric vigour.' We commend this as a subject of investigation for those naturalists who are so fortunate as to live among fireflies."

Mr. Clark added that, though he was utterly unable to give any explanation of the phenomenon, he could so far corroborate Mr. Cameron as to say that he had himself observed this simultaneous flashing; he had a vivid recollection of a particular glen in the Organ Mountains, where he had on several occasions noticed the contemporaneous exhibition and extinction of their light by numerous individuals, as if they were acting in concert.

Mr. M'Lachlan suggested that this might be caused by currents of wind, which, by inducing a number of the insects simultaneously to change the direction of their flight, might occasion a momentary concealment of their light.

Mr. Bates had never in his experience received the impression of any simultaneous flashing; on the contrary, he thought there was the greatest possible irregularity in giving and extinguishing the light, and that no concert or connexion existed between different individuals; he regarded the contemporaneous flashing as an illusion, produced probably by the swarms of the insects flying amongst foliage, and being continually, but only momentarily, hidden behind the leaves. Mr. Bates further remarked that the light-emitting insects were Lampyridæ, not Elateridæ (Pyrophori), which rarely flew by night; the Lampyridæ had a weak vacillating flight, the number of species was very large, and he had himself found eighty or ninety species; several species would flit about together, and in the squares of Parà he had captured three distinct species; it would be curious if there were any concert or action in unison between individuals of different species.

Mr. Clark remarked that the lights of the Lampyridæ and Elateridæ were perfectly distinguishable; it was the former which gave the intermittent flashing light.

Mr. W. W. Saunders had frequently observed the fireflies in Bengal, at Pondicherry and at Madras; they usually flew at a height of ten to fifteen or twenty feet, amongst the foliage; he had never noticed any flashing or regularity of intermission, and thought that each individual was perfectly irregular, and independent in the exhibition or extinction of its light.

M. Sallé (who was present as a visitor) had never observed any flashing or regular intermittency, or simultaneous emission or extinction of the light.

Prof. Westwood was unable to recall any analogous phenomenon; the simultaneity of the flight of *Empis* over standing water seemed to be the nearest in point.

The Rev. H. Clark mentioned that a lady residing near Buckingham Gate had introduced into her garden a quantity of peat for horticultural purposes, and now found that part of the garden to be very much infested with wood-lice. When asked for a remedy, he had suggested the application of hot water, or the importation of toads; he was curious to know whether there was any affinity between the peat and the wood-lice?—were the latter breeding in the peat, or feeding on it?

Mr. W. W. Saunders was in the habit of using a great deal of peat for horticultural purposes, but he had not noticed that it was particularly acceptable to wood-lice, which moreover would not be likely to occur in the places whence the peat was brought.

Prof. Westwood remarked that wood-lice were fond of decaying wood, and the taste of peat was probably not dissimilar; he did not think the creatures were introduced with the peat, but they might be attracted to it, especially in the absence or scarcity of their natural pabulum. Frogs, toads, or hedgehogs would eat up the wood-lice; but the best way of extirpating them was to pour boiling water upon them, which might be readily done, as they were always found to congregate in the angles of a frame or other construction, or just within the frame between the sides thereof, and the soil or manure within.

Mr. J. J. Weir did not find that frogs, toads, or birds kept down the wood-lice; he had tried numbers of frogs and toads, but they were ineffectual.

Mr. Stainton directed attention to a paper by Mr. B. D. Walsh "On the Insects Coleopterous, Hymenopterous, and Dipterous, inhabiting the galls of certain species of Willows," published in the proceedings of the Entomological Society of Philadelphia for 1864. In this paper the author proposed to name and describe the galls found on willows at Rock Island, Illinois, the insects which produce them, and also other insects which habitually breed in the galls formed by true gall-makers, and which, as they feed on the substance of the gall itself and only occasionally or incidentally destroy the gall-making insect, may be appropriately considered as "Inquilines" or Guest-flies. Mr. Walsh enumerates five species of willow, Salix discolor, *Muhl.*, which yields three distinct galls; S. cordata, *Muhl.*, which yields six galls; S. longifolia, *Muhl.*, which yields three; S. nigra, *Marshall*, which yields two galls, and S. humilis, *Marshall*, which yields no less than ten distinct galls; some of these galls, however, occur on more than one species of willow. Besides the true galls, a Coleopterous pseudo-gall was found on Salix longifolia. Of twenty-one undoubtedly distinct galls, twelve are made by Diptera (Cecidomyidæ) and six by Hymenoptera (Tenthredinidæ). In addition to a great number of insects which occasionally inhabit these galls, there are, of true inquilines, which seem to inhabit them exclusively, but without confining themselves to one particular species of gall, seven Cecidomyidous species, two Tenthredinidous species, and at least one, and probably four or five Coleoptera, besides seven species of Micro-Lepidoptera. The author points out the danger of mistaking inquilines for the true makers of the gall, and gives numerous instances in which saw-flies are inquilinous in the galls of gall-gnats, and gall-gnats inquilinous in the galls of saw-flies. The same gall is often inhabited by several different species of inquilines, and many species of guests habitually live in the galls of several different species of hosts. Occasionally one and the same species is sometimes inquilinous in the galls of other insects, and sometimes attacks natural substances in no wise connected with galls. "Nothing gives us a better idea of the prodigious exuberance of insect life and of the manner in which one insect is often dependent upon another for its very

existence, than to count up the species which haunt, either habitually or occasionally, one of these willow galls, and live either upon the substance of the gall itself or upon the bodies of other insects that live upon the substance of the gall. In the single gall, Salicis brassicoides, *n. sp.*, there dwells the Cecidomyia, which is the maker of the gall—four inquilinous Cecidomyiæ—an inquilinous saw-fly—five distinct species of Micro-Lepidoptera, some feeding on the external leaves of the gall, and some burrowing into the heart of the cabbage, but scarcely ever penetrating into the central cell so as to destroy the larva that provides them with food and lodging—two or three Coleoptera—a Psocus (Pseudo-Neuroptera)—a Heteropterous insect found abundantly in several other willow-galls—an Aphis, which is also found on the leaves of the willow, but particularly affects this gall—and, preying on the Aphides, the larva of a Chrysopa (Neuroptera) and the larva of a Syrphide (Diptera)—besides four or five species of Chalcididæ, one Braconide Ichneumon, and one Tachinide, which prey upon the Cecidomyiæ and the Micro-Lepidoptera; making altogether about two dozen distinct species, and representing every one of the eight orders, if with Sieboldt, Erichson, and Hagen, we refer Pseudo-Neuroptera to Orthoptera."

Referring to the alleged discovery of Wagner that the larvæ of Cecidomyia breed young ones,—that a second generation of larvæ is developed within the bodies of the first,—the author expresses his firm belief that the young larvæ which crept out of the bodies of Cecidomyia larvæ were nothing but larvæ of Chalcididæ or Proctotrupidæ, several species of which he knew from experience to breed inside the bodies of larvæ of willow Cecidomyiæ. As to Wagner's statement that the same newly-born larvæ went through the same process a second time, he believes to be a pure and simple delusion.

Mr. F. Smith was now in possession of numerous rose-galls, from which had hatched several specimens of Nematus; these, however, were not the makers of the gall, but were either "inquilines" or they might have been in or on some other part of the wood; the real inhabitants of the galls were now in the pupa state.

Papers read.

Mr. Bates read a paper "On New Species of Agra from the collection of Mr. W. W. Saunders," and described four new species: A valentina, from Venezuela; A. dominula and A. Saundersii, from Peru; and A. occipitalis, from Brazil.

Mr. F. Smith read "Descriptions of some Species of Hymenopterous Insects belonging to the Families Thynnidæ, Masaridæ, and Apidæ." Most of the insects were brought from Western Australia by Mr. F. Du Boulay. The new Thynnidæ comprised Thynnus ventralis, Ælurus agilis, Rhagigaster simillimus and R. flavifrons. Of Masaridæ there were three new species of Paragia, P. calida, P. venusta, and P. vespiformis. But the most remarkable insect was a leaf-cutting bee with antennæ like a butterfly, for which a new genus was proposed, and it was described as Thaumatosoma Duboulaii.

The Rev. Hamlet Clark read "Descriptions of new Phytophaga from Western Australia." Five species of Paropsis, two of Australica, a Chalcomela, a Chalcolampra, and two species of Geloptera were described; most of them from Champion Bay, and captured by Mr. F. Du Boulay.—*J. W. D.*

Notice.—My readers will scarcely fail to observe that a large portion of the present number, concluding with "Insects," p. 9641, consists of the overflowings of No. 285. I trust to be able to publish a double number early in the autumn, and thus bring up arrears.—*Edward Newman.*

Peregrine Falcon breeding on the Antrim Coast.—I have much pleasure in observing that the peregrine falcon breeds along this coast. I was present at the taking of a nest on the 24th of May: the nest was obtained by lowering a person down the rock by means of a rope; it contained three young falcons, about eight days old. The nest was composed of feathers only, and in close vicinity with jackdaws, hooded crows and swifts. The old birds hovered over our heads, uttering a most peculiar cry, but kept at a sufficient distance to defy the skill of the gunners awaiting them.—*Thomas Brunton; Glenarm Castle, Larne, County Antrim, Ireland, June* 6, 1865.

Hobby feeding on Beetles.—On the 24th of May, at Mappowder, Dorsetshire, I obtained a fine male hobby, in the flesh. On opening the maw, after skinning it, I found the remains of insects solely. A female kestrel, examined the same day, contained a longtailed field mouse.—*W. Jesse, jun.; Maisonette, Ingatestone, Essex, June* 8, 1865.

Note on the Kestrel.—If you look at a kestrel when in the act of hovering you will observe that the wings are expanded to their full extent, the tail is spread and bent slightly downwards, the head is also bent a little downwards, so that the head and body with the tail form a kind of arch: this position, together with the power it possesses of inflating itself, enables it to poise almost motionless in the air for several seconds together. It is not perhaps generally known that the kestrel while hovering has its bill wide open, and its throat and breast perceptibly distended: I have good opportunities of observing this in a tame kestrel, which lives in an aviary, into which one of the windows of my drawing-room opens. I have frequently seen her hovering in the aviary, as if for the sake of practising her powers, and as she is very tame and sociable, and thinks it a great privilege to be allowed to come into the dining-room, she is sometimes permitted to do so: on one occasion, a short time since, after hovering for a second or two over the table, she made a sudden swoop into the plate of one of my children and carried off the leg of a rabbit, which she bore in triumph into a corner, where she devoured it at her leisure.—*H. T. M. Kirby; Mayfield Vicarage, Sussex, May* 19, 1865.

Remarkable Preservation of Robin's Eggs.—Early in April a young neighbour brought me a nest containing three out of four eggs, which he had found in a sheltered situation. Surprised to find eggs so dirty, rather than at eggs at all in an old nest, the lad examined the contents of one, which proved to be completely dried up. Considering that they must have lain here, at least, since June of last year, or possibly of the previous one, their comparative freshness of colouring is remarkable: when freshly-laid they must have been more richly coloured than usual, the blotches of red-brown being larger than I ever noticed in this species, although the neighbourhood is peculiarly rich in varieties of robin's eggs.—*H. Ecroyd Smith; Egremont, Birkenhead.*

Singular Position of a Robin's Nest.—A young friend of mine the other day was crossing a small piece of waste ground near his residence, when, tripped up by a branch of gorse, his foot came in contact with a broken and discarded flower-pot, whence, on the instant, out flew a robin. Inside was found its nest containing six eggs, and, the

mouth of the pot being turned towards a large gorse-bush, a sheltered entrance was secured, and in the opposite hole a capital eyelet for all approaching intruders during incubation.—*H. Ecroyd Smith.*

Early Nesting of the Longtailed Tit.—Although known as a resident in some of our more sheltered woods, this species is but seldom seen, and the nest has very rarely been taken in this marine locality. I was consequently agreeably surprised, after so severe and late a winter as we have experienced, to find, on the 2nd of April, the exquisite architectural curiosity, of which I herewith enclose a photograph. This nest was seen fully a dozen yards from the bush of mingled wild briar and whitethorn in which it was placed, not a single spray of which could be said to be in leaf, as the buds were only bursting, and of the branchlets encompassed by the structure several proved to be dead, thus rendering it still more difficult (from breakage) to retain the nest with its original surroundings, meagre as these were. The nest you have selected as a frontispiece to 'Birdsnesting' will not bear comparison for an instant with this one, either in contour, material, or general beauty, the gray lichens in their crisp prominence adding strikingly to their effect. To count the eggs it was necessary to turn the nest, when carefully cut from the bush, completely upside down, and then allow them to work gently out of the aperture into the hand; otherwise the entrance, only the size of a half-grown mouse, would have been strained out of shape. The eggs proved a fair average number, *viz.* nine; and mention should also be made that the bush in which the nest lay stands close to an open foot-path, thus rendering the little domicile still more a mark for observation.—*Id.*

A Rook's Nest on the Ground.—A curious case has come within my knowledge, of which the following are particulars:—This season a pair of rooks nested on the ground, in a meadow on Oakenclough Farm, in the occupation of Mr. Shirley, near to Longner, North Staffordshire. After depositing her eggs the hen sat closely on them up to Monday, the 15th inst.; but about that period rain fell heavily and flooded the part of the meadow where the nest was situated, thereby causing the rook to temporarily forsake it. When the flood subsided, she again commenced sitting on her eggs; but of course they then came to nothing, as they had become rotten in the interval.—*James Turner, in the 'Field' of May* 26, 1865.

A Rook Fishing.—As I was sculling on the river at Oxford, yesterday, I observed a somewhat singular occurrence in Natural History. I saw a rook, hovering some distance above the water, suddenly swoop down like an osprey, and emerge from the river with a small fish in his claws, and fly away with it. I am sure the bird was a rook, and not a carrion crow. Have any of your readers seen or heard of rooks catching fish?—*From the 'Field' of May* 26, 1865.

The Great Black Woodpecker.—Mr. Stevenson, with that laudable love of truth which characterizes all that he has published, has entirely demolished (Zool. 9249) the "two examples of the great black woodpecker killed in a small wood near Scole Inn, in Norfolk." They were the large spotted woodpecker, as the shooter of them states his belief. Lord Derby's specimen thus becomes the only undoubtedly British-killed example of the species. It is therefore very desirable to test the authority on which this specimen is retained. For this purpose I refer to Dr. Collingwood's 'Historical Fauna of Lancashire and Cheshire,' and find, at page 16, the following passage:—"Another and much rarer woodpecker is the great black woodpecker (*Picus martius*), concerning which not a little doubt has been experienced as to its ever having been met with in this country. Montagu, in his 'Supplement to the Ornithological

Dictionary,' says, 'Lord Stanley assures me that he shot a Picus martius in Lancashire.' Yarrell repeats this statement, and the same may be found in Latham's 'General History of Birds,' 1822, vol. iii. p. 430. Under these circumstances we might have hoped to have found the specimen in our museum. But in the edition of Latham, annotated by the late Earl of Derby, and now in the possession of the present Earl, the passage 'One was killed in Lancashire by Lord Stanley' is erased, and in the margin is written, in his lordship's own hand, '*a mistaken idea!*'" Is any reader of the 'Zoologist' in possession of information respecting other reputed British examples of this bird? if not it must share the fate of many others introduced in error. —*Edward Newman.*

Hoopoe near Ingatestone.—On the 20th of April a hoopoe was seen by Mr. Looker, gamekeeper, on Woodbarns Farm, near here, and for several days after: he tried to obtain the specimen for me, but was unsuccessful. I can perfectly rely on his statement, his knowlege of our birds and their habits being above the average.—*W. Jesse, jun.*

Hoopoe near Lowestoft.—On the 21st of April a nice mature male specimen of the hoopoe was killed near Lowestoft, in Suffolk.—*T. E. Gunn; Norwich, May* 2,1864.

Hoopoe near Lynn.—A fine specimen of this bird was shot at Walpole St. Peter's on the 25th of April, 1865.—*Edward L. King; King's Lynn, Norfolk.*

Hoopoes on Streatham Common.—A fine male hoopoe was brought me a few days ago by a friend, who had just shot it on Streatham Common: as another has been seen in the neighbourhood the poor birds were doubtless breeding. In the stomach of the one I have I found seventeen perfect skins of large larvæ and a number of the hard head-plates of others, but no remains of Coleoptera whatever. I enclose two skins of larvæ, as I took them from the stomach: I think you will be able to name the species: they were all alike.—*David Thomas Button; Park Road, Clapham, May* 27, 1865. [The skins are those of the larva of Zygæna Filipendulæ.]

Discovery of Starlings' Skulls.—Last Friday, while seeking for nests with a friend, we found a hollow elm tree, with straws protruding from a hole about ten feet from the ground, which induced me to mount and examine; the result was as follows:—I extracted *in toto* about a barrow-load of decayed organic matter, evidently the deposit of years: the principal portion of this I drew out downwards; that is, the hole I worked at was nearly at the bottom of the deposit. About eight feet above the above-mentioned hole was another one tenanted by a pair of starlings, whose nest formed the newest layer of the whole accumulation, the component parts of which were as follows:—decayed straw and sticks; comminuted decayed wood; bones and feathers of starlings, *only* forty-three starlings' skulls; remains of an old stock dove's nest; portions of starling's eggs, some almost entire, occurring at intervals in the deposit. The last thing extracted was the starling's nest, as yet unoccupied by eggs or young: the old birds were evidently very much distressed at my interference. *Query*, What does this mean? I have frequently before found the "larder" of a pair of kestrels or sparrowhawks, but the contents, as far as birds and animals went, were various; *i. e.*, sparrows, greenfinches, thrushes, mice, young rabbits and rats, &c.: the usual pellets of skin and fur are also to be found in such situations; whereas, in this instance, I found not one particle of evidence of hawk or owl, except one feather from the breast of a sparrowhawk, but this was very close to the new starling's nest, and therefore perhaps formed part of the materials brought by the starlings. Is it possible that this has been the cemetery of all the ancient and time-worn starlings of the neighbourhood?

May not starlings, like many other members of animated nature, seek to hide their weakness and coming desolation from their fellow kind, as it is a known fact that many birds and beasts bully their own sick, and indeed kill them outright, apparently to rid the world of useless lumber? I have only once found a starling dead, apparently from sickness and old age combined, and I have it now stuffed. Can any of your correspondents solve this mystery for me? I have kept the forty-three skulls and portions of the deposit, and should any correspondent wish to see them I will, with your permission, leave them at the office of the 'Zoologist.'—*W. Jesse, jun.*

Small Eggs of the Common Domestic Fowl.—A lady residing in this neighbourhood possesses a hen which has successively laid nine eggs, almost as small as those of the kingfisher, and of similar shape, but as usual devoid of yolk, the cletch being complemented by a remarkably malformed egg, three inches long and about one inch broad, which, near one end, contained a yolk, beneath which lay a hard, horny-looking substance, yellow in colour, and apparently a second but malformed yolk. The bird being of mature age, neither young nor yet old, I take the occurrence to be an uncommon one.—*H. Ecroyd Smith.*

Little Bittern near Plymouth.—Two little bitterns were seen in the neighbourhood of Plymouth on Sunday last, one of which was captured by a boy, who said he found it by the side of a small stream, entangled in a bramble-bush, and that another flew away as he came up. I examined the captured bird, and found it to be a male in adult plumage.—*John Gatcombe*; *Lower Dunford Street, Stonehouse, Devon, May* 14, 1865.

Snipe Nesting in Warwickshire.—This morning (April 19th) I saw a nest of this bird in Sutton Park, Warwickshire. It contained four eggs quite fresh. The nest was placed amongst some heather on a marshy ground adjoining one of the pools in the park, and was not at all concealed. Is it not early for the snipe to breed?—*Charles B. Hodgson.*

Plumage of the Ruff.—Mr. Rodd inquires (Zool. 9565), "How old are the male birds before they put on their full court dress?" No author, that I know of, has satisfactorily ascertained the point. Temminck remarks, "Les plumes de la fraise sont plus ou moins longues suivant les âges des mâles." But Montagu, who devoted much time and attention to the subject, seems to have thought that the ruff arrives at maturity in one year, for he remarks, "It does not appear to be the opinion of fowlers that the males are more than one season arriving at maturity. * * * The opinion, therefore, that those ruffless males are birds of a very late brood of the preceding season, is a reasonable conjecture. * * * The tail of the young birds is more brown, * * * and those with dark feathers predominating, have the darkest bills and legs. * * * We observed that those who had the ruff more or less *white*, retained that colour about the neck after the autumnal moult. * * * A young male that was taken destitute of a ruff in the breeding season, whose plumage was mostly cinereous, except about the neck and head, put on the ruff in confinement the next spring, * * * and the feathers were a *mixture* of *white* and chestnut. * * * On the 17th of May, 1806, a ruff, shot in Devon, had a *white* ruff, quite *perfect*." These remarks lead to the conclusion that the writer, as well as the fowlers referred to, may have erred in supposing that the ruff "arrives at maturity in one season." The male with the "*white* ruff, quite *perfect*," was probably an old bird, the *pure white* plumage being generally found typical or characteristic of maturity or age. The plumage being so varied in individuals of this species it might naturally be supposed that they are long in attaining

their dress "de parade," were not the same diversity in colouring observable in other species, the Indian sand grouse and the Coromandel quail, for instance. See my notes in the 'Zoologist' (Zool. 5748 and 5750): the italics in the above quotation from Montagu are my own.—*Henry Hadfield; Ventnor, Isle of Wight, May* 9, 1865.

Note on the Great Northern Diver (Colymbus septentrionalis).—This bird, which, in common with the other divers, is termed by the fishermen the "sprat loon," is very common on the Colne during the winter, and since the horrid and barbarous taste has sprung up of sticking a poor bird's wing into ladies' bonnets, many more of them than usual have been killed. During the six years I have lived on the banks of the Colne, and for thirty years previously in which I have been more or less engaged in the study of birds, I have never seen the red mark on the neck of Colymbus septentrionalis in winter. The neck and breast, on the contrary, according to my experience, are always in both young and old birds pure white, without even the dusky shadows which portend the black markings in the other. I do not think that any question in ornithological history is better established than this by the concurrent testimony of modern observers. Temminck must not be quoted in favour of a contrary opinion, because he says nothing about it. Degland, however (Ornith. Europ. tome ii. p. 494), says, "Male et femelle en hiver * * * bas des joues, gorge, devant et côtes du cou, poitrine, abdomen et sous-caudales d'un blanc pur lustré." Mr. Yarrell combats the opinion of Montagu, Audubon and Dana as to the permanency of the red mark, by attributing the exceptional cases which have occurred to the accidental variation of the second moult, and I think satisfactorily sets at rest the assumption of Selby and others as to the great proportion of fifty to one of our winter visitants being *young* birds, by the remark that they only bring up two young and often only one, so that, in fact, the old ones must be more numerous than the young: therefore if the latter flocked so must the former. A most unlikely and altogether improbable assumption, but, if true, one that must settle the question at once by the number of red-marked birds which would be shot every winter. Surely the question, if it be still seriously entertained, can be easily set at rest by getting specimens of red-marked birds in winter. If Captain Hadfield will be kind enough to send me one in the flesh I shall be very much obliged to him. All the pretty screens made by Mr. Rogers in the Isle of Wight that I have seen have been made with white-breasted birds. He would hardly, I think, throw the red ones away.—*C. R. Bree; Colchester, June* 6, 1865.

Whiskered Tern on the Coast of Devon.—An adult specimen of that exceedingly rare tern Sterna leucoparia was obtained near Plymouth, a few days since. I accidentally detected it in the hands of a young birdstuffer, who had just finished setting it up, but who had not the least idea of its name or rarity. He told me that it was picked up alive on the water by some fishermen and brought on shore, but soon died, apparently from exhaustion. I secured the specimen, which is now in the collection of Mr. F. C. Hingston, of Plymouth.—*John Gatcombe.*

Arrival of Summer Birds.—The following ornithological observations were made by the members of the King's Lynn Natural History Society:—

April 15. Swallow and yellow wagtail arrived.
„ 17. Cuckoo arrived.
„ 18. Wryneck arrived.
„ 21. Whitethroat arrived.
„ 29. Sedge Warbler arrived.—*E. L. King.*

An Extraordinary Toad.—During the excavations which are being carried out under the superintendence of Mr. James Yeal, of Dyke House Quay, in connection with the Hartlepool Water Works, the workmen yesterday morning found a toad, embedded in a block of magnesium limestone, at a depth of twenty-five feet from the surface of the earth and eight feet from any spring-water vein. The block of stone had been cut by a wedge, and was being reduced by workmen when a pick split open the cavity in which the toad had been incarcerated. The cavity was no larger than its body, and presented the appearance of being a cast of it. The toad's eyes shone with unusual brilliancy, and it was full of vivacity on its liberation. It appeared, when first discovered, desirous to perform the process of respiration, but evidently experienced some difficulty, and the only sign of success consisted of a "barking" noise, which it continues invariably to make at present on being touched. The toad is in the possession of Mr. S. Horner, the president of the Natural History Society, and continues in as lively a state as when found. On a minute examination its mouth is found to be completely closed, and the barking noise it makes proceeds from its nostrils. The claws of its fore feet are turned inwards, and its hind ones are of extraordinary length and unlike the present English toad. The Rev. R. Taylor, incumbent of St. Hilda's Church, Hartlepool, who is an eminent local geologist, gives it as his opinion that the animal must be at least 6000 years old. The wonderful toad is to be placed in its primary habitation, and will be added to the collection of the Hartlepool Museum. The toad, when first released, was of a pale colour and not readily distinguished from the stone, but shortly after its colour grew darker until it became a fine olive-brown.—*Leeds Mercury, April* 8, 1865. [Communicated, with the following paragraph, by Mr. E. Birchall.]

The Immured Toad.—It is stated in the 'Sunderland Herald' that the toad, lately found by some quarrymen at Hartlepool, and announced to be 6000 years old, is not a myth. The Rev. Robert Taylor, of St. Hilda's Parsonage, states that the toad is still alive, that it has no mouth, that it was found in the centre of a block of magnesian limestone, twenty-five feet below the surface of the earth, and that it differs in many respects from all ordinary toads.

The Thresher or Fox Shark at Ventnor.—It may interest the ichthyological readers of the 'Zoologist' to hear that a fine specimen of the thresher or fox shark is now on exhibition here, and not quite dead when I saw it an hour ago. It was taken with a mackerel-net, having somehow entangled itself with the rope, and it is difficult to understand how so large a fish could be secured with such slight tackle. The total length is fifteen feet four inches, of which the tail, measuring along the inferior fin from base to tip, is seven feet. The dorsal fin one foot two inches and the pectorals two feet in length. I believe this is the first example of this species taken off the island, but some say they have been seen before. The capture was made about nine miles out.—*George Guyon; Ventnor, Isle of Wight, May* 25, 1865.

Extraordinary Abundance of Heteronereis longissima.—Early in the month of April, in the present year, my attention was drawn to the fact that an immense quantity of curious swimming worms (very much in appearance like the common

Nereis obtained in the sea-water mud deposits) had been observed in the neighbourhood of the wharves and pontoon at Milbay, Plymouth, and which were described to me as swimming about in large companies on the surface of the water. I hastened to investigate the subject myself, and obtained some of the creatures, which I carefully preserved in spirits, and Mr. J. B. Rowe, of the Plymouth Institution, has pronounced them to belong to the genus Heteronereis, the species H. longissima; the habitat, according to Johnson, being the coast of Ireland. Finding them to be so very uncommom, a few were sent to the British Museum, and the Natural History authorities there confirmed the preceding view. Their visit to Plymouth was of a very transient character, as they have now entirely disappeared, and it is this fact that induces me to draw attention to the subject, as it is not impossible that similar visits may have been paid by them to other parts of the coast without exciting attention. Their sudden disappearance is to me less extraordinary than their sudden appearance, for, although there must have been millions of them, yet they evidently formed dainty morsels for the pollack, which pursued them with great avidity. I tried them myself as bait, and caught pollack with them within a few moments of casting the line over the side of the boat. It is worthy of remark also that pollack within the last month have been unusually abundant in Plymouth Sound, as many as ten to fifteen dozen being occasionally taken by amateurs before breakfast with the ordinary pollack-flies and the silver spinner. On a calm evening the surface of the sea, in the vicinity of the breakwater, would be literally alive with pollack pursuing these Annelides, which were seen scudding about in all directions. Their length varies from four to sixteen inches, and the appearance of those which I have in my possession is not unlike that of a large Nereis, or mud-worm, divided transversely into two distinct portions, the anterior half, constituting the body, being more in shape like a flattened caterpillar, and of a pale delicate flesh-colour, whilst the posterior, forming the tail, is of a bright red, and almost identical in shape with that of the Nereis. A longitudinal indentation extends the entire length of the creature, both above and below. When swimming its branchiæ give to its sides a very curiously serrated appearance. Its motion is very rapid and serpentine, the undulation being generally lateral, but some that I preserved for several days alive moved also with vertical undulations like a leech. They are furnished with strong forceps, with which they can puncture the skin of the fingers, producing some amount of temporary irritation. On immersing the hand, or the point of a stick, in the water near them, they immediately rushed towards it, and quickly began to examine its character, from which circumstance they were easily captured in large quantities. The voracity with which they attacked a piece of meat thrown in amongst them was very remarkable. Their chief places of resort were the vicinity of rocks and quays, where they were seen in myriads swimming on the surface of the water. They appeared to feed among the Algæ growing there, and could be seen as the tide receded clinging by their forceps to the Algæ, and hanging down like so many leeches. I found them, however, in great numbers more than 100 yards distant from the rocks, probably driven about by the pollack. How they were introduced here opens a curious field of inquiry. So far as I can learn they were first observed in the immediate vicinity of the pontoon used by the Irish steamers, but I cannot see my way clear to assume the possibility either that any quantity of these creatures would have accompanied a steamer so far, or that their spawn could have been brought here in quantities sufficient to have produced suddenly such an extensive colony. Moreover, the Irish steamers have frequented that pontoon for a great number of years, and therefore might

have been as likely to have imported them at an earlier period as now. There can be very little doubt, however, that this is their first visit to this locality, since I have not only never met with them myself, but have failed, with the most searching inquiries amongst the watermen and fishermen, who almost live upon the rocks and about the quays, to find any one who has. I have been thus particular in the description of the creature, as it is quite possible that some of your readers may have observed them in other localities without being aware that there was anything uncommon in the fact. Should they have done so, the communication of the result of their observations will throw additional light on the natural history of these curious Annelides.—*Jonathan N. Hearder; 28, Buckwell Street, Plymouth, May 20, 1865.—From 'The Field.'*

Notes on Devon Annelids. By Edward Parfitt, Esq.

I have lately been favoured by Mr. D'Orville with a sight of a volume of manuscript and drawings, by Colonel Montagu, on the Annelids, &c., to use as I thought proper, for the work I am engaged upon, namely 'A Catalogue Fauna and Flora of Devonshire,' with notes and observations not before published, so far as I am aware, by other observers. In so doing, I am sorry to say, I am relying mostly on my own resources, particularly as regards the lower forms of life, both vegetable and animal; but, as I proceed upwards in the scale, I hope to have a few reliable assistants, but these only, so far as I am now aware, will be principally confined to the birds and Lepidoptera; but still I hope, as did Mr. Macawber, that others "will turn up."

Colonel Montagu, just previous to his death, had prepared in manuscript a volume, nearly ready for publication, on the various Annelids and other allied forms he had detected on the coast of Devon and surrounding seas; many of these do not appear to have ever been published, or the specimens preserved, instead of which he had, in most cases, drawn up careful specific descriptions of the species and varieties. Some of these descriptions are exceedingly brief; indeed, too much so to refer them to their proper places in the now-adopted systems; but in other cases the descriptions are full and the animals can, and I hope are, referred to their proper localities.

I have adopted the nomenclature and arrangement of Dr. Johnston's 'Catalogue,' edited by Dr. Baird. By publishing these, I hope it may lead to a further investigation of these curious and interesting creatures; and at the same time it is only due to the name of Colonel Montagu to give him the credit of first investigating the animals now under consideration: I consequently give his MS. names, where such do not occur in the genus to which they are respectively referred. It must be understood that this is not an entire Devonshire list, but only those

undescribed, or manuscript species, or any curious varieties; the entire list is reserved for my own work.

Fam. I. Planoceridæ.

Genus Leptoplana, Ehrenberg.

L. tremellaris, Mull., Tyrol. Dan. South coast of Devon. *Var. a.*—Dusky brown; in other respects the same as the type.

L. atomata, Müll. Taken by dredging on the south coast, and under stones on the north coast. This varies from reddish brown to pale yellowish.

Genus Eurylepta, Ehrenb.

E. vittata, Montagu, Lin. Trans. xi. t. 5, f. 5. Amongst rocks on the south coast; rather rare. *Var. a.*—With central line deep orange and the yellow parts in general more inclining to orange. *Var. b.*—Without any yellow, the ground white, with the usual black markings.

Genus Planaria, Müller.

P. vulgaris, Montagu, MSS. p. 230—31, t. 30, f. 7. Brown, the front auricled, with numerous minute black punctures round the margin of the head and neck. Body oblong, slightly contracted behind the head, posterior end obtuse, a dusky line running down the back; the dots on the anterior margin extend to behind the ears in a single line, seen but when the creature is in motion. It is an extremely variable species as regards colour, varying from brown to dusky gray, rufous-brown and yellowish; in some very much like P. fusca (*torva*, Müll.), but the marginal punctures and the want of two approximate eyes on the back of the head distinguish it from that species. A common species in some parts of Devon in spring, in slow streams.

Fam. III. Dalzellidæ.

Genus Dalzellia, Fleming.

D. bipunctata, Mont. MSS. p. 235. Oblong, white, with two black dots at the anterior end. Body rounded in front, acuminated behind, the two black dots are probably eyes? Length a quarter of an inch; the motion is rapid and smooth. Coast of Devon.

Genus Convoluta, Oersted.

C. elongata, Mont. MSS. p. 231 (Planaria). Body depressed, white, opaque; eyes none. Extremely amorphous, capable of great extension, and becoming nearly cylindrical when extended to between two

and three inches in length; in this state it is not more than the eighth of an inch in diameter; when at rest it is about five or six lines. South coast of Devon; rare.

C. ascarides, Mont. MSS. p. 231. Body long, linear, white, with a square black spot close to the anterior end. Length one inch. Coast of Devon. I have placed this here provisionally, as Colonel Montagu had not made a sketch of it, and his description is too brief to recognize the genus to which it belongs; it is placed by him in section "eyes none." This notice may perhaps draw the [attention of] naturalists to it again.

Sub-Order II. Teretularia, Blainville.

Genus Astemma, Oersted.

A. filiformis, Johnst. (*P. Gordius*, Mont. MSS. p. 231). Long, filiform, yellowish with two white spots at the anterior end, and a white dorsal line. Length an inch, size of a bristle. He then goes on to say that "From the proportional length of this species it is somewhat allied to P. Gordius, but it is rather compressed, and its motion is smooth without contortion; from this we seem to think it belongs to Planaria. It is observed sometimes to inflate its body in the middle, which it gradually pushes forward towards the anterior end." A variety sometimes occurs, of a pale rufous-colour, having a broad white dorsal line. A very long white filiform tongue or proboscis is occasionally darted out with great velocity and retracted very slowly." South coast of Devon.

In uniting A. filiformis with Montagu's P. Gordius I am not quite sure that I am right; these creatures undergo so many changes of form that different observers might be led to arrive at different conclusions.

Genus Cephalotrix, Oersted.

C. unipunctata, Mont. MSS. t. 55, f. 5, p. 236 (Planaria unipunctata). Pale yellowish white, with a lunate black spot before the eyes, the concave part of the luna in front. Body filiform, gradually growing thicker towards the head; eyes black and rather distant. Length nearly an inch. Marine, Torcross; rare. This appears to be a very distinct species.

Genus Omatoplea, Diesing.

O. oculatus, Mont. MSS. p. 274 (Lineus oculatus). Body subdepressed, brown with pale margins, and furnished with twelve eyes. The colour is usually pale yellowish brown, with light margin; round

the anterior end the white is much broader and more conspicuous. Just at the edge of the dark part are placed the six black spots on each side, apparently eyes; five of these are contiguous and equidistant, the two anterior are more remote. It is capable of considerable change of form, both laterally and longitudinally; the posterior is rather smaller than the anterior, but not pointed. Length from two to three inches, and about a line broad. *Var.?*—With the eyes more confluent, except the hindmost pair, which are distant, and with a faint pale dorsal line. Devon coast; rare.

O. spiralis, Mont. MSS. p. 274 (Lineus spiralis). Filiform, with a red spiral intestine; the outer integument having the appearance of minute annulations, probably transverse striæ. Body occasionally depressed, the posterior end often knotted or formed into knobs. Length two or three inches, not thicker than a horse-hair. Devon coast; rare.

EDWARD PARFITT.

Devon and Exeter Institution, Exeter,
May 4, 1865.

(To be continued.)

Poisonous Effect of a Cephalopod.—John H—— met with a sad accident yesterday: he was bathing early in the morning, when a Portuguese man-of-war wound its long thongs completely round his body, which instantly benumbed him, and he would have been drowned had not a companion who was with him pulled him out; but it was not until past noon that they had hope of his recovery: his flesh was then twitching frightfully, and his body was covered with weals the size of one's finger, as if he had been beaten by thick cords.—*From a private letter, dated "St. Vincent, Christmas Eve."* [Communicated by Professor Bell, of Selborne.]

Life-Histories of Sawflies. Translated from the Dutch of M. Snellen van Vollenhoven, by J. W. MAY, Esq.

(Continued from page 9553).

LOPHYRUS RUFUS, *Klug.*

Hartig, Blatt-und Holzwespen, p. 164, No. 11. *De Geer, Mémoires pour servir à l'Hist. des Ins.* Vol. ii. Div. 2, p. 254 (Goeze's translation), pl. 35, fig. 24—26. *Ratzeburg, Forstinsecten*, Vol. iii. p. 109, pl. II. fig. 7. *Le Peletier de St. Fargeau, Monogr. Tenthred.* p. 56, No. 160 (Lophyrus Piceæ).

Lophyrus corpore elongato in mare nigro, nitido, ventris apice, pedibusque rufescentibus, antennis 23-articulatis; corpore in femina crassiore rufo, antennis medio et apice necnon abdominis dorso fuscescentibus.

On the 8th of June, 1859, I received from my friend Mr. E. A. de Roo van Westmaas some Lophyrus larvæ, which had been found at Velp on the common fir (*Pinus sylvestris*). The following description was written at the time:—Length of the larva from 20 to 24 millimetres; head entirely shining pitchy black; the first segment at the neck reddish white; of this colour were also a line along the back and another on either side of the body above the legs, as also the abdominal and anal legs and the ventral surface. Between these obscure white lines the tint is reddish dark gray, close to the lines the colour is darker, that bordering the lines on the sides being almost black. Below these lateral lines and above the legs the tint again becomes dark gray: the last segment is very dark on the back, approaching black, without, or with only obscure, markings, and beset with little spines. There were twenty-two legs in all, the six thoracic legs being shining black, with the depressions of the joints pale gray (see figs. 1 and 2). Each segment of the body is divided into five folds, which are of unequal width (fig. 3); on the first, third and fifth are some spinose points, as also on the transverse folds above the legs; the stigmata are black.

These larvæ were extremely slow in their movements, and remained the whole day in nearly the same position; they appeared to me to feed only during the night. At first I fed them on leaves of Pinus sylvestris, but as I found it difficult to supply them with that food I gave them leaves of the Weymouth pine (*Pinus strobus*), which they ate readily; Ratzeburg also states that they eat other species of pine. After the last moult they were of an uniform pale gray without longitudinal marks, the head being dark gray as far as the eyes, pale gray further on. They pupized very soon after having assumed this appearance, and for this purpose made cocoons of a silver-white colour, among the leaves, as shown at fig. 4, somewhat magnified.

On the 9th of June of the following year I received from my friend Dr. Wttewaal a whole box full of similar larvæ; these were, however, somewhat differently and darker coloured; they were also much more lively, striking out both head and tail on being touched. The following description will apply to the greater number of these larvæ:—Head entirely shining black, as if varnished; a line along the back and

another along the sides, above the stigmata, greenish pale gray; between these a broader gray line, little spines on the folds, as in fig. 3, giving the gray a striped appearance. Next to the pale line on the side is an equally narrow black one, then a row of pale gray knobs almost touching each other, and below these, just above the legs, a row of larger black projecting knobs. The thoracic legs were again black ringed with white, the abdominal legs greenish gray, mostly with two black spinose transverse lines; the anterior segment entirely greenish gray at the sides, the last entirely black and strongly spinose. The ventral surface greenish gray. Figures 5, 6 and 7 are drawn from these larvæ; fig. 5 represents three of the middle segments of the body, in profile, and fig. 6 the last two segments seen on the dorsum.

The longest of these larvæ were scarcely more than one centimetre in length; they frequently assumed a very singular posture, curling the terminal segments round a twig, and, projecting the body at right angles thereto, they bent the head and fore part of the body back against the dorsum, the thoracic legs being extended, thus putting themselves in the remarkable attitude which I have endeavoured to represent at fig. 7.

These larvæ were also entirely pale gray after the last moult, and spun up among the leaves. Among the cocoons I observed but very few pure white ones; the greatest number had a yellow or ferruginous tint, some were even entirely obscure yellow. From all these characteristics I came to the conclusion that this latter brood was healthier and stronger than the former. From both broods the imagos made their appearance in September, being three months after spinning up.

The male of this species is represented at fig. 8; it is only 7 millimetres long without the antennæ, slender, with a very wide head, entirely shining black and smooth, the exceptions being, as regards the tint, the antennæ, the legs and the ventral surface, which are pale red. The antennæ, which are very long, have twenty-five joints (Hartig says twenty-three to twenty-five), and are pectinated on both sides, but the pectinations on the outside are longer than those on the inside, more especially towards the base, where they are twice as long; see fig. 10 representing the outside pectinations, and fig. 11 representing those on the inside. The ventral surface is, for the most part, reddish, but black at the end near the valve of the penis; the claws are rufous, the pad between them being black. The wings are transparent and iridescent, the costa and stigma pale brown, the post-costal and externo-medial nervures dark brown, the other nervures grayish.

The female, represented at fig. 9, is longer and broader, expanding

to 17 millimetres. The ground colour is yellowish red; the eyes and ocelli, the antennæ (except the first two joints) and the apex of the jaws are brown. On the mesothorax there are two black lines at the sides behind the insertion of the anterior wings; the margin of the scutellum is also black; the metathorax is brown, with yellow cenchri. The entire thorax is, moreover, particularly smooth on the dorsal surface. The abdomen is purple or vinous-red at the base, becoming yellowish red past the middle; the ventral surface is greenish yellow. The legs are red, sometimes, though rarely, with brown lines, more especially on the coxæ; the claws are rufous, the pads lying between them black. The wings are more or less smoke-coloured, the nervures being of the same tints as in the male, except the costa and stigma, which are pale red.

Hartig is our only authority respecting the generation of this species; he states that there is probably but one brood in the year, the larvæ feeding in May and June, the imagos appearing in August, September and October. We must then suppose the eggs laid by these latter to remain during the winter, whilst some larvæ hybernate in the cocoon, producing the imago in the spring. We are not aware whether this insect has caused any great damage to the fir trees in this country.

According to Hartig, Tachina bimaculata and T. gilva, as also Paniscus oblongopunctatus, *Hart.* (as yet undescribed) are parasitic on this species.

Collecting in New Granada. By Henry Birchall, Esq.*

June 17, 1863. I have secured for you a specimen of a lovely little Geometra with gilded or silvered wings, which strikes me as one of the most curious things I have yet sent you: it is only the second that has been seen here. I have not tried sugaring much: we have no places like those trees on the shores of Loch Rannoch; neither have we oatcake or fragrant heather. Last night I took in my sitting-room the most curious insect, in its way, I have ever seen in this country: a Noctua of sober dark plumage, but with its fore legs developed into great muffs, to keep them warm perhaps, and with a wonderful moveable helmet or solid crest turned back over its head. If this is not a prize I had better go out of the business, for there is no hope of finding greater curiosities. It rather encourages me to nocturnal persecution to have obtained this fellow, and you shall soon hear what comes of it. But I do not suppose that even you would do much

* Communicated by Mr. Edwin Birchall.

sugaring if Mr. Smith O'Brien, with sufficient forces, were now encamped about five miles from your house, and the Duke of Cambridge was marching down from Chester to attack him with equal numbers: this is about our present position, and we take it so coolly that it is only once a day we say "What are these fellows doing by this time?" Now if this Noctua turns out common and worthless I shall be disgusted, and I protest beforehand against your reporting it a "common but handsome insect." Pray how would Darwin account for that moth getting a helmet, and a muff for his fore paws? it is not cold here; or does he go at night "caterwauling" to Ruiz, whose snows are visible hence. Or what advantage to self and family is the gold tracery on the wings of the little Geometra in the pill-box, that he should obtain the hereditary establishment thereof in his descendants? Has the vicinity of our silver mine anything to do with it? or did the caterpillar feed on pyrites, with occasional nibbles of native silver?

June 20. I find mental anxiety and cares of business discourage me from Entomology. This arises a good deal from the want of companionship. Then it is so troublesome; one has to work in a narrow road, or on rocks by a stream, tying up one's beast meanwhile out of the way. I wish you could join me in a month's raid against the enemy; I am very weary for want of society in this place. Entomology requires company to be quite to my taste, and you catch more, I think. If I could only fall heart and soul into this hobby, to some extent, it would do me a power of good in keeping me more contented. Having to dispatch a parcel to-morrow, and yesterday being the feast of Corpus Christi, a strict holiday at the Mine, I resolved on an effort in your favour, and pressed O'Reilly and Keanan into the service. We spent the morning about the Mine, which is, so far as yet discovered, the best locality. You will see the result: one hundred and twenty specimens, which, in order to distinguish them, are put up in envelopes, and go in a small cedar box separate. The day turned out badly; a hot sun was accompanied by much wind, and somehow the number of insects on the wing was small. The quality may make amends perhaps, for we got several new species—that is, new *here:* Protogonius Hippona, Catagramma Opelii, C. Bromi (two or three specimens); a new Leptalis? and, moreover, a fellow so like Papilio Zagreus that I am disgusted: he is put up in the store-box, as his fat body would spoil in paper. Look at him; he certainly is what the Chancery wigs would call "a colourable imitation" of P. Zagreus.*

* The insect is an unnamed Castnia, wonderfully simulating Papilio Zagreus in marks and colouring.—*E. B.*

June 25. I went out collecting again yesterday, but not to much profit; common sorts mostly. In one sweep of the net I got thirty or forty Callidryas Argente, and could have taken two hundred easily: it is a sight when your net is full of these great fluttering fellows. I got a lot of very fine Ituna Lamyra, which you say are wanted: it is rather abundant at the Mines, and seems to be attracted by human excrement. Timeta Chiron and T. Berania were in thousands, but difficult to capture, flying with great swiftness. I also captured a pair of Heliconia Eleuchia. Why does it take so much to kill a Heliconia or any of the larger clear-winged sorts? They stand no end of pinching, and live for days in the envelopes to which I consign them. Collecting is ticklish work in the best places: the villains know their game, and flutter about a tempting bank, safe in the fact that if you strike, your net will be caught by a lurking bamboo, whose thorns with that one blow will tear your net to ribbons past all repair, without an evening's darning. One has to be very cautious about this, as a single slap into one of the thousand thorn-bearing abominations does your business for that day effectually; and then all our roads through the woods are muddy, or on the edge of horrible precipices, where a false step sends you to Pluto's dark domain, and where, as happened to me a few days since, a vigorous stroke separates stick from socket, and your net flies down fifty feet of ravine, to get down which is impossible, and recovery only possible by sending a man into the river below to clamber up the perpendicular wall of clay, thorns and tangle to the temporary lodging of your net.

October 14. I cannot learn the habits of the lantern fly yet, but doubt his luminosity much, as nobody here has seen his lamp. You shall have nests of spiders; they are abundant.

The Morphos are attracted with sugar, and I purpose a grand experiment of this kind. To catch Morphos on the wing requires a quick eye and hand, but it is very difficult. Some of them are not quite so quick, and float along, or flit rather, and their grand colours give you a good sight of them.

The Caligos, C. Ajax, C. Idomeneus, C. Telamon, &c., differ in their habits. They fly at dusk, and settle every moment on tree-trunks, where you may take them with the hand sometimes. C. Ajax himself I have not so caught, but C. Idomeneus is found everywhere below in the cold country.

Catagrammas of several species are numerous about the mines of Sant Ana, especially C. Marshalii, which we call "89," from the figures on the under side, but they are all hard to catch; they flit like

sudden small lightnings: if they alight you may secure them, but on the wing they dart so rapidly that it is difficult indeed.

The Paphias being mostly dark coloured, it is not easy to follow them, but they alight frequently, and so fall victims if you are patient. I find these Paphias confine themselves to one place: I have tried after one for an hour and given it up, and gone, a day or two after, to the same spot and bagged it: this has happened repeatedly.

The Mygales are found on the ground or on trees; they make no web, and are indifferent to day or night apparently. The way to avoid them is to go everywhere on horseback, and to wear boots when on foot. They live, as you know, on small birds and mice. Cattle are not unfrequently lost from their bite, and it is highly dangerous to go out at night where they reside in any abundance.

Do you care for Neuroptera? I send you one like a dragonfly with butterfly antennæ. [Ascalaphus.]

HENRY BIRCHALL.

Proceedings of Societies.

ENTOMOLOGICAL SOCIETY.

June 5, 1865.—F. P. PASCOE, Esq., President, in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' No. 72; presented by the Society. 'Transactions of the Zoological Society,' Vol. v. Part 4; 'Proceedings of the Zoological Society,' 1864, Parts 1—3; by the Society. 'Annales de la Société Entomologique de France,' 4me Serie, Tome iii., Tome iv. Trim. 1—3; by the Society. 'Essai Monographique sur le Bombus montanus et ses Variétés,' par Dr. Sichel; by the Author. 'A Letter to the Trustees of the British Museum on the Condition of the National Collection of Invertebrata: by Philocosmos;' by the Author. 'The Zoologist' for June; by the Editor. 'The Entomologist's Monthly Magazine' for June; by the Editors.

The following addition by purchase was also announced:—'Genera des Coléoptères d'Europe,' Livraisons 124—127.

Election of Members.

Lieut. R. C. Beavan, Messrs. W. Borrer, G. R. Crotch, W. S. Dallas and T. G. Rylands were severally ballotted for, and elected Members. Messrs. T. Brunton, B. Cooke and R. J. Ransome were severally ballotted for, and elected Annual Subscribers.

Exhibitions, &c.

The Rev. Hamlet Clark exhibited, and distributed amongst the Members, specimens of a beetle from British Kaffraria, which appeared to be an entirely new form of

Parnides. The captor, Mr. J. H. Bowker, of the Mounted Frontier Police, sent the following note respecting them:—"Water beetles, very like Spanish flies, very numerous in the Sunn (?) River: their habits are curious; whirling on a sunny day over the edge of the fall; they then make a sudden dive through the fallen water, and fasten to the face of the rock; they resemble in this way a flock of sea-birds when feeding. I never saw them at any other spot." Mr. Clark stated that the insect approached most nearly to Macronychus, *Müller* (*Illig. Mag.*), a genus of Elmidæ, but differed therefrom in the form of the head, the number of joints of the antennæ, &c.; its strong and broad claws and elongated robust legs would serve admirably to secure the beetle to the face of a rock, but it was not very evident how its legs were adapted for swimming.

The Rev. H. Clark read extracts from a letter recently received from Mr. Edwyn Reed from Bahia; want of knowledge of the language had prevented Mr. Reed from going up the country as soon as he had desired; he was proposing to spend May in Valença, and about June to proceed into the interior to the residence of a hospitable timber-merchant on the borders of the primæval forest. His first collection of objects of Natural History might very shortly be expected in London.

Mr. Janson read a letter from Mr. J. A. Brewer, dated Fayal, April 24, 1865, reporting the capture of about 150 species of Coleoptera at St. Michael's, by working as in England in winter; there were no insects moving about, it being still (though very warm) the winter of the Azores; many of those captured were apparently well-known British species, whilst others were unknown to the writer; the majority consisted of Carabidæ and Staphylinidæ, with some Curculionidæ and a few Elateridæ.

Mr. F. Smith exhibited a specimen of Apate capucinus, taken by his son Mr. Edgar Smith, in Bishop's Wood, on the 28th of April last, running over fallen timber (oak); he was not aware of the occurrence of the beetle in this country for some years, though Mr. Hope had formerly on one occasion captured half a dozen in Longmynd (or Longmont) Forest, Shropshire.

Prof. Westwood mentioned that Sir Thomas Pasley had formerly sent him a number of specimens from Pembroke Dockyard, where they were found burrowing in the oak timber.

Mr. Bond exhibited the specimen of Dianthœcia albimacula, the capture of which, on the 8th of June, 1864, near Gosport, is recorded in 'The Entomologist's Monthly Magazine,' vol. i. pp. 237, 282.

Mr. Bond also exhibited a Saturnia Polyphemus and its cocoon, and a large Ophion which had emerged from the same cocoon.

Mr. Stainton exhibited some galls on the leaves of an evergreen oak (probably Quercus Ilex), brought by Mr. Burney from Mentone.

The President exhibited a Dorcadion, probably a new species, which he had captured a month previously at Alicante.

Prof. Westwood mentioned that in the Burchell Collection, recently added to the Oxford Museum, were specimens of larvæ preserved in a dry state by a means capable of easy adoption; the larvæ were simply placed under heavy weights, so as to squeeze out all the intestinal matter, and then dried rapidly; the shape was of course lost, the skins being as flat as the paper on which they were exhibited, but the colours were admirably preserved.

Mr. F. Smith exhibited various Bombi, in illustration of some criticisms upon Dr. Sichel's 'Essai Monographique sur le Bombus montanus et ses Variétés,' and

expressed his dissent from the conclusion of the author, that the numerous forms of Bombus therein mentioned were not true species, but merely varieties of the B. montanus of St. Fargeau.

Prof. Westwood directed attention to an article in 'The Gardener's Chronicle' of the 3rd of June, 1865, by Mr. W. Carr, of Clayton Bridge Apiary, Newton Hall, Manchester, in which the writer gives a detailed account of his observations, showing that workers of the Ligurian bee produced perfectly developed males or drones, corroborating Mr. Stone's experience as to the occasional prolificness of worker wasps. The Professor also took occasion to remark upon the abundance of queen wasps during the present year, notwithstanding the disease and destruction of the previous autumn, as mentioned by Mr. Stone (Proceedings, January, 1865).

The Treasurer produced an extract from the 'Pall Mall Gazette' of the 31st of May, which stated that an exhibition of insects was about to be held in Paris.* The exhibition was to be divided into two categories; the first to include (1) the producers of silk, (2) the producers of honey and wax, (3) the insects used in dyeing, (4) insects used for the table, and (5) insects used in medicine. The second category was to consist of all the insects that prove destructive to cereals, vineyards, orchards, forests and woods used for building purposes.

The President said that amongst the insects used for the table might be included the larva of a Macrotoma, which, under the name of "Bardé," was (as he was informed by Mr. Du Boulay) considered quite a luxury in the Swan River district of Australia. The larva in question had been erroneously attributed by Mr. Newman to a different insect, which he had named Bardistus cidarius.

The Rev. H. Clark mentioned that, in company with Mr. Grut, he had been present at a meeting convened by Lord Granville for the purpose of considering the destination of some of the Exhibition Buildings at South Kensington, and was glad to find the existence amongst those present of a very general feeling that more Museums were required in London. He advocated the formation of district Museums in different parts of the metropolis.

Prof. Westwood also spoke in favour of the establishment of more Museums, and remarked that there were buildings in the metropolis suitable for, or capable of easy adaptation to, such purposes, *e.g.* the building in the Surrey Gardens, only temporarily occupied.

Mr. Grut said that a Committee had been formed to promote the institution of a Museum of South London.

Mr. Edward Sheppard thought that, speaking with reference to Entomology, one good central collection was all that should be aimed at in the metropolis; that more harm than good would be done by forming a number of petty collections; and that the experience of this and other Societies in attempting to form collections should be borne in mind.

The President advocated the formation of small collections of typical forms for educational purposes.

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* The exhibition is announced to open on the 15th of August, and will be held in the Palais de l'Industrie, under the auspices of the Central Society of Agriculture, the Minister of Agriculture and Public Works being the President of the Committee of Organization.

Papers read.

The Rev. H. Clark read the concluding part of his "Descriptions of new Phytophaga from Western Australia;" including twelve species of Paropsis, four of Edusa, and one each of Thaumastomerus (*n. g.*) and Ocnus (*n. g.*).

Mr. F. Moore read a paper entitled "Descriptions of new Bombyces from North-Eastern India." The species were four in number, *viz.* Bombyx Sherwilli, allied to B. Huttoni; Saturnia Cidosa, closely allied to S. Pyretorum; S. Lindia, allied to S. Grotei; and Loepa Miranda; specimens of all of which were exhibited.—*J. W. D.*

Notes on the Mammalia of Norfolk. By T. E. Gunn.

Stoat.—A magnificent old male was killed on the 25th of February last at Hickling, and is now in my possession: I think it is one of the finest specimens I have ever seen, its weight being eleven ounces and a half in full; it measured seventeen inches in length: the average weight of ordinary examples is from seven to nine ounces, varying according to sex, the males, as in all species of Mustelidæ, being the largest.

Otter.—On the banks of our streams and in the neighbourhood of our broads, the otter is not of unfrequent occurrence, examples being obtained at all seasons of the year, more especially during the sharp and frosty winters, when, owing to the rivers, &c., being frozen, it is compelled to seek for means of sustenance on the land, where it carries on its depredations, sometimes to a great extent, particularly in vegetable gardens that are situated in the vicinity of the various watering-places, in which they abound. The otter having exhausted all its supply of fish from its usual haunts, and finding no suitable locality in the neighbourhood for another fishing-station, will traverse a considerable distance in search of that requirement, which will account for their sometimes being found in rather strange and unusual localities. I recollect an individual being obtained at night in one of the streets of Yarmouth, about two years since, having, in all probability, left its former fishing-station in search of one more favourable, or perhaps with the intention of enjoying an excursion out to sea, to which it appeared to be taking a direct course in its nocturnal journey across the town; by the way, however, its attention seems to have been attracted by the glare of a gas-lamp, near to which it was taken alive, but owing to the injuries the poor animal received at the time of its capture it died after two or three days' confinement. A friend has lately informed me of the occurrence of a magnificent old male of this

species on the broad at Ranworth, a few years since, its weight being twenty-eight pounds. The following instances of the occurrence of the otter in this county I have noticed this season :—

December 1, 1864. A male on Fritton Broad, near Great Yarmouth.

December 17. A second male, at East Ruston, weighing eighteen pounds and a half, and measuring four feet two inches in length, tail included.

December 23. A male, killed on the River Waveney, near Bungay; weight upwards of twenty pounds.

February, 1865. During the latter part of this month two females were taken in the vicinity of Burgh St. Peter's, near Yarmouth. Mr. J. Knight, birdstuffer, had also brought him, about the same time, two very young ones, apparently not more than five or six days old.

Mole.—The creamcoloured variety of this species is not unusual in Norfolk; a few examples are taken each season; four individuals were obtained in the vicinity of Stalham Hall, on the 28th of February, 1863. In examining a bundle of mole-skins from one of the catchers' hands, who had obtained them at Bixley, near Norwich, during the middle of last February, I observed one individual with the entire surface of its coat of a uniform light umber-brown.

Brown Rat.—During the winter seasons of 1858 and 1859 three or four pale buff-coloured varieties of this abundant and destructive species were killed by a gamekeeper named Butler, on the Blickling estate near Aylsham; they were preserved, and two of them I have lately seen in the possession of an acquaintance of mine. The piebald variety is not unusual in this county; I have at various times met with several examples more or less marked with patches of white. A nicely marked individual of this variety was caught alive in the vicinity of Earlham, a village two miles distant from Norwich, two or three years since, and, from its being confined some little time, had become pretty tame and domesticated; by an accident, however, it met with an untimely end. A splendid white specimen was obtained in the neighbourhood of Barford in 1861. A most curious and somewhat extraordinary individual of this species was killed by a ratcatcher named Sayer, in the winter of 1861-62, on Mr. Tuck's estate at Strumpshaw, which is distant about eight miles north-east from Norwich: from the outward appearance of the skin of the animal many observers were of opinion that it was undoubtedly labouring under some peculiar disease: it appeared wholly destitute of its hairy covering, with the exception of its whiskers and a few hairs thinly scattered over the surface of its face; its skin was covered with small

lumps, and of a dirty white hue, approaching that of a dull pinkish tint in some parts: it appeared of unusual thickness, and fitted rather loosely, causing some portions to overlap; I noticed this peculiarity more particularly over its face and neck and around its shoulders and flanks. About the time of the above occurrence other individuals of a similar description were stated by the rat-catcher to have been seen in the same neighbourhood, none of which, however, to the best of my knowledge, appear to have been captured. The above-mentioned specimen, as I understand from the birdstuffer into whose hands it fell, was exhibited at the 'Field' office in London during the month of February and the early part of March, 1862. It is now in the possession of Mr. J. J. Gurney, of Earlham Hall, near Norwich.

Common Mouse.—I have seen black, brown, piebald and white varieties of this common species; individuals of the two former and the last named were captured altogether in the vicinity of Horsford in 1861. An old acquaintance of mine residing in this city, just five years since, had at that time in his possession a pair of white mice, the female of which produced at one birth five young ones of three various hues, *viz.* two resembled their parents, two of a pale brown, and the fifth of the ordinary hue of the common mouse. I have seen several pied varieties, but very few of the black, which is, I believe, rarely met with.

Common Hare.—A very fine gray variety of the common hare was killed, on the 16th of December, 1864, by Mr. T. Calver, on his farm at Burnham Thorpe, near Wells; two similar examples occurred on the adjoining estate of Mr. John Overman, in the season of 1860, which Mr. Overman succeeded in obtaining possession of, and still holds them, he having had them preserved by one of our bird-stuffers. A nice variety was killed at Rackheath in 1863, its coat being of a pure white, with the exception of its ears, which retained their ordinary colour; patches of the same also encircled its eyes, and a blotch likewise appeared conspicuously in the centre of its forehead.

Common Rabbit.—I have had the pleasure of observing several nice varieties of the common rabbit: the black is not unusual; the last instance of its occurrence in Norfolk that came under my notice was that of a specimen killed at Stanfield, near Wymondham, in November, 1864. A nice example was taken near Cranmer Hall, on the 20th of November, 1862, its entire coat being of a uniform reddish brown; its eyes were of the same hue. My friend, Mr. John Cooke shot at Hathersett, in 1861, a white variety marked with patches of its usual hue on its nose and ears; a small blotch of a rufous tinge also showed

itself just behind the latter; a narrow grayish brown streak likewise appeared down the entire centre of its back. A second individual similar to this latter was killed on the Rackheath estate, about a month previous to the occurrence of the variety of the common hare that is recorded above from the same locality.

T. E. Gunn.

Norwich, May, 1865.

Notes on Quadrupeds of Lanarkshire.
By Edward R. Alston, Esq.

Stoat or Ermine.—This is our commonest weasel, being decidedly more plentiful than the little Mustela vulgaris, while the polecat or foumart appears now to be quite extinct in the neighbourhood. The change of colour in this animal seems to be influenced by a very slight difference of temperature, for the white specimens which are taken here in winter are almost invariably killed on the moors and exposed ground, while those caught in the glens and sheltered plantations are all more or less mottled with brown. I have taken some trouble to place this fact beyond doubt, and have kept notes on it for three or four winters. Some change more readily than others; two were trapped at the same hole this winter, one of which was almost perfectly white, while the other was about "half and half." The nape of the neck, about the nose, and a patch on the shoulders, seem to be the last parts to lose the summer hue: in some specimens the longer hairs are the first to change, in others the inner fur. Some skins have a strong yellowish tint, especially about the fore quarters; this remains even after all the brown has disappeared, whereas others are beautifully pure in tint, although retaining large patches of the darker colour.

Habits of the Weasel Tribe.—These animals are popularly supposed to kill their prey by sucking the blood from one of the principal arteries, or by penetrating the spinal chord at a single bite. Mr. S. Woodcock, of Bury, Lancashire, opposed this opinion in a most interesting letter in 'The Field,' of the 27th of December, 1862, and my own observations tend to confirm his views. In the case of large animals, as rabbits and leverets, the mode of attack is by *worrying* and *tugging* at the skin of the head and neck, the assailant frequently changing his gripe, and not retaining his first hold as has been stated; and death seems to be caused more by "exhaustion and the shock to

the nervous system," as Mr. Woodcock phrases it, than by any directly mortal wound. It would appear, however, from Professor Bell's observations, that the weasel kills small animals, such as mice, by a single bite through the brain ('British Quadrupeds,' p. 143). When a rabbit has been killed the first part eaten is usually the neck, not the brain, as often stated, and I have seen a weasel *lap* up the blood as it flowed from a dead rabbit, although I am not aware that there is any evidence of their *sucking* the wound. After the neck is eaten the body is generally dragged away to the den of the destroyer. Ferrets often tear out the eyes first, and I believe that this is also a practice of our native weasels. In pursuit of their victims these animals often hunt by scent, and I have known a stoat to swim across a small river and then "cast" up and down the opposite bank to recover the trail. The bewilderment which seems to seize animals pursued by weasels is probably the effect of terror and despair, the poor beast knowing by instinct that neither by swiftness of foot nor in the depths of its burrow can it hope to elude the untiring pertinacity of its enemy. In suitable places stoats and weasels seem to be gregarious to a certain extent, and the stories one so often hears of men being attacked by troops of those savage little creatures have probably some foundation in fact, although doubtless generally exaggerated.

Squirrel.—Our favourites, mentioned in a former notice (Zool. 9481), have deserted their feeding-ground since February. I hoped to have been able to have settled the question of their removing their young from nest to nest by actual experiment this spring, but have not been successful in searching for a brood. In April, however, I found *three* nests within about fifty yards of one another, and *two* in another wood also close together; and in each instance an old squirrel bolted from one of the group, while the others were empty. I was much pleased to see Tschudi's statement as to the squirrel digging up truffles corroborated by so eminent a naturalist as Mr. Newton (Zool. 9560). The woods here are now thickly strewn with the remains of their feasts on fir-cones, particularly round the stumps of felled trees, which would seem to serve them as dining-tables.

EDWARD R. ALSTON.

Stockbriggs, Lesmahagow, June 16, 1865.

Breeding of the Squirrel.—On the 26th of April I saw four young squirrels which had been recently taken from the nest: they were about three-fourths the size of the old one. I fancy that this is rather early breeding.—*W. Jeffery, jun.*

Kids suckled by a Bitch.—Last year, when the troops left this station to proceed to the frontier war, a goat belonging to an officer had two young kids the very morning the force marched. The cruel native servants, who have less feeling than any animal, even a tiger, took with them the poor mother and left the two kids behind, because to carry them would have entailed a little trouble, a thing most devoutly abhorred by this class of menials. The little kids made a terrible bleating noise at being left all alone; and a pariah dog, who was employed as a wet nurse, in the opposite compound, for two English puppies, came over the road and took the helpless little kids in her mouth, and conveyed them into the box where her two puppies were: after this she regularly suckled them, and brought them up with the other two of her adopted family. It was a curious sight, the old lady suckling two puppies and two kids; she laid down to the former, but had to stand up for the latter; they used to run at her in the usual vehement way lambs and kids do at their mothers, which often gave the dog great pain; but, notwithstanding this, she was never known to bite at them. These two kids grew up and followed the dog about, along with the two puppies all day, until the kids became as big as the old dog herself: she nursed them for about three months, when she had a family of her own, and left off taking any notice of them further than by a good-humoured wag of the tail or an occasional lick of their faces. These kids grew up to be big goats, and continued playing with the dogs, their foster-brother and sister. The old dog had been, in the first place, deprived of her own offspring, and the two puppies had been brought to her to bring up. Perhaps having lost her own family made her take compassion on the kids, thus showing that "A kindred feeling makes us wondrous kind" does not apply to the human race alone. —*T. P. Norgate; Sealkote, January*, 1865.

Notes on the Indian Crow. By Major Norgate.

This bird may be considered as the scamp among his feathered brethren. He is the most impudent, impertinent, inquisitive, loquacious, bullying, and annoying bird perhaps known. With his habits all residents in India must, in spite of themselves, be tolerably conversant, for the crow comes into your house, flies away with an egg off the breakfast table, sticks his beak into the butter pot, steals the sugar, &c: he gets into a great funk if you chance to come into the room, and catch him at it, and generally knocks down something off the table in his hurry to fly away. His inquisitiveness is unequalled. You cannot leave your house, walk in your garden, dig up a sod of earth, sow a single seed, or sit down anywhere for two minutes without this bird coming to see what you may be doing. He watches the dog, when it hides a bone or piece of meat, and quickly disinters it. The crow is so sharp, that one of them seldom gets anything to eat, without all his dusky companions in the compound knowing it, and a system of robbing immediately takes place, one bird seizes the bone,

or whatever it may be, from the other, then a row takes place. The crow cannot hold its tongue, and the noise attracts the hungry kite, who comes down with a swoop and takes away the bone of contention. I remember once seeing a large rat thrown out of a trap, a crow at once came near, examined it, and pecked at it for a while without making much impression; it then set up a cawing, which brought a dozen other crows to the spot; they all began pecking and tugging at it, and had nearly succeeded in breaking the skin of the rat, but they could not keep their good luck to themselves, but made such a noise that a kite, flying over head, thought they had got something good, made a pounce at the rat and fled away with it, leaving the party of crows in the utmost astonishment, with their necks stretched out, at the sudden disappearance of their prey.

The crow will take a piece of bread from a child's hand, or even its mouth; it will bully a small chicken or young duck when the hen is not present—it dare not do it when she is there to defend her family.

If you shoot a crow, every other within half a mile will come hovering round in great excitement, or will alight on the trees close by, making a terrible row.

The crow has meetings for some reason or another; these the natives call "Punchayeti" (a sort of court). I have several times seen these assemblies; four or five crows will alight upon an open space, generally on green grass, two or three will begin cawing, and in a minute or so, some forty or fifty of them will come flying towards the place by twos and threes from every quarter: they then form a kind of ring round one crow, who appears to be an offender against some of their rules of society, and they remain still for some minutes—the culprit never appears to attempt to escape; then all of a sudden five or six of them will attack the prisoner, pecking him and striking him with their wings. On one occasion I saw the crow left dead on the spot, on another the prisoner's wing was broken; but these courts, or whatever they are, suddenly come to a termination by the too near approach of a man or a dog. I saw one meeting which lasted twenty minutes, but no punishment was inflicted on any of them and no noise was made; the whole assembly flew off together, they were not disturbed at all, and they were eating nothing, for it took place on a bare plain. Of course it must only be surmised as to why these crows are punished by the others; perhaps some close observer may discover the reason. The crow can hardly be called a gregarious bird, in the same way that the rook is, because the crow builds it nest

separately, not more than one in a large tree; but it roosts at night in large parties. It seeks its food on its own hook, not in company, and it is only accidental when more than two or three are seen together. Generally the crow goes in pairs, but of an evening it collects in large flocks, and flies towards some thick wood or tree, sometimes ten miles away, where it puts up for the the night; here it meets all the crows of the surrounding neighbourhood, who make a great noise before they seem to get a bed to suit them. They are very early risers, small parties leaving the wood or tree as soon as it is light.

The crow attends cattle, hunting about all over them for ticks and other parasitical insects, and, as long as the bird confines himself to this amusement, he appears welcome, for the cattle submit to his close inspection most patiently; but the crow is a mischief-loving bird, with a dash of fun in him, and every now and then he gives a sly peck at some sore place on the animal's back, and, although driven off twenty times, he will still return to his annoying occupation. The crow seems to devour anything eatable, nothing seems to come amiss; every piece of manure left on the road is most minutely turned over for any particles of undigested grain; every bone is peered into to see if a suspicion of marrow remains; dead animals are devoured by it as soon as the vultures or jackals have made a hole in the carcase, for the crows beak, though strong, cannot break through the hide. When carrion is found by it, the crow has to wait until the vultures have satisfied their hunger; but he sometimes vents his spleen at being kept waiting by sly digs on a vulture's neck (which is bare) when that bird is busily engaged in tearing off the flesh from the dead animal; the vulture makes a clumsy attempt to peck his tormentor, who then takes the advantage to steal the morsel of flesh and fly off. All grain and most kinds of fruit are devoured by the crow; in fact, the only things that he does not seem to touch are orange-peel and celery, which few animals will eat excepting the goat.

Without any apparent reason, unless it be for fun, the crow will fly after the raven and big crow, also after a hawk, and bully them greatly. It will sometimes pounce down on the head of your dog, and really appears to enjoy the animal's consternation. At these particular occasions the crow can fly very fast, and manages to keep above the bird he attacks in the air; however, the hawk often does not seem to see the fun of it at all, and flies after the crow in good earnest, when the latter is very glad to beat an ignoble retreat into some thick tree, where he vents his abuse in loud caws.

The crow robs the artless nest of the dove, in which its eggs are so

exposed to view that any passer by can see them; but he often comes in for a good thrashing from the dove, and seems to know that he is a rascal, as he always bolts ignominiously. During the hot weather the crow seems to suffer much from the heat, for it may often be seen with beak wide open, panting under the shade of a tree. In the hottest part of the day the crow is silent, but at any other time, when it is light, there is a continued noise kept up by some of them.

"Splendens" is an odd specific name for this bird; I confess I can see very little splendens about this scamp; at any rate, Corvus Indicus may be just as good a name. In size it is about that of a jackdaw; colour black-brown, with a gray ash-coloured ring round the neck, a deep blue shade appears on its feathers when seen in the sun. It inhabits all the plains of India, and is seen in some of the hills, but not very far in them. Like the rook, this crow appears, at certain seasons, to be taken crazy, for it darts and shoots about in the air like an arrow, making a screaming noise. The natives say this is a sign of wind.

The only good quality I know of this bird is his great affection for his partner; he is continually stroking her with his bill and caressing her; this is done at all times of the year, and not during the breeding season alone.

Crows are easily taken in any kind of trap, as long as the place of setting it is varied, but once a crow has been caught, no other will be caught in that place for a long time.

At certain seasons of the year a class of natives purchase crows to turn off again, as they fancy all their sins go with the crow; it is just as well for the birds. The natives do not think it necessary to offer him up to appease one of their three million gods. These miserly Bunniahs (or green grocers) pay as much as three shillings for a crow, so desirous are they of getting absolution for their sins.

The crow has two or three young ones twice a year; these are of a blue-black colour, and do not get the gray ring till the second year. They follow their parents about for a month or so, making a most clamorous noise for food. The crow catches white ants and locusts in the air with tolerable facility. If any misfortune should befall one of their brethren the crows do not show any sympathy, but begin teazing it and pecking at it until it dies. No severer punishment can be given to an impertinent crow than to pluck a place bare on its back or neck and let him go; you will seldom see that bird again. I think from the character here portrayed, and from his habits and customs, the name I have given the bird is somewhat appropriate, and so I will take

leave of the crow, although the scamp never takes leave of me; he is always present.

T. P. Norgate.

Sealkote, Punjaub, India, April 3, 1865.

Ornithological Notes from Lanarkshire.

By Edward R. Alston, Esq.

(Continued from page 9573.)

May, 1865.

Merlin.—A female merlin, which built this month by the side of a small heathery glen on a farm near this, showed an attachment to her eggs almost worthy of being recorded along with the famous raven in Gilbert White's second letter. Being flushed from the nest she was fired at and struck, but not killed; about an hour afterwards she was found seated on her eggs, so severely wounded that she was unable to move, and was taken with the hand. Even the stern heart of a game-keeper was touched by the devotion of the poor mother, who had used her last remaining strength to return to her beloved charge, but nothing was left but to put her out of pain. The bodies of three snipe were found beside the nest, a proof of the great powers of flight of this handsome little falcon; the eggs, four in number and partially incubated, were brought to me. I have never seen any eggs of the merlin which agreed with Morris's description, "Bluish white, blotted, particularly at the thicker end, with deep reddish brown or greenish brown" (vol. i. p. 116). Yarrell's account is much better, "Mottled all over with two shades of reddish brown" (vol. i. p. 50); they vary, however, considerably in depth of tint; but, like all falcon's eggs, they are generally darker at the smaller end. A female merlin, which was sent to me from Ayrshire, in January last, was so gorged with the remains of some species of thrush that not only the stomach but even the gullet, was completely crammed, almost to the throat; this was an unusually dark-coloured example.

Tawny and Barn Owls.—I lately examined seven "castings" of the tawny owl; they contained the bones, fur, &c., of at least ten mice and field-voles, six or seven shrews, one young rabbit, and one small bird. As these birds throw up at least one casting daily the number of mice destroyed by a pair in the course of the year must be enormous. Mr. Broderip, in his admirable account of the owls in the 'Zoological Recreations,' speaks of this species as "a sylvan hermit, with a dash of

the poacher about him too—a sort of feathered Clerk of Copmanhurst, for—

'He whoops out his song and he laughs at his jest,'

living ostensibly on very simple food, but making free every now and then with a young rabbit, or mayhap a leveret." But the rabbit ought certainly to be put down among the good offices of the hermit, for these animals are even more destructive than the mice and voles. A pair of tawny owls bred here this season in a deserted nest in the midst of a populous rookery, where, however, they were much annoyed by the impertinent curiosity of their sable fellow-citizens. Does not this species almost invariably build in hollow trees? Yarrell and Morris both describe the Strix aluco as being rarer in Scotland than in England, but here it is decidedly the commonest of the family, the barn or white owl being rather rare. Does the latter ever hoot? I am inclined to believe not, and am convinced that Sir William Jardine is at least mistaken in saying that, "at night, when not alarmed, hooting is their general cry." A few years ago I spent some months in a house in the South of Germany, which stood close by the village church; the steeple of the latter was inhabited by numbers of barn owls, and though I often listened at night to their strange hissing, snoring and screaming, yet I never once heard them hoot. I also once kept a tame specimen for some time; it shrieked horribly, but I never heard it hoot.

Birds of Passage.—The swallow was first seen here on the 17th of April (one specimen, and more next day). It was recorded in the local newspapers as having appeared at Greenock on the 14th and at Airdrie on the 16th. Now as these places lie to the northward, but are situated in a much lower-lying part of the country, it might lead one to suspect that the summer migrants follow the course of the lower and milder tracts, gradually spreading to the higher and more exposed districts, instead of following a direct northern course. The cuckoo was first heard on the 23rd of April; the willow wren appeared about the same time. Flycatchers had eggs by the end of May.

EDWARD R. ALSTON.

Stockbriggs, Lesmahagow, June 6, 1865.

Errata.—In my notes on the wild white cattle (Zool. 9514), for "Dunnlarry, Dumfriesshire," read "Drumlanrig." This mistake was caused by a misprint in the 'Penny Magazine.' In my notes on rooks (Zool. 9572), for "many of them had nests," read "many of them had eggs."—*E. R. A.*

Ornithological Notes from Flamborough. By JOHN CORDEAUX, Esq.

LAST year I sent a few short notes to the 'Zoologist' (Zool. 9243), on the birds seen during a visit made in July to this famous Yorkshire headland. I therefore venture again to offer some further remarks on the Ornithology of Flamborough, from notes taken during a short visit there with a friend in the last week in April.

On the 24th of April, at 2.30, we arrived at our comfortable and quiet quarters in Thornwick's Hotel, within a short distance of that romantic little bay known as the North landing-place. It was a bitter cold day, the wind north and a dreary gray sky, harmonising, however, with the bleak and wintry appearance of the headland. The hedgerows and few stunted trees on this the north side of the promontory showing, compared with what we had seen on our journey down, but little indications of spring time.

On our way from the Marton station I kept a sharp look out for any of our summer warblers, but none were to be seen; two or three yellowhammers and a pair of blue titmice being the only result of a somewhat close inspection of the hedgerows.

The North landing-place at Flamborough is alone worth a visit. On a steep incline running down to the beach, and out of reach of the heavy surf, are drawn up the boats the property of the fishermen, who compose almost the entire population of the neighbouring village. Perhaps no portion of the coast exceeds in beauty this lovely bay. Both on its eastern and western sides the ceaseless work of the wave has excavated in the base of the limestone cliffs deep caves and holes: some of these caves or "Robin Lythe's Holes," are of considerable extent and beauty, and well worth the trouble of exploring. It was high water when we reached the landing-place, and a heavy sea was breaking over the reef at the entrance of the bay. The boom of the heavy waves was re-echoed again and again from the deep caverns, while the foam was hurled far up the sides of the rugged cliffs. Out to seaward, ridge beyond ridge of white crested waves promised us as yet but little prospect of our intended boating excursion along the coast. Flying backwards and forwards, with slow and stately motion over the bay, were thirty or forty herring gulls, the greater portion birds of the last year in their dark immature garb, the remainder old birds in full summer plumage. Now one, now another, would dash suddenly downwards, and rescuing from the foam some morsel of floating matter, resume its stately wheeling flight. Amongst the herring gulls was a solitary kittiwake, its light graceful flight and pure unsullied plumage

contrasting strongly with the dignified movements and the sombre tints of the young herring gulls. As it was too rough an afternoon for boating, we decided to walk along the summit of the cliffs in the direction of Speeton. Climbing down amongst the broken masses of diluvium, and crossing a little rill from the high ground almost choked with bright yellow masses of the marsh marigold, and thickly bordered with rushes—a likely looking spot for woodcock and snipe on their first arrival from the far north—and then scaling the opposite hill, we presently reached the higher range of cliffs. It was not, however, till we passed the northern extremity of the Dane's Dyke that we reached the great harvest of the sea-fowl. The old trench and embankment called the Dyke, now covered with gorse and brachen, runs completely across the promontory, here about three miles from sea to sea. Popular tradition ascribes it to the Danes, although it is probably of much older date. Even now, after the lapse of so many centuries, the work remains in a wonderful state of preservation, and will well repay exploring from end to end. From Dane's Dyke to the termination of the chalk cliffs near Speeton, where they leave the coast and run inland, is, measured by the sections of the coast as given in Phillips's 'Illustrations of the Geology of Yorkshire,' just three miles, and the average height of the cliff about 330 feet. This portion of the coast is now the last retreat of the sea-fowl—last I say, for most certainly if the present senseless and cruel persecution of the birds is continued, the day will arrive when they will be as rarely seen as on the opposite side of the headland.

I was told that a few days previous to our visit a party of five men had been down for a day's shooting, and boasted to have killed six hundred head of guillemot, razorbills, &c. The greater portion of these birds thus slaughtered they did not even take the trouble to pick from the water. It was a mere wanton, senseless and useless butchery. Old residents at Flamborough have frequently assured me that twenty years since, before the railway was made, the sea-fowl were then more than double in number compared with their present quantity. At that time they regularly frequented and bred in the lower ranges of cliffs, and in all the little bays as far as the extreme point of the headland. Now on all this portion of the coast hardly a bird, saving a few rock pipits and jackdaws, are to be seen. Still after twenty years of almost ceaseless persecutions, on all the higher range of cliffs, the number of sea-fowl is very great.

During our evening walk we saw immense quantities both of the guillemot and razorbills, and about the highest and most inaccessible

part of the rocks thousands of the beautiful kittiwake gulls. We only saw three puffins, however; they have certainly not yet arrived on the coast in any number, as these were the only birds of that species seen during our visit. Last year, in July, next to the guillemot they were the most numerous. I did not succeed in finding the ringed guillemot, for although I ran my telescope carefully along row after row of birds as they sat upon the cliffs, and in this way examined great numbers of them, I failed to detect one with the white eye streak. Occasionally, on one approaching the edge of the cliffs, a small flock of rock pigeons would dash out from below, looking mere miniatures in size compared with their domestic allies. This was owing, no doubt, in a great measure to the gigantic character of the surrounding objects, which gave all the sea-fowl a much smaller appearance than was really the case.

April 25th. On coming down this morning I was much pleased to find the wind had changed during the night, and was now blowing full W., a favourable quarter for our proposed boating excursion under the cliffs. On walking down to the North landing-place we found a heavy swell still rolling into the little bay, the effects of the late northerly winds.

Having engaged our boat we were presently pulling through the surf and out into the sea, keeping well out to escape the ground swell, which was anything but pleasant close in shore. Soon after leaving the Bay the light mists, which during the morning had enshrouded the headland, began to clear away. I never before saw Flamborough look to such perfection as it did this morning; the grand range of cliffs on our left rising perpendicularly from the water, their tops still circled by their gauze-like wreaths of mist. Seen through the medium of this light transparent veil they loomed gigantic. Filey Bay in the distance was enveloped in the same thin veil, with the famous "Brig" showing low down on the water as a darker shade. While far out to seaward the horizon was shut in by a rich purple haze. The sea was not rough, but a long unbroken swell was rolling in. As our light boat rose like a sea-gull on the summit of these long rolling swells, far out to our right we saw "wold" beyond "wold" of green water heaving gently upwards and then sinking again; floating on their green ocean fields, far as the eye could reach, were innumerable kittiwakes and herring gulls, black and white razorbills and guillemots, dotted about on the waters like flowers in the inland meadows.

We found but few birds on the cliffs till opposite the northern termination of Dane's Dyke. From this point they began gradually to

increase in numbers. Several small parties of razorbills and guillemots flew close past the boat, flying towards the rocks. It is not difficult to distinguish at once the difference between the former bird and the guillemot on the wing, even when at a considerable distance. The razorbills have a much thicker and clumsier appearance about the head and bill, more approaching to the puffin; and the darker colour of the upper parts, which is readily distinguishable at a distance from the brown of the same parts in the guillemot, will also at once serve as a distinction. When swimming on the water, and on the close approach of the boat, the guillemot invariably took wing, scuttling along the water for some yards before getting well up, like young wild ducks. The razorbills, on the contrary, would dive, coming up again at some distance from the boat. The guillemot, when on the wing, has the same odd manner of moving the head about which may be observed in them on the rocks, where they sit bowing and moving to each other with the utmost appearance of politeness.

The cry of the razorbill is frequently wonderfully like the short bark of a young puppy. The resemblance is often ludicrous, and gives one the idea of a pack of young foxhounds on the rocks.

Two miles beyond the North landing-place, and not far from the highest part of the cliffs, there is a remarkable dislocation of the chalk strata, as if the bed of limestone had been violently pushed together when in a soft state by some tremendous lateral pressure, thus forming what geologists call synclinal and antictinal curves. The face of the cliff is here much broken up into narrow ridges and shelves, and at the time we passed every available resting-place was crowded with birds, row above row; and in places where the nature of the rock permitted, they sat packed close together in crowds. Almost a continual stream of guillemots and razorbills was constantly passing out to sea and returning to the rocks. Thousands of kittiwakes hovered along the face of the limestone precipices, while many together, like white patches of snow, sat here and there on the ledges.

The amount of birds seen at this portion of the coast, both on the wing and on the rocks, was prodigious, and far exceeded anything I had seen before. Hundreds of kittiwakes were hovering over the boat, but at a great height,—many of them showing as mere shadows in the light sea fog which was drifting overhead,—like the pale ghosts of departed kittiwakes revisiting their old haunts.

During the whole of our boating excursion we did not see a single puffin.

In the afternoon we walked up to the village and inspected a fine

specimen of the whitetailed sea-eagle, which had been shot some time since on the rocks near the Head. It had been stuffed and set up by Mr. Bailey, bird and egg-collector. Mr. Bailey informed us that a fine specimen of that rare bird, the buffel-headed duck had been shot near Bridlington Quay during the last winter.

We walked from the village to the extreme point of the headland. We observed several wheatears, stonechats and rock pipits; the latter bird has the same characteristic manners as seen in the tree and meadow pipits, rising into the air for twenty or thirty yards, all the time uttering their simple song, and then descending again head foremost, the tail spread and thrown backward.

On one of the fine isolated masses of rock at the extremity of the Head were seven purple sandpipers, sitting just out of reach of the heavy sea on a narrow ledge of the rock. Five of them were in a state of repose, the head doubled back under the wing; the other two were running nimbly backwards and forwards on the narrow shelf.

We continued our walk along the northern cliff, observing the manners and customs of starlings, jackdaws and rabbits. I was surprised to see the ease with which the rabbits ran along the almost perpendicular sides of the clay cliffs; apparently the slightest slip must inevitably precipitate them hundreds of feet below into the boiling sea.

When walking out this evening, about 8.30, enjoying our pipes, we heard overhead the well-known cry of the green sandpiper. I was told it is by no means an uncommon bird at this season of the year at Flamborough.

April 26th. Having seen our luggage despatched on the back of a donkey to the Marton station, we walked down to take a farewell look at the North landing-place. Two or three fishing-boats had just come up, having met with but indifferent success, owing, as the fishermen told us, to the unusually early appearance of sharks on the fishing-ground. Each of these boats did not contain more than thirty or forty lean-looking cod, besides a few lings and skates After the fish had been sold they were immediately opened, the livers placed together in a basket, and the entrails, &c., carefully put on one side for bait. They were then packed into deep baskets, the baskets slung across the donkeys' backs, and thus carried up to the village to be finally dispersed by rail over the kingdom.

On examining the contents of the stomachs of the cod I found them to consist almost entirely of crabs, both the common and soldier crab, several very fine prawns, looking nearly as fresh as if just caught, and a few of those curious and beautiful annelids, the sea mouse (*Aphrodita*

aculeata). This curious animal is covered with sharp bristles and soft silky hairs, of the most brilliant metallic colours, a dress which rivals in beauty the gorgeous eyes in the peacock's tail.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
May 10, 1865.

Ornithological Notes from North Lincolnshire.

By JOHN CORDEAUX, Esq.

(Continued from page 9600).

MAY, 1865.

Gray Plover.—May 3. Punctual to their time, the first week in May, the gray plovers have arrived on the coast. On this day I saw several small flocks of these birds on the "flats." One flock, which I examined through a powerful field glass, consisted of birds, half of which showed as yet little change in plumage from the usual winter garb. The remainder were more or less in the transition state, one only appearing in the full summer dress. On the 8th I counted sixty together feeding on the flats; this flock was composed of birds in every state of transition plumage. On the 24th, with a very few exceptions, the gray plovers had entirely acquired their full summer dress. These birds arrive on the Humber shores in much greater numbers during their passage northward in the spring than on their return southward in the autumn. At this latter season they are only seen in small parties, not in large flocks; some few are always found on the coast during the winter months; the greater portion, however, after a short visit, leave again. Every day on which I have been on the coast during the past month I have seen numerous flocks of gray plovers feeding on the mud flats. Unlike the whimbrel, however, they never resort to the grass marshes and corn lands bordering the river: they are wild and shy birds, rising immediately on the slightest appearance of danger, flying in a wide circle out to sea, and returning again to some distant part of the fore shore or some mud bank surrounded by the water. From the impassable nature of these dreary mud plains it is almost impossible to get within gun-shot of them. I have frequently endeavoured during the month to obtain a gray plover in the full summer plumage, but hitherto without success. To-day (June 1st) I did not see any gray plovers on the coast. The local name of this bird is the "sand plover."

Whimbrel.—These birds prefer feeding, at this season, in the grass marshes and corn lands to the deep ooze of the Humber shores. Although some few may generally be found during this month on the fore shore, yet by far the greater number resort during the day time to the grass marshes. They have been very numerous during the month in this neighbourhood, but have not remained quite so long as usual. In a walk extending over many miles along the Humber bank, on the 24th of May, I only saw four of these birds, where a few days previously I had seen large flocks.

Dunlin.—After an absence of nearly a month the dunlins have returned in great numbers. On the 13th I saw immense flocks of them; hundreds packed together were flying backwards and forwards over the fore shore—a most unusual sight at this season of the year, giving the coast all the appearance of a winter's scene. I also observed the same day unusually large flocks of sand plovers, whimbrels and ringed dotterells on the flats. During nearly the whole of this month dunlins have been very numerous; by the 13th they appeared to have fully acquired the summer plumage.

Ringed Dotterell or Ringed Plover.—Observed during the last fortnight several small flocks of ringed plovers on the coast; they are sociable birds, feeding in company with other species frequenting the coast.

Bartailed Godwit.—Unusually scarce; I have only seen one small flock (May 24th) feeding on the fore shore, in company with whimbrels, dunlins and gray plovers.

Blackheaded Gull.—These gulls are far more commonly met with than any of the other species frequenting the Humber. At this season of the year they are absent at their inland breeding-places. There is a famous breeding-place in this county on Sir John Nelthorpe's estate, near Brigg; and another in Yorkshire, at Hornsea Mere. I have seen two or three old birds flying about the great drains in the marsh district during the last week in the month.

Scaup Duck.—On the 24th, when walking with a friend along the Humber embankment late in the afternoon, at which time the tide was washing the foot of the bank, we observed a solitary scaup swimming close in shore: it proved to be an old male in full plumage. We had a long look at the bird, which was busily feeding about thirty yards from the foot of the embankment, constantly diving, and each time, on the average, remaining under water for twenty-five or twenty-six seconds. What was this old male scaup doing in the Humber so late in the season, long after the departure of its comrades for their northern

summer haunts? I have frequently observed late in spring old male scaups in full plumage on the Humber, but never before so late as the 24th of May.

Swift.—Notices have appeared in the 'Zoologist' remarking on the scarcity of swifts during the summer of 1864; Dr. Boulton particularly remarks on their decrease in the neighbourhood of Beverley. I cannot say there is any marked diminution in the number which frequent this district. The old tower of Grimsby Church has long been a favourite nesting-place for swifts, and seldom a day passes, when at home during the summer months, without my seeing some of these birds hawking over the marshes. It is a very curious fact that the swifts should have deserted the ancient town of Beverley, a place apparently so well adapted for their habits. Probably for some cause or other they may have been induced to change their quarters, and after all there may not have been any real decrease in their numbers throughout the country, but only in certain localities. Last year I saw great numbers of swifts when staying for a few weeks at the sea-side, near Bridlington Quay, which place is not more than twenty miles in a straight line from Beverley. These birds might be daily seen from morning till night hawking backwards and forwards over the Esplanade and about Fort Hall. I did not think at the time that the mention of these swifts would have been of sufficient interest to the readers of the 'Zoologist,' or I should have made some attempt to ascertain their numbers. From what I remember, however, there certainly could not have been much less than thirty or forty pairs in this locality, and I recollect very well making the remark that I had never before, in any other place, seen so many swifts together on the wing.

White Rook.—A white, or rather creamcoloured, rook was taken a few weeks since out of a rookery in this neighbourhood, at Killingholme Manor. The entire plumage of this bird was cream-colour, the beak and legs yellow.

Fieldfare.—I saw a considerable flock of fieldfares in this parish on the 2nd of May, and a solitary bird on the 4th.

Spotted Flycatcher.—A pair of these little birds, which have now for many summers frequented a pear tree trained against the side of my house, did not this year make their appearance before the 24th of May. A friend informs me, however, that a pair of flycatchers, which have for twelve years built in a similar situation against the side of his house, returned to their old haunts on the 4th of May. This is unusually early for them to appear in North Lincolnshire.

Arrival of Summer Migrants during the Month.—May 2nd, white-

throat; 3rd, whinchat; 6th, garden warbler and swift; 7th, sedge warbler.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
June 2, 1865.

Dates of the Oviposition of Birds in the Neighbourhood of Marlborough in 1865.—The following observations on the oviposition, &c., of birds in the neighbourhood of Marlborough, were made by the under-mentioned Members of the Marlborough College Natural History Society, and are kindly communicated to the 'Zoologist' by the Rev. T. A. Preston:—

Kestrel. April 21. J. W. Parrington.
Sparrowhawk. April 26. C. E. Lawson.
Tawny Owl. April 11. R. C. Davis.
Redbacked Shrike. Seen, April 10. J. Pole.
Missel Thrush. April 8. W. R. Carles.
Song Thrush. April 3. W. W. Melville.
Blackbird. April 10. E. H. Carr.
Ring Ouzel. Seen, April 16. A. Armstrong.
Hedge Sparrow. April 12. W. Blaker.
Redbreast. April 11 (hard-set). P. S. Robinson.
Redstart. April 28. R. C. Davis.
Whinchat? April 26. F. Kingsford.
Common Whitethroat. May 2. H. Chester.
Lesser Whitethroat. May 1; nest ready; no eggs. A. C. Almack.
Great Tit. April 27. R. C. Davis.
Blue Tit. April 24. R. C. Davis.
Longtailed Tit. April 24. G. A. Wright.
Pied Wagtail. April 27. M. Ward.
Sky Lark. April 20. J. W. Parrington.
Blackheaded Bunting. May 5. P. S. Robinson.
Yellowhammer. April 17. W. W. Melville.
Chaffinch. April 15. W. W. Melville.
House Sparrow. April 17. W. W. Melville.
Greenfinch. May 3. R. C. Davis.
Hawfinch. May 3. H. F. Boyd and E. H. Carr.
Common Linnet. April 26. E. H. Davis.
Starling. April 24. L. C. Calley.
Jackdaw. April 11. J. Pole.
Magpie. April 8. H. W. Hockin.
Jay. April 26. P. S. Robinson.
Common Creeper. April 28. R. C. Davis.
Common Wren. May 3. R. C. Davis.
Nuthatch. April 28. R. C. Davis.
Cuckoo. Heard, April 8; seen, April 12. P. S. Robinson. Young bird, May 3. W. W. Dayman.
Swallow. First seen, March 28; next noticed April 2. E. G. Bevan.
Swift. Seen, April 27. H. W. Hockin.
Ring Dove. Eggs, March 10; young birds, March 22. J. H. Lambert.
Stock Dove. April 11. R. C. Davis.
Peewit. April 18; hard-set eggs, April 20. J. W. Parrington.
Land Rail. Heard, April 26. H. P. Lee.
Moorhen. April 13. P. S. Robinson.
Dabchick. April 29. J. W. Whitaker.
Herring Gull. Seen, April 23. W. R. Carles.

Notes on Birds in Carmarthenshire.—We have had here the severest and longest winter remembered; the snow was quite eighteen inches deep on the level twice, and it laid on the mountains from the middle of January to the end of March; the first spring-like day we had was the 30th of March; since then we seem to have had it more like summer than spring; the nights have been frosty, but, with one exception, the frost has done no harm. The summer birds seem to have come all at once. I saw a chiffchaff on the 1st of April; heard several on the 4th. Heard a wryneck on the 6th of April; cuckoo on the 10th; willow wren, tree pipit and swallow on the 11th; blackcap on the 12th; wood wren and corn crake on the 20th; house martin on the

4th of May,—this is singular, as the swallows were early. I feel sure we have several kestrels to stay the summer: I only knew of one pair during the winter, but now there are four or five pairs building just round here. I think I told you the gray wagtail breeds here: one pair came regularly during the winter to our back door just after dinner, when they used to get some crumbs, &c.; since the fine weather they have not been so regular and are more shy: they are evidently intent on building, but I cannot find out where; I think in a stone wall just below this house and by a little stream. I have asked several to get me the nest and eggs of the dipper; they are pretty common birds here. I took a pair of tawny owls' eggs last week. From what I hear I believe the merlin breeds near here; I intend going to see if they do: I think I shall see it, as I have offered a good price to any one who will show me the nest. Chiffchaffs and wood wrens (or warblers) seem more numerous and generally distributed than I noticed them in England; and there are not many more willow warblers—they are decidedly less numerous than at home. Of course we have no nightingales, and there are but few blackcaps. I am not sure if we have the garden warbler. Larks are much less numerous than with us. I have, however, heard the wood lark singing in every month since I have been here; it is called the "mountain lark": during the severe weather, in February, a little flock of five birds came for several days into the farm-yard; they generally kept by themselves, and were very tame: we had no sky larks here at that time. I never remember seeing the birds generally suffer so much as they did then. Blackbirds and thrushes were continually in the cattle-yards: one day in particular the rooks swarmed in the yards; they came within five or six yards of the men at work, and when I walked towards them they only just went out of the way: when the poultry woman fed the fowls she could not keep them away without a boy to stand at the opposite end of the feeding-place; if one by chance found anything eatable four or five would be sure to pitch into him, so that the poor wretch was glad to be off. About the same time I had four men moving some earth in the stack-yards here, when three pairs of stonechats kept close round them, and if a worm was seen down they came upon it within a foot of their spades, just as you often see the redbreasts. Magpies are very common, and are quite birds of omen: the women when they see one or two, will stop at once, and watch which way they fly and how, so that they may see if they are to be lucky or not for that day. Carrion crows, too, are very common, and are most certainly unlucky birds; I do not think I shall be far wrong if I say they kill hundreds of mountain lambs yearly. Starlings come with the cold weather and leave with it; we had immense flocks during the winter, but they are all gone now. We had very few woodcocks this season; I went out several times, but never saw more than three or four; I am told generally it is easy enough to find five or six couples.—*Thomas Dix; Llwynbedw, Kenarth, Carmarthen, May* 5, 1865. [Communicated by Henry Stevenson, Esq.]

Occurrence of the Roller off Yarmouth.—A very beautiful example of this rare and accidental visitant to our coast was taken alive on board a vessel off Yarmouth about the 25th of May, but died before the ship arrived in port. It was there purchased of the sailors for Mr. Sayer, one of our Norwich birdstuffers, who received the bird in the flesh on the 26th. I was sent for that evening to see it, but being away from home the bird had been stuffed before I examined it, on the 29th. It proved to be a male in perfect plumage, though in rather poor condition, the stomach containing only a minute fragment of a beetle's leg.—*H. Stevenson; Norwich, June* 20, 1865.

A Visit to the Dorsetshire Coast in the Nesting Season.

By J. Edmund Harting, Esq., F.Z.S.

I was very desirous to see some of the rarer cliff-birds in their haunts, and more particularly the peregrine, raven, chough and rock dove, and with this view I started, in company with a friend, to visit the Dorsetshire coast; for reports had reached me to the effect that these birds were still to be found in some of the lofty cliffs there; nor was I altogether disappointed.

We took up our quarters at West Lulworth, and could hardly have selected a more delightfully quiet and picturesque place. In driving from the station at Wool to Lulworth, a distance of six miles, we saw but few birds, with the exception of several pairs of peewits, which were evidently breeding in the neighbourhood, and a solitary herring gull. With regard to the breeding-stations of one or two species of which we were in search, we gathered a few useful hints from some of the fishermen, and were thus enabled to proceed at once to the most likely spots in which to find them.

The observations which I daily noted down were, as a matter of course, without any arrangement, and merely headed with the day of the month. I have since endeavoured to put these rough notes into a more useful shape, by placing under the head of each species all the remarks I had made with reference to it.

Peregrine Falcon.—One of our greatest hopes was to see this noble bird in his true haunts among the steep and rugged cliffs, and I confess I should have been disappointed not a little had we searched for him in vain; although in these days, when so many birds of prey are sacrificed to the taste for game preserving and collecting, I could hardly have been surprised had we found the species extinct. On the 22nd of May, L. saw a female peregrine fly over the arched rock at Durdle,—called by the fishermen "Durdle Door,"—and the same evening I picked up, on Swyre Cliff, a feather which had undoubtedly dropped from the wing of one of these birds. A few days later, during one of our rambles, we found, at a short distance from the edge of one of the cliffs, several remnants and well-picked bones of guillemots, which we attributed to the work of a peregrine, for no other bird inhabits these cliffs which would have sufficient strength to kill a guillemot, except perhaps the raven, and I doubt whether even he would make the attempt upon an old bird, unless it had been previously wounded.

The fishermen call the peregrine the "falconer," or, as they pronounce it, in their broad Dorset dialect, "farkener": they are well aware of the price which is set upon it by collectors and local keepers, and never fail to rob the nest when an opportunity occurs, so that it is almost surprising that any of these birds still remain in the cliffs. On the 28th of May we walked westward in the direction of Weymouth, and while standing on the summit of Bat's Head, one of the most perpendicular of the range of cliffs, a magnificent old peregrine dashed out from below, and passed so close to us that we could hardly have obtained a better view had the bird been in confinement: had I wished for a shot I could not have had a finer opportunity; but shooting on that occasion was not my object, and my maxim is, "If you do not want a bird for some useful purpose, why kill it for the mere sake of shooting?" I was anxious to see this bird in its wild state, and try to learn something of its actions and habits: on the present occasion, however, we had appeared too suddenly to witness anything more than its extraordinary powers of flight. With one stroke of its wings it had sped far out of shot, and we watched it through our glasses till its steel-blue back and jet-black cheeks could be no longer discerned in the distance. We were anxious to learn, from actual observation, if possible, whether the peregrine makes any nest, and we ascertained that the bird usually selects a ledge under an over-hanging portion of the cliff, and, scraping away the loose grit, deposits four eggs in a slight hollow. Before our arrival at Lulworth a nest had been discovered, containing three young birds and an addled egg: these were taken, and as soon as we could discover the owner of the egg, I had little difficulty in inducing him to part with it: although it is by no means a good specimen, and is pale in colour, it is nevertheless of far greater interest and value to me than any rich-coloured specimen I could purchase from a dealer, from the fact of my having seen the nest, and witnessed the risk which is always attendant upon taking an egg from the cliffs.

Kestrel and Sparrowhawk.—The fishermen assert that three species of small hawks inhabit the cliffs, which they call respectively the "windhover," "vanner" and "sparrowhawk," but I incline to think that the two first names must be referred to the kestrel in different states of plumage, or perhaps to the male and female of that bird. We observed both kestrel and sparrowhawk among the cliffs, the former bird by far the commoner, but we failed to discover any third species. On mentioning the subject one day to a local keeper, he expressed so strong an opinion that there were three species that I began to think

that perhaps the merlin is found here: we could obtain no proofs, however, to that effect. I inquired from the same keeper whether hawks were numerous, and whether they were suffered to remain and breed in the cliffs every year: his answer was that, on the contrary, not only are their eggs taken whenever a nest is discovered, but the old birds are trapped and shot upon every opportunity, and that upon one occasion, when a regular *battue* had been planned, and one keeper proceeded along the foot of the cliffs in a boat, while the other walked along the summit, no less than seventeen hawks were shot in the course of one day! After such unmeasured slaughter, it appeared surprising to us that any hawks remained to be seen.

Hen Harrier.—The fishermen described to us a bird which corresponds with the hen harrier, and they assert that it is now and then seen hawking along the tops of the cliffs. Dr. Pulteney, in his 'Catalogue of the Birds of Dorsetshire,' says, "This bird is common on the downs of Dorset, breeding among the furze. They breed every year on Gunville Down." We were not so fortunate, however, as to discover a nest.

Owls.—The owl can scarcely be included in a list of cliff-birds, but since two members of the genus Strix are found in the neighbourhood, it deserves a passing notice. The barn owl is the commonest species in the district we explored. The tawny owl is occasionally seen in the neighbouring woods, and haunts the tops of the cliffs in the evening, where there are plenty of young rabbits to be found. During the first week in May the keeper at Lulworth Castle shot a pair of tawny owls, but, having no use for them, left them, unfortunately, in the woods to decay. A fisherman at Lulworth took two young birds of this species from a hollow tree in the neighbourhood, and caught one of the parent birds on the nest. He kept them in confinement for two or three days, but as the old bird refused to eat he humanely let her fly.

Wheatear and Stonechat.—As might be expected, both these birds are numerous on the downs which face the sea, and which are studded here and there with patches of furze. The former bird breeds in the rabbit-burrows which extend along the top of the cliffs; but unless the bird is seen to enter or leave the hole it is a difficult matter to find the nest. Dr. Pulteney, in his 'List of the Birds of Dorsetshire,' speaking of this bird, says, "Some stay the winter." In the Isle of Portland they are taken in great numbers, as many as thirty dozen having been taken in one day: "They usually appear in the first foggy weather of March, and leave the island when the gray crow appears in October."

Rock Pipit.—This and the meadow pipit were the only two representatives of the genus Anthus which we saw, the former apparently the commoner of the two. In its actions the rock pipit puts one much in mind of its congener the tree pipit. I frequently saw one of these birds rise into the air and sing while ascending, after the manner of the tree pipit, and then, like that bird, descend again with wings almost motionless and nearly meeting over its back. We shot a few specimens, but they were not in very good plumage. We also obtained several nests, but in all save one the eggs were so much incubated that it was impossible to blow them.

Linnet.—We were rather surprised to find linnets still in flocks in the middle of May, for in previous years we had found the birds paired and the female sitting by the 2nd of that month. They frequented the downs among the furze, sometimes flying over the edge of the cliffs, and returning to alight within a few yards of us. The male birds were in very beautiful plumage, having the entire breast and top of the head bright crimson.

Starling.—The starling, although usually building under eaves or in holes of trees, here nests in fissures of the cliff, and those that we observed were very busy all day carrying food to their young.

Chough.—This handsome bird, although still not uncommon in some parts of Wales and Cornwall, has certainly become rare along the South Coast of England, and we could hardly have been surprised, although we should have been much disappointed, had we visited the Dorset cliffs without seeing one. We were fortunate enough, however, not only to see the birds, but also two of their nests. The chough, when on the wing, if at too great a distance to distinguish the bill, may be readily known from the jackdaw, the only bird for which it could be mistaken, by its rounder wings and more measured flight; its note, too, is sharper and more distinct. Judging from the only two instances in which we were enabled to make any observation, the chough selects for its breeding-place a crevice in a cliff, some eighty or one hundred feet below its summit, where the soil is crumbling and the rock above impends. Generally the crevice extends inwards for some little distance, and perhaps turns to the right or left. On this account it is not only a difficult nest to find, unless the bird is seen to enter the crevice from below, but it is also one of the most difficult to take from its almost inaccessible position: the natural daring of the fishermen, however, further stimulated by the promise of a reward, generally overcomes such difficulties. On two occasions, when in a boat under the cliffs, a chough passed within shot, but reflecting that

we had already done enough to diminish the race by taking the eggs, our charge was saved, and the birds spared, haply to breed again.

Raven.—As a matter of course, this bird being an early breeder, often hatching in March, we were too late to obtain any eggs; we could, therefore, only content ourselves with looking out for the birds, and endeavour to obtain all the information we could respecting their haunts and habits. On one occasion only did I see a raven, when the more practiced eye of a fisherman, who was rowing me, descried it at a distance, and directed my attention. The next evening we were sitting upon an old boat drawn up on the beach, and, with a laudable thirst for knowledge, were conversing with a little knot of fishermen while we smoked the "calumet of peace": a coast-guardsman joined the group, and the conversation, as usual, turning upon birds and shooting, the last comer told us that three weeks previously, towards the end of April, he was on duty on the cliffs at a very early hour in the morning, and when passing over Swyre, he saw on the edge of the cliff a dark-looking mass which considerably puzzled him. In the cold gray light before sunrise it was difficult to distinguish even common objects at a little distance, and so, approaching hastily, he made two sharp cuts with a heavy stick which he carried, and, as much to his own surprise as to theirs, no doubt, he sent four young ravens tumbling over the cliff to the beach below: being just old enough to fly, they had probably left the nest to roost upon the edge of the cliff, and were either asleep or the heavy dew upon their wings had rendered them disinclined to move: some few hours later these birds were picked up on the beach by a fisherman, and went the way of all flesh which falls into the hands of a Dorset fisherman, namely, into his lobster-pots, by way of bait.

Jackdaw.—One of the commonest birds along this coast is the jackdaw, and there is scarcely a cliff in which several pairs may not be seen going in and out of the numerous fissures and crevices, which afford them convenient nesting-places. The birds are of no value, and their eggs, being common enough, are little sought after; hence this species enjoys comparative immunity, while the nests of gulls and guillemots, perhaps within a few feet of them, are robbed without much compassion. During the time the young are in the nest the parent jackdaws are unceasing in their labour of finding and carrying food to them, and it is astonishing what a quantity a single bird will find in a very few minutes. One day we sat down on the top of South Cliff, near Worbarrow, and watched the old jackdaws going in

and out with food to their nests: they were scarcely ever away for more than four minutes at a time, and occasionally passed so close to us that we could see their throats quite distended with food. L. shot one of them, a fine old bird with gray head, and on picking him up we were astonished at the quantity of insects which immediately issued from his bill, the majority of them still alive; the greater portion were beetles of four or five species; the remainder were caterpillars, grubs and a large moth: altogether, I should think there was enough to fill an ordinary-sized table-spoon. I have little doubt but that this habit of carrying in the bill a quantity of food, which necessarily distends the throat, has given rise to the idea that the rook (which has also this habit) possesses a pouch at the base of the under mandible.

Swift.—Swifts, as well as swallows, we saw flying about over the cliffs, and from the buoyancy with which we observed the former birds pass under, and remain upon, the arched rock at Durdle Door, we concluded that they breed there. The martins were numerous in the village. No sand martins.

Rock Dove.—Although I was assured that the rock dove breeds on this coast, and that I should have little difficulty in obtaining both birds and eggs, the only pigeons which I saw were certainly not Columbia livia; they were either C. ænas or a cross between this species and the wild dovecot pigeon. They were all similar in colour, and very dark, but in every case I looked in vain for the white tail-coverts—a characteristic and distinguishing mark of C. livia. These dark-coloured pigeons breed in the cliffs, and are known among the fishermen as rock doves, although they are not the true rock dove, C. livia. I will not say that the true rock dove does not occur here, but only that we did not see it between Weymouth and St. Aldham's Head, although out every day from morning till night.

Ringed Plover.—This species breeds on the shingle between Weymouth and Abbotsbury. We saw several of the eggs.

Peewit.—Of the few waders which we observed along this coast in May, the peewit is decidedly the commonest, and at Weymouth we saw several dozen of their eggs, which had been taken within a few miles of that town.

Turnstone.—We saw a pair of these birds, which had been killed near Weymouth during the first week in May, but they had not then acquired their full summer plumage.

Heron.—Occasionally seen along the River Frome, but more common in winter, when they come down to the shore to feed.

Bittern.—Also seen and shot by the River Frome, and we saw one at Weymouth which had been killed in that neighbourhood.

Whimbrel.—While rowing out one morning to look at some lobster-pots, three whimbrel passed within a hundred yards of the boat; they were flying eastward, but never alighted as long as we were able to watch them.

Common Sandpiper.—I noticed this bird in Wareham Harbour, and L. saw one on the rocks in Meups Bay. It is said to be common in Poole Harbour and at Portland.

Snipe.—The snipe breeds at Winfrith, whence I obtained two eggs, and saw several others which had been taken there.

Land Rail and Moorhen.—The land rail appears common around Lulworth; we heard them constantly in the still evenings uttering their strange harsh cry, but as we were not in want of their eggs we did not waste time in looking for them. The same remark applies to the moorhen, which is found along the River Frome, where also, as we are assured, the wild duck frequently remains to breed.

Swan.—A few words regarding the swannery belonging to Lord Ilchester, near Abbotsbury, may be of interest, and perhaps not out of place. In Hutchins's 'History of Dorsetshire,' there is an indifferent catalogue of the birds of that county: with the exception of this there is little to interest the ornithologist, except the account of the swannery at Abbotsbury. As this book was published many years ago, and is now not easily referred to, I have extracted the account of the swannery, which is as follows:—"About a quarter of a mile S.W. from the town is a large decoy, well covered with wood, where great plenty of wild fowl resort and are taken. A little west of the town is a noble swannery, much visited by strangers. In the open or broad part of the fleet are kept six or seven hundred swans, formerly fifteen hundred, or as some say, seven or eight thousand,* including hoopers, or a small species of swan who feed and range and return home again. The water, soil, the fishery called East Flete, and the flight of wild swans, called the game of swans, yearly breeding, nesting and coming there, were held by John Strangeways, Esq., of the Queen (Elizabeth) in chief by the twentieth part of a fee, value £106 7*s.* 4½*d.*, also the site of the monastery, view of frankpledge, and courts leet in Abbotsbury, the flight of wild swans, &c., breeding, &c., in the œstuary or water called West Flete, in Abbotsbury, value £25 0*s.* 8½*d.* The royalty belonged anciently to the Abbot, since to the family of the Strangeways,

* The number of swans is much decreased since Mr. Hutchins wrote. There are now probably not more than two hundred, including young birds.

now to the Earl of Ilchester. 32 Eliz. it was found that from this vill, to the sea by the Isle of Portland is an œstuary, meer or flete in which the sea ebbs and flows; and in it are 500 swans,—410 white and 90 cygnets,—each of the value of 2*s.* 6*d.*, the greater part whereof are not marked, which are in the possession of Joan, late wife of Sir John Young, Kt., &c. Without prescription all white swans in an open river, unmarked, belong to the King by prerogative.* Wherefore a writ was ordered out of the Exchequer to the Sheriff to seize all the white swans not marked, who returned he had seized 400 (Hil. Term, 34 Eliz.). The defendants pleaded that the meer lay in this parish; that the Abbots were seized of the œstuary banks and soil (*solum*) in fee; and that there was time out of mind a game or flight of wild swans (*volatus cygnorum et cignettorum*) haunting there, which were not accustomed to be marked; and that the abbot and his predecessors did breed up (*pullulent*) for the use of the kitchen and hospitality some of the lesser cygnets, and used yearly to mark them by cutting off the pinion of the wings to prevent their flying away; that 35 Hen. VIII., the King granted it to Giles Strangeways, Esq., whose grandson Giles demised it for one year to the defendants." Occasionally the hooper or wild swan is found among them, and may be distinguished by its smaller size and the now well-known difference in the head and bill.

Guillemot and Razorbill.—Both these birds are called "puffins" by the fishermen, and their eggs are considered to be very good eating. The razorbill, however, is scarce compared with the guillemot. One of the chief breeding-stations of the latter bird is a high chalky cliff, near Ringstead, called "Swyre," from the Saxon, signifying a rock or cliff. Here we saw hundreds of guillemots. I was anxious to shoot a pair of them, but found that, notwithstanding their numbers, it was by no means easy to do so: they were too high up to shoot from the beach, and the cliff was too perpendicular to allow of their being killed from above. The only course which suggested itself was to be lowered over the edge of the cliff with a rope and take my gun with me. Accordingly the rope was held fast, and I got a double shot, killing two birds, which fell below, one on the beach, the other into the sea; by going about three-quarters of a mile round, we were enabled to pick up the first bird; the other, which was only winged, swam out to sea and was lost. Our next thought was to get a few eggs of this bird, and our active guide, John Meadon, made three

* Coke, Reports, Part VII., p. 15. The case of swans between the King and Lady Young. Trin. 34 Eliz.

descents in different parts of the cliff, and in a short space of time brought up two dozen. In nesting among the cliffs the mode of proceeding is this: an iron crowbar is driven into the ground, about ten feet from the edge of the cliff; occasionally, if the soil is loose, a boy sits against this bar to keep it steady; to this is attached a rope 150 feet in length, which is then coiled up, and flung lasso-wise down the cliff: this is called the "hand-line." A second rope of equal length is fastened round the body of the climber (or "clifter," as he is called), and made secure by a peculiar knot, which never slips. Two of the party then lower the clifter, who steadies himself by means of the hand-line, and thus proceeds until he reaches the eggs, which he generally stows away in his smock, and then, throwing his weight on the hand-line, shakes the body-line which is held by those above, who at this signal draw him up. Those who have not witnessed it can have but little idea of the risk that is encountered in descending a cliff for eggs, particularly when the cliff is of the nature of those on the Dorset coast: composed of calcareous grit and limestone, the surface is very crumbling, and it is always advisable to shake the rope well before descending, in order to get rid of any loose pieces of rock which might otherwise become detached and fall upon the head of the clifter. It often happens that, notwithstanding this precaution, fragments of cliff fall, and on these occasions the clifter, who is always on the look-out for such a result, kicks against the rock and swings out of the perpendicular, allowing the stone to dash past him. Now and then the man, with all his agility, gets struck, and a short time since an accident of this sort well nigh proved fatal. An inexperienced lad, who had never before descended a cliff, was anxious to make the attempt, and was accordingly let down in the usual way, while our experienced guide, John Meadon, who was considered one of the best clifters in the neighbourhood, assisted two others to lower him. They cautioned the lad to keep his eyes on the rope and look out for any falling stones; but it seems that their advice was disregarded: he had not descended more than thirty feet before a large fragment became detached and struck him across the temple: the blood gushed forth, and the lad trembled and turned pale. As he was over one of the least perpendicular of the cliffs he had gone down with merely a hand-line. In another instant he would have lost his hold and been dashed to pieces, when an act of daring seldom equalled saved him from destruction. Meadon, seeing the lad's danger, without a moment's hesitation, leaped from the top of the cliff to a ledge near him, with his left hand seizing the rope, and placing his right round the lad's

waist, he drew the rope round him and hitched it in a noose; the next moment the lad fainted: had he hesitated the poor fellow would have gone down two hundred feet, and had he missed the rope they would have fallen together. Those above turned pale at the sight, but in a few minutes were rejoicing to see both men safe on *terra firma*, and the lad was restored to consciousness. Such an act of courage is beyond praise. Meadon told me that although he had run some great risks he never lost nerve but once. On that occasion he had descended with only a hand-line to take some guillemot's eggs: he was lowered to a level with them, but the ledge on which they were was just beyond his reach; beneath it was a mound, apparently of sufficient firmness to bear his weight; giving himself a swing, he landed on it, and holding the rope loosely in his right hand to prevent it regaining the perpendicular, he commenced taking the eggs. Without a moment's warning the entire mound he was on went into the sea, and he suddenly found himself hanging by one hand and swinging rapidly round, as he said, "like a leg of mutton upon a jack." It was some time before he could regain his feet, and for once in his life he stood trembling from head to foot at the fate he had escaped; but this feeling was soon shaken off, and he returned to the top of the cliff in safety, but without his eggs.

Puffin.—The fishermen call the guillemot and razorbill "puffins;" the true puffins (*Mormon fratercula*) they call "parrot-bills." This species breeds at St. Aldham's Head, but, owing to the depth of the holes in which they deposit their eggs, it is not easy to reach them; hence they are not so much disturbed. The eggs, moreover, are not considered such good eating as those of the guillemot.

Cormorant.—The cormorant does not appear to be so plentiful in the South as in the North. Two years ago, when at the Faroe Islands, I looked in vain for the shag, where the cormorant was very common; this year, on the Dorset coast we saw at least twenty shags for every cormorant. The latter is easily distinguished from the former when flying by the white patches on the thighs and white cheeks; the shag at a distance looks perfectly black, and is always called the "black shag" by the fishermen. The cormorant is a very wary bird, and seems always on the alert. We had great difficulty in getting near them, and only succeeded in bagging one: this bird gave us a good chase, and caused some little excitement; it was winged at a considerable distance with a cartridge of No. 4 shot, and on touching the water at once dived: our boat followed, and the bird struck out to sea. Those who have tried it know how difficult it is to kill a bird sitting

on the water, from a boat, if there is much wave: all the divers swim very low in the water, and from a boat little else but the head and neck can be seen. An ineffectual shot is fired, the bird dives, and the rowers stretch to their oars: the bird soon re-appears—again a shot—again á miss; the bird dives once more. This time he emerges close to a low island rock and mounts upon a crag: the rowers redouble their efforts; independently of the promised reward if we succeed, the men are getting really excited. We are still more than a hundred yards from the rock: loading this time with loose shot instead of cartridge, and kneeling in the bows with gun in readiness, the distance is rapidly decreased, and the bird appears disposed to wait. We are now about fifty yards from the rock: the bird stretches his long neck, flaps one wing, and takes a header to regain the sea, but a snap-shot takes him between rock and water, and he turns over on his back like a log. The men set up a cheer, and he is triumphantly hauled into the boat. Can there be anything more enjoyable than wild-fowl shooting? Give me a day in the marsh or along the coast, in preference to a week in your pheasant-preserves. The bracing air, real hard work, and, above all, the variety in the bag, place it, in my mind, above every other kind of shooting.

Shag.—After the herring gulls the commonest sea-birds which we observed were the shags, or green cormorants: the fishermen call them "black shags," and so common are they along that coast that, on throwing a stone down from the top of a cliff, we frequently saw twenty or thirty of them fly out to sea: it was impossible to shoot them on these occasions, and as I was very anxious to get an adult bird with a crest, we were obliged to have recourse to a boat. The younger birds sometimes remained on a ledge until we were near enough to pick them off with a cartridge; but so wary were the old ones that they very seldom came within shot. Out of seven which I bagged five were immature birds, but as it was not easy to decide before firing whether a bird at a distance was old or young, we generally fired on the chance of its proving the former. The young birds, which we did not want, the fishermen were very glad to have, to cut up for bait for their lobster-pots, so that we did not consider them uselessly slaughtered. The time of laying with this bird appears to be very uncertain: we saw young birds that could fly, others that could not, eggs and empty nests on the same day! I copy the following lines *verbatim* from my note-book:—"May 28th. At Bat's Head. Found five shags' nests; on the highest the old bird was sitting so close we could not see the eggs; on the next there was a solitary young bird;

on the third an old bird with neither eggs nor young; on the fourth an old bird and three eggs; on the fifth an old bird and two eggs: this last was a beautiful bird, with a fine tuft on its head. While we were looking an old bird returned to No. 2, where there was a single young bird, and after feeding it and resting, flew off again: her mode of feeding it was curious; instead of putting her bill with food into that of her young, as is usual with most birds, just the reverse took place—the young bird inserted its bill into that of its parent, and so took out the food. After throwing about a dozen stones, at last we got No. 1 off her nest, and saw three white eggs. Close to No. 4 a herring gull was sitting, and would not leave her nest. Higher up, between Nos. 3 and 4, another herring gull was sitting; by throwing stones we made her fly, and saw three young birds mottled with brown and some broken egg-shells. The next morning early we proceeded to the same cliff with ropes to try and take some shag's eggs. It was a difficult task; the nests were a long way down (in one instance we let out all our line 150 feet), and the cliff being almost perpendicular, the footing was very insecure. Many persons would have shuddered at the idea of descending such a cliff; nevertheless our daring guide went down, and robbed two of the nests, bringing up six eggs, three of which were fresh and the others incubated. We had previously obtained a few shag's eggs from Durdle Rock and South Cliff, but although obtained a week earlier they were more incubated than those taken further west, at Bat's Head. One morning, out of curiosity, while a fisherman was cutting up for bait some young shags we had killed, I took out the stomachs to examine the contents, and besides the fish of different sizes which I found, I was astonished at the quantity of intestinal worms with which even the young of this bird is infested. We had no spirits at hand, or I should have placed some of them in a bottle for future examination."

Gannet.—The fishermen say that, during the herring season, they frequently see gannets off the coast, and they follow the boats and carry off great numbers of fish.

Terns.—These birds are not found in the same places as the gulls,—*viz.* in the cliffs or on the rocks,—but breed upon the beach between Weymouth and Abbotsbury. We saw several eggs of the common tern and two of the lesser tern, but one of the latter was unfortunately broken, the other I secured.

Gulls.—Previously to starting on our trip I had been referring to various authorities in order to ascertain what gulls we should be likely to meet with on the Dorset coast, and gleaned that the kittiwake,

common gull, lesser blackbacked, herring and great blackbacked gulls were all to be found breeding there in some numbers. I was not a little disappointed, therefore, to see but two species out of the five named. Although we kept a good look out along the cliffs between St. Aldham's Head and Weymouth we saw only herring gulls, which were very common, and a few great blackbacked gulls. I was puzzled to account for the absence of the others, after such positive evidence of their frequenting this coast, but it is possible that they migrate to different quarters in the winter, and had not returned to their breeding-station before I left on the 31st of May.* If this hypothesis be correct, it is remarkable that the great blackbacked gulls should have eggs and the herring gulls young before the kittiwake, common gull and lesser blackbacked gull had even commenced to nest. Both the great blackbacked and herring gulls had eggs on the 15th of May; on the 28th of that month I saw young birds in a nest of the latter species, and the following day took from another nest of the same species a young bird, which had probably been hatched four or five days. Their food appears to be young periwinkles and various species of Helix. It was a noticeable fact that, although we saw several hundred herring gulls, they were all adult birds, and we did not observe a single bird of last year in the mottled plumage. The only way in which I can account for this is by supposing that, after the young are hatched and able to shift for themselves, the parent birds drive them away. One day, while walking towards Worbarrow, we observed some men ploughing, and a large flock of herring gulls in close attendance upon them, evidently feeding upon the worms and grubs which were turned up by the plough; so heedless did they seem of danger that, had we been walking alongside one of the teams, I believe we could have killed two or three at a shot. We killed some very fine old birds by sitting down on the top of the cliffs and waiting for them to come over, when they frequently rose from below and came within shot before seeing us: sometimes they fell below into the sea, and we were obliged to go a long way round to pick them up. On one occasion I had a most exciting chase after a wounded herring gull: the bird fell in a sheltered bay, and being only winged at once swam out to sea. Having fired both barrels, and not having time to load and shoot before it was out of range, I was obliged to be my own retriever, and

* Since writing the above I have heard from my friend (who remained after I had left) that, about a week after my departure, he caught a fine lesser blackbacked gull in a gin, and saw several smaller gulls, which were probably kittiwakes or common gulls.

so stripped and went after it. At one side of the bay the rocks shelved down and ran out for some way into the water: at a little distance lay a long low island-rock, and through the gap between the sea broke in with some little force. For this gap the gull at once made, and I thought if I could only cut him off from the open sea I might be able to turn him towards the shore and come up with him, as he could not fly and made no attempt to dive. We both swam our best, but he was quite "at home," whereas I was "at sea," and as he had obtained a good start before I was ready to follow, he fairly distanced me, and got through the gap into the open sea, where I soon lost sight of him among the huge waves: these rolled through the gap with such force that I preferred to return to the shore rather than run the risk of being dashed upon a rock. Two nests which we obtained of the great blackbacked gull are worth mentioning; instead of the usual colour, the eggs are a beautiful pale blue, in one or two cases marked with faint gray spots, and in others wholly plain, looking more like large eggs of a heron than those of a gull.

J. Edmund Harting.

Kingsbury, Middlesex, June, 1865.

Ornithological Notes from Lanarkshire.

By Edward R. Alston, Esq.

(Continued from page 9654.)

June, 1865.

Kestrel.—Although the usefulness of the kestrel is now generally admitted by all observing naturalists, yet in many places this beautiful bird is still held as an outlaw, to be trapped or shot on every possible occasion. The following experiment may therefore be worth noting:—Five young kestrels were taken from the nest on the 8th of June, and placed in a cage at the foot of the tree. They were about a fortnight or three weeks old, and the light gray down was rapidly giving place to brown feathers, except on the crown of the head, so that they bore a striking resemblance to little irate lawyers in gray wigs; the only food found in the nest was the remains of a water vole. The old birds fed them in the cage for two days, and brought them numbers of mice, but *no* feathers or other remains of birds could be found among the castings. Accordingly, on the third day, the prisoners were unanimously found "not guilty" of poaching, and were restored to the care

of their mother. I do not mean to assert that the kestrel *never* kills birds; on the contrary, I have found the remains of a young peewit in the stomach of one, but I think it is quite certain that they do much more good than harm. I should have observed that the old birds mentioned above showed themselves true falcons in courage and attachment to their young, the hen repeatedly swooping close to our heads and uttering the most piercing cries, which were echoed by her mate, as he hung poised in the air above us. The kestrel is here called the "red hawk"— not an inappropriate name.

Scarcity of Summer Birds of Passage.—Many correspondents of the 'Zoologist' have lately complained of the increasing scarcity of our summer migrants, and particularly of the swallow tribe. I regret to say that this is also the case here to a very marked extent, almost the only exceptions being the willow wren and spotted flycatcher, which are both plentiful. We have no swifts in the immediate neighbourhood, but used to have numbers of swallows and martins, and a few sand martins in suitable places, but all these birds have been scarce these last two or three years. I have not seen a single whitethroat this season and but very few sandpipers. I do not think that a satisfactory explanation of this remarkable fact has yet been advanced; let us hope, however, that the change will not be a permanent one, and that we may again see these "amusive birds" in their wonted numbers.

Tree Pipit.—A rare bird with us; two or three were observed in the beginning of June, one of them a young one.

Bird imitating a Duck.—On the evening of the 12th of June I was surprised to hear the "quack, quack" of a duck at some distance from any probable resort of such fowl, wild or tame, and was still more astonished when I caught sight of the author of the sounds—a bird perched on a tree about fifty or sixty yards distant. I am convinced that it was either a blackbird or a starling, probably the former; but as it stood out against the evening sky we could make nothing of its colours, and, when I attempted to approach nearer, it disappeared into a thick wood and was seen no more. There could not be the slightest doubt as to the bird in question being the mimic; the "quacking" was wonderfully distinct, and indeed quite undistinguishable from that of a drake. More than one instance of wild blackbirds imitating the crowing of a cock are on record.

Spotted Flycatcher.—A nest of this species was found built *on the ground;* it was placed on the bare earth among the exposed roots of

a tree where a bank had fallen away; the eggs were hatched on the 13th of June.

Gray Wagtail.—Gray wagtails have been very scarce this season, very few pairs having been observed. This species, known only as a winter visitor to your more southern correspondents, is here a summer migrant, leaving late in autumn and returning about the sowing time, whence probably its local name of "seed-bird." I can fully confirm Captain Hadfield's observation (Zool. 9500) that the gray wagtail is the most arboreal of its tribe, and also Mr. Jeffery's note (Zool. 9601) that it is the most aquatic.

Great Titmouse.—A nest of this bird was found in a hole in a tree only one foot from the ground. It was composed of sheep's wool mixed with a little moss and a few feathers, and contained seven young ones (besides an addled egg); these had not left the nest on the 16th, and were probably a second brood. Young cole titmice were abroad by the beginning of the month. In its nestling plumage the great titmouse has the cheeks pale yellow, and the black parts dull and clouded.

Hedge Warbler.—A pair of this species have built among some ivy on a wall close to a road. Whenever anyone is within sight the old birds are observed not to betray the situation of the nest by flying directly to it, but first alight on the ground, creep under the ivy, and then climb up behind the leaves to the nest. The young, a second brood, were nearly fledged on the 20th of June.

Wild Duck.—The late Mr. Waterton (as quoted by Yarrell) says of the mallard, "By the 23rd of June scarcely a single green feather is to be seen on the head and neck of the bird." On the 20th of June I had an opportunity of observing a large number of wild ducks at Douglas Castle, and not one of the drakes had lost its nuptial beauty of plumage in the slightest degree. Further observations on the exact period of this wonderful change, at different places and in different years, would be interesting. The large ponds at Douglas are frequented in the breeding-season by numbers of mallards, teal, coots and moor-hens; these birds, being unmolested, are almost as tame as domestic fowls, but if they leave their sanctuary they instantly regain their usual shyness.

Peewit or Lapwing.—Peewits seem to be moulting just now; all that I have observed lately have lost the occipital plume.

Cuckoo.—A cuckoo has so far overcome his natural shyness as to visit the garden daily, for the purpose of feeding on the caterpillars

which infest the gooseberry-bushes, of which he must destroy immense quantities.

EDWARD R. ALSTON.

Stockbriggs, Lesmahagow, June 6, 1865.

Notes on Birds taken during a few Days' Ramble in Craven.
By GEORGE ROBERTS, Esq.

CRAVEN, with all its wonderful natural curiosities, is so well known that it is almost needless to say a word about its physical features or its situation; but, for the benefit of the few who may not have visited it, and for the better understanding of the brief notes below, I may be allowed to remark that it forms the north-western division of Yorkshire, and that the face of the country consists of high, treeless moors, and hills covered with grass, ling or heather, and deep, often narrow and precipitous and partially wooded dales, being, in short, a part of the Pennine chain of hills, which commences in Derbyshire and runs northward into Scotland.

Falconidæ.—The merlin breeds here, but is not so plentiful as it was formerly.

Laniadæ.—Last winter Mr. Ellison, a friend of mine, at Ingleborough, captured a great gray shrike.

Merulidæ.—Dippers are common: a boy that I fell in with had got above a score of eggs: the dipper builds in caves and under bridges, and often down in the sides of the dismal "swallow-holes." The ring ouzel breeds here in numbers, being a true moor-bird: it builds in the wildest parts of the moors: its note is harsh, and is made generally when perching on or flitting from a rock. The missel thrush occurs in the dales.

Sylviadæ.—I saw very few robins. Redstarts are frequent: from my sleeping-room at Clapham, at the foot of Ingleborough, I listened for two hours before six o'clock in the morning, to a short, unwearied, but soft and incessantly repeated bird's song that I was not very well acquainted with, but which interested and amused me much: when I arose I hastened into the back garden, the direction of the sound, to ascertain the author of my entertainment, and I soon found it to be a male redstart. The stonechat, whinchat and wheatear occur in moderate numbers; the stonechat and wheatear mainly on the moors; the whinchat both on the moors and in the dales: I think there is a sort

of family similarity in the songs of the redstart, whinchat and wheatear; they are all soft, short and not much varied. I heard the sedge warbler and the wood warbler in the dales. The willow wren is also heard wherever there is a bit of shade. The reed warbler occurs sparingly. The gold crest breeds here, and stays all the year round.

Motacillidæ.—The gray wagtail appears to be as common as the the pied one here; I found it on the edges of all the streams: its plumage seemed to me much brighter than that of the gray wagtail of the level districts: it is a very vivacious and elegant bird; it seems to be a companion of the dipper, haunting the rocky, retired streams and cascades; it loves the sound of water, and to perch on a wet stone where the spray of water falls.

Emberizidæ.—I heard a single corn bunting at Settle. The yellowhammer is not very common.

Fringillidæ.—The note of the common sparrow is never heard, except in the towns or villages. My friend Mr. Ellison told me he had occasionally shot the tree sparrow.

Sturnidæ.—Starlings are everywhere abundant; every cliff and building has its nest or nests; when I saw them and heard them I no longer wondered at the immense flocks swarming about our meadows in autumn. Last year the gamekeeper at Ingleborough shot a bird from a flock of starlings, which, from his description, must have been a rosecoloured pastor; he sold it to an amateur taxidermist before he had time to ascertain its value; he described it as "a beautiful starling."

Corvidæ.—Rooks and crows are much persecuted on account of their propensity for eggs: under the trees near a small rookery at Malham, I noticed the bones of a calf picked very clean; I was assured that rooks feed commonly on flesh, both in winter and summer. The raven yet lingers and breeds on the wildest and most inaccessible fells. Jackdaws are very numerous, nesting in the high cliffs. Magpies are frequent, and, in common with the rook and crow, are much persecuted by the gamekeepers.

Halcyonidæ.—The kingfisher occurs sparingly; I saw one near Ingleborough.

Hirundinidæ.—When I visited the celebrated Malham Cove* (May 22nd), swifts were there; they nest in the highest parts. Martins build under the ledges lower down, but they had not come. While the swifts

* A concave, semicircular face of rock, nearly 300 feet in height, from under which issues one of the fountains of the Aire.

were wheeling and whistling high above the cliff, I noticed bats hawking backward and forward at the foot close to the face; it was dusk. Swifts breed at Bolton Priory.

Caprimulgidæ.—The nightjar occurs, I believe, in some numbers, about Bolton Bridge.

Columbidæ.—I heard the cooing of the ring dove occasionally; its moaning notes seemed to enhance the solitude of the glens.

Charadridæ.—Nests of the golden plover are frequently found by the keepers. The lapwing is one of the commonest moor-birds; some of the egg-collectors send between six and seven hundred eggs to London annually. The lapwings, when very young, will skulk when any one is in search of them. I was led by the cries of an old one to search in a certain spot, and I perceived a young one huddling close to the ground. I sat down about a yard from it, and it kept its position among the stunted grass all the time I stayed, perhaps half an hour.

Scolopacidæ.—Curlews breed here and are common; they occasionally wheel over the pedestrian's head, after the manner of the lapwings, uttering at the time their singular babbling note. The sandpiper and snipe breed here.

Rallidæ.—I only heard the landrail once; it is found in the dales, but I think it is not common.

GEORGE ROBERTS.

Lofthouse, near Wakefield.

Ornithological Notes from Shropshire. By JOHN ROCKE, Esq.

FEW counties in England are better stocked at the present time with our feathered tribes, and few have been more productive of the rarer sorts, than Shropshire. This may be very easily accounted for from the varied nature of its formation: it abounds in rugged hills, fertile valleys and highly cultivated plains; its rivers and brooks intersect the county in every direction, and it can still boast of large woodlands and wild uncultivated moorlands, as the Longmynd and Clun Forest. The Welsh coast is not more than sixty or seventy miles distant, though, singularly enough, I do not consider the class of birds which usually inhabit the shores of this country at all amongst its richest productions.

Some years ago Mr. Eyton published a short account of the "Fauna of Shropshire and North Wales," in the 'Annals and

Magazine of Natural History.' Excellent and comprehensive as that account was, at that time, I believe now, from the very great interest taken in everything that relates to Natural History, and from the increasing number of collectors, few rare birds escape; and therefore I trust to be able to lay before the readers of the 'Zoologist' a far larger catalogue of rarities, obtained in this county, than has ever been submitted to them before. Of course I do not flatter myself that this short statement of facts can be complete, from the difficulty of obtaining correct information. Many of our occasional visitants fall into the hands of persons entirely ignorant of their value, or even of their names, and are either thrown away or perhaps eaten, or at best consigned to the skill of some local taxidermist, where they probably remain, distorted and uncared for. As it has been my object for some time past to possess the best collection of our British birds that could be obtained by an individual, I have particularly directed my attention to the birds of this county, and I am happy to say that my museum is enriched by many specimens of our rarer birds, killed in Shropshire. Living as I do almost on the borders of Herefordshire and Radnorshire, I shall include in this account any specimens of interest that may have been captured within a few miles of this place, though not strictly "Shropshire-killed;" and I believe the best and simplest way will be to follow the arrangement and nomenclature adopted in the third edition of Mr. Yarrell's 'British Birds.'

Whitetailed Eagle (Haliæëtus albicilla).—Three examples of this fine eagle have been obtained in this county within the last few years, all of them, I believe, in immature plumage; one at Halston, in the possession of Mr. Edmund Wright; another belonging to Mr. Henry Cavendish Taylor, of Chyknell; and a third to Mr. Robert Henry Cheney, of Badger Hall. I may also mention that a fourth was killed last year at Croggen, in Merionethshire, at present in the occupation of Mr. Henry Robertson, C.E.: this was a fine and well-marked example of an immature bird.

Osprey (Pandion haliæëtus).—A fine specimen was killed at Chetwynd, near Newport, belonging to Mr. Burton Borough, mentioned by Mr. Eyton. In October, 1841, another bird was seen for some days frequenting Clun Pool, a piece of water belonging to Earl Powis: after some unsuccessful attempts to shoot it, old Wright, the keeper, succeeded in wounding the bird; it flew off, and, strange to say, fell dead in the stable-yard at Walcot, the Shropshire residence of Lord Powis: the distance traversed must have been at least three miles,

and the greatest portion of it consists of dense woodlands. In 1858 Mr. W. Sparling, of Petton, observed one of these graceful birds at the pool near his house; he placed a trap upon a pole in the water, and succeeded in capturing it; it was beautifully preserved by Mr. Henry Shaw, of Shrewsbury, and for several years remained in his window, an object of attraction to every passer-by.

Iceland Falcon (Falco islandicus).—A pair of these fine falcons visited the neighbourhood of Church Stretton some few years ago, and were eventually shot; they were both in the *brown* plumage of the first year, and probably belonged to the same nest: the female, a very fine strongly-marked bird, is in the possession of Lord Hill; the other, which I fancy is a male, belongs to the Rev. Hugh Owen Wilson, of Church Stretton. I should say they belong to the "Iceland race," but I speak advisedly.

Peregrine Falcon (Falco peregrinus).—From the proximity of the Carnarvonshire coast, where these falcons breed, their appearance in Shropshire is by no means uncommon. I have killed three or four fine specimens near Clungunford, and almost every year the various birdstuffers in the county have several examples for preservation. The females greatly preponderate amongst those I have seen.

Hobby (Falco subbuteo).—This pretty little falcon is, I fear, becoming rare. The last specimen I have seen was killed here, in the summer of 1860, in the act of destroying some young pheasants at a coop; it was a male bird, probably in the second year's plumage.

Redfooted Falcon (Falco rufipes).—One example has occurred near Shrewsbury; in the possession of Mr. Thomas Bodenham, of that town: it is in the brown mottled plumage of the upper figure in Mr. Yarrell's woodcut.

Merlin (Falco æsalon).—Occasionally met with, particularly in the neighbourhood of Shrewsbury, but evidently on the decrease, though they still breed occasionally on the Longmynd.

Kestrel or Windhover (Falco tinnunculus).—Common everywhere, though becoming scarcer every day.

Sparrowhawk (Accipiter nisus).—Still common, in spite of game-keepers and game preservers. Few of our birds of prey exhibit greater boldness or cunning: the pertinacity with which they will carry off a brood of young chickens or pheasants, in defiance of all attempts to shoot or trap them, is well known to most of us.

Kite (Milvus vulgaris).—The days of this fine denizen of our woods and forests are numbered; common as they used to be in every part of this county, I believe at the present moment there are not more

than one or two pairs left. I remember the time when the large woods in this neighbourhood were so well stocked with them that it was no uncommon thing to see a row of them, interspersed with the common buzzard, nailed up against a barn. The great ease with which they were trapped, and the little difficulty in discovering their nests, has accounted for most of them. I am happy to say I possess a very fine pair in an aviary, taken some few years ago in Stokes Wood, at that time a great ornament to the Valley of the Onny, now, alas! cut down and partially cultivated; here they bred for many years. I had a third live specimen from the same wood, which I gave to Lord Hill. It may not perhaps be generally known that the kite, when taken care of and protected from harm, will live to a great age; at the present time I know of one, a pinioned bird, which has lived at large in a garden for nearly forty years, and is still healthy and well: another has survived for twenty-one years, under similar circumstances: both these birds are females, and were taken from the nest, in Walcot Woods.

Common Buzzard (Buteo vulgaris).—The same persecution which has destroyed the kite has worked a still more utter destruction of the common buzzard; except in the more remote wilds of North Wales, I believe there is scarcely a bird now left anywhere. One of the last Shropshire-killed specimens I have seen is in my own collection, obtained from the Wrekin. There is a tame bird in the garden at Longner, near Shrewsbury, the seat of Mr. Robert Lingen Burton, which not only lays two or three eggs every spring, but has a particular fancy for sitting on them. She has once or twice been supplied with hen's eggs, which she has sat steadily upon, and has reared the chickens, evincing all the cares and anxieties of their natural parent. A fact similar to this was mentioned by Mr. Yarrell.

Roughlegged Buzzard (Buteo lagopus).—Very rare in this county: I have never seen a recent specimen. Mr. Eyton mentions one in his collection, killed near Ludlow, and Mr. Henry Shaw tells me of two more, one killed on the Stiperstones, the other at the Vessons Coppice, near Pontesbury.

Honey Buzzard (Pernis apivorus).—I have within the last few days had a beautiful pair of these rare birds brought to me, trapped within two miles of this house. When first seen, on the 2nd of June, they were in the act of destroying a pheasant's nest, and had carried out and broken four or five of the eggs. The keeper who found them at once set a trap, and after a very short time secured the male; the following day the unfortunate female shared the same fate; in her body

was an egg very far advanced towards maturity, and others very little formed; there were also almost unmistakable signs of her having recently laid. I have not the slightest doubt of their having a nest somewhere in the neighbourhood, though I have been unable to discover it. Other examples have been killed at Hawkstone, Downton Castle, Ticklerton, Oakly Park and Mocktree Common.

Marsh Harrier (Circus æruginosus).—The late Mr. Pinches, of Ticklerton, had a specimen of this bird, killed on the Longmynd, but I am not aware of any recently-obtained examples.

Hen Harrier (Circus cyaneus).—I seldom see this bird now, though I possess specimens killed here some few years ago. I believe there are still a few scattered over the county, but they are by no means common.

Ashcoloured Harrier (Circus cineraceus).—Mr. Sparling, the fortunate possessor of the osprey, recorded above, obtained a fine example of this bird at Petton, a few years ago; this was a female. Since that time I have seen another very fine specimen of a male bird in immature plumage, killed near Leominster. There is a stuffed specimen at Oakly Park, which I believe was killed there, but it must have occurred many years ago.

Longeared Owl (Strix otus).—By no means uncommon, though probably frequently overlooked. A good many find their way into the hands of the birdstuffers every year. I have two specimens killed here, though I do not think they often occur in this district.

Shorteared Owl (Strix brachyotus).—More numerous than the last species. Most of our wooded heaths produce this handsome owl in considerable numbers. I have seen them on the Black Hill, above Clun, a large expanse of heather-clad table-land, in the spring of the year, but have never been able to discover their nests. I have no doubt they breed there.

Barn Owl (Strix flammea).—Fast disappearing. That dreadfully destructive practice of making all our handsomer birds into handscreens will, I fear, before long, reduce the race of the poor barn owl to the narrowest limits. When our fields and gardens are overrun with mice and our crops destroyed, this short-sighted policy will become more evident, and the value of this handsome old occupant of our churches, barns and hollow trees will then be appreciated in vain.

Tawny Owl (Strix aluco).—Once very common in all our woods, but of late very much reduced in numbers. I fear, if this persecution

is continued, the hoot of our old favourite, in the long winter nights, will soon become "a thing of the past."

JOHN ROCKE.

Clungunford House, Shropshire,
June 10, 1865.

(To be continued.)

Ornithological Notes taken on the Kish Bank, Dublin Bay.

By H. BLAKE-KNOX, Esq.

TO-DAY (April 15th, 1865), tempted by the rising mercury and the fogginess of the morning, I took a row to the Kish Bank Lightship, which is close on seven miles from the shore. This sand-bank is the favourite resort of our migratory web-footed birds during both their vernal and autumnal migrations, owing to the immense shoals of sand eels which pass over it at this season of the year, accompanied by the cole fish, or "black pollack" (*Gadus carbonarius*), and the grey gurnard, or "knoud" (*Trigla gurnardus*). In autumn the herring fry and their enemies the mackerel and pollack, or "white pollack" (*Gadus pollachius*), supply the place of these fishes.

On reaching the North Burford Buoy, I was agreeably surprised to see a swallow flying for shore: its flight was low and steady, and it was evidently migrating, as no swallow at this time of year would fly so far to sea for pleasure. This hirundine appeared here on the 6th of April.

A wheatear passed my boat, flying in the direction of Howth. I first met with it on the 8th of the month (late).

The guillemot was in great abundance. All adults killed were in full summer dress. The young show no sign of attaining the dark head; the dark feathers are browner than in the winter, otherwise the bird is the same.

A large flock of velvet scoters passed me, flying north.

A fair amount of northern and redthroated divers. It is impossible to get within shot at this season, they flying long out of range. Some northern divers passed close enough to show that they had assumed the black throat of summer. Razor bills *ad libitum*. Adults killed are in magnificent summer dress, the line from bill to eye pure white, as is also the bar on bill; this latter, however, fades soon after death. I did not succeed in killing any young birds, though I saw plenty; all seemed as in winter. The young are very wild at this season; when

a flock is approached they will take wing, leaving the adults. The large flocks are breaking up, the birds appearing in small flocks or paired. One adult shot was still moulting in the head and neck, the chin and part of throat being still in winter feather. I may here state that all our sea-fowl either partially or wholly moult in spring. I quite agree that many birds change colour without moulting, particularly young birds in autumn and winter, but I do not think this is so much the case in spring.

Kittiwakes very plentiful; far more adults than young birds. Adults in full summer dress. Young common gull numerous; no adults. I saw but one blackheaded gull. Numerous herring gulls; young most abundant. Lesser blackbacks, young and adults in great numbers. This is considered a rare gull on our eastern coast, and why I do not know, except that young individuals are considered herring gulls. I meet with it plentifully every spring, summer and autumn. It is scarce in winter.

No end of gannets prowling along close to the water, and occasionally towering into the air to make a dash beneath at some luckless fish. They always tower some twenty yards before diving, as if to give more velocity to their fearful plunge. Mostly adults. Plenty of cormorants and shags. Did not see one puffin, though they breed on the islands.

Thousands of manx shearwaters; they have been passing me incessantly all day in flocks, paired or solitary. I have described the flight of this bird as like that of the martin, but to that of the swift it bears a striking resemblance. It will fly for some distance with the quick strong beat of wing, exactly that of the swift, and will then glide or "sheer" over the water, again to resume the quick buoyant beat, or perhaps to splash along the water, or to disappear beneath the surface, still flying; at all events it appears to do so, for the wings are never closed. The habit of striking the water is thought by many to be mere sportiveness, but it is to pick up some floating substance or small fry, as I have many times seen them do within a few yards of me. They show no signs of fear for man, and will sometimes take up scraps from the boat's side. To see a flock of these birds flying about a boat is a most interesting sight, as they pass each other backward and forward, turning up the breast at one time, showing only the back at another—one dashing along or into the water—another dangling the legs and picking up a scrap of fish in its bill—another swimming like a huge black and white butterfly; here a pack are fishing on the water, diving or splashing, or listlessly swimming round

and round, as if only using one foot, while on all sides they are gliding around you because you have got into a "ball of fry," or perhaps, you are cutting up fish for bait and throwing the entrails overboard. In such cases they are perfectly mute, and the belief of the Turks that they are the souls of the damned is almost pardonable, so restless do they appear, and so intent on seeking for something that they never find.

Postscript.—After three day's cruising in Dublin Bay, I have the following additional notes applicable to the foregoing paper:—Of the shearwater I am tired, the bay is full of them; flock after flock may be passed, lazily swimming, and so indolent that they may be killed with an oar. I hunted several, to get one alive, but could not succeed. One, hunted for upwards of a quarter of an hour, after diving and fluttering four or five yards at a time, at last thought it unsafe to stay longer, and, when once on wing, forgot his laziness and flew like a shearwater, showing he was not incapacitated. In remarking their diving I had grand opportunities. It can scarcely be termed diving, being merely plunges under water; the longest dive was about eight seconds. When a shoal of fry is seen near the surface the birds will settle on the water, swimming with the wings lying expanded. If the fry should be beneath them they will take them by diving, disappearing and rising almost instantly; if the fish "play" at any distance from where they are swimming, they will dash along the surface with wings and feet, literally flying into the water among the fish. When fishing from the air, those remarkable dashes they make along the surface are plunges at some prey; many times I saw them take up pieces of fish this way within oar's length of the boat, and never think of alighting. Their dashing into the water does not seem to impede their flight in the least, though when swimming they rise like coots, very sluggishly, their long wings striking the water for a considerable distance. When alighting to pick up a large piece of food they keep the wings up like a butterfly at rest, and then can rise with ease; I suppose on account of the bones and feathers being then fully charged with air. Before rising, when swimming, if given time, they will expand the wings two or three times, and then rise without much difficulty. The cormorant, shag and gannet will always do this, even when perched on a rock. They swim badly, the breast lower than the stern, and progress by jerks. I never knew these birds to seek their food, when swimming deep, by diving like the true divers; in fact, from the wing is the chief way. No oil exuded from the nostrils

of any I killed, and I had to press some to death; they are also free from any fœtid smell. There seems no young birds at this season, all being in adult dress (one shot had one black-tipped feather in the belly); this inclines me to think they breed at a year old. Yarrell tells us they are rare in Ireland: this does not suit the Dublin and Wicklow coast, where they are always abundant in spring and autumn, and met with constantly in winter and summer. The head and neck in spring is full of white hair-like feathers, with a minute tuft at tip: this constitutes, I think, the only difference in plumage from winter to summer, and is not mentioned by any author I know of.

Saw one Sandwich tern.

Noticed a number of redthroated divers with dark throats; could not get near them. As I stated before, I am convinced that no such thing as a redthroat exists in winter. For the last five years I have spent all my time on the sea, in suitable weather, and never yet shot or saw Colymbus septentrionalis with a red throat, or C. glacialis with a black one in winter; of C. arcticus I have but little knowledge. Would that other ornithologists would enter on this subject—those I mean who can talk from experience, and not merely quote Bewick, &c., or, without taking the trouble to dissect, maintain that all our winter Colymbi are young birds.

Immense flocks of dunlins on that part of the Bull Wall which is covered at high water: they are very tame, always, when frequenting rocks, and on these occasions allow a near approach. With a long shot right and left I killed forty-two; they are certainly Tringa "variabilis" at this season, for no two birds were exactly the same; the great body were in moult; six were in full adult summer dress, most beautiful specimens; the rest varied from three new summer feathers in the winter dress, to perhaps so many winter feathers in the summer dress; some had the black breast and the back nearly as in winter, others two or three black feathers only in the breast. Still this bird is not more variable than any other of the family, all undergoing the same changes, though not so well known as those of the dunlin. The full summer dress and the full winter dress do not vary more than in any other bird. These birds cannot dive like the common sandpiper (*Totanus hypoleucos*); several, though merely pinioned and able to walk about the boat, made no attempt at diving. I have frequently noticed this before amongst all the true sand-frequenting birds, and even the rock (purple) sandpiper (*Tringa maritima*) never dives.

The oystercatcher does dive, but not merely in the way Captain Hadfield suggests, to escape when wounded, but for food. When

frequenting the rocks of the coast their food is mussels, limpets, and the green crab; for this latter food I have seen them dive frequently into the ponds in which this coast abounds. The sandpiper likewise, I am convinced, dives for food—the small freshwater Mollusca, &c. One bird only, pinioned, after being about an hour in the boat vomited up a quantity of minute periwinkle-shells, the fish being digested from them. To judge by the immense amount of feathers on the rocks, the moult must be very rapid, for each tide must wash them clean.

Some cormorants and shags were perched on the sign-posts of this wall.

Saw one great shearwater (*Puffinus major*).

Herring gulls, lesser blackbacked gulls, kittiwakes and common gulls (young) abundant. Saw a few great blackbacked gulls.

Met with a gannet so gorged with sand-eels that he could neither swim nor fly. On shaking him, head downwards, some thousands (the full of a three-quart can) came from the throat alone. If he caught each separately he must have had a busy morning, for they were small fry; I never thought before that they fed upon fry. In the mackerel time we often see them so gorged that they cannot fly; then is the only chance for shooting them, as they are particularly wary, in Dublin Bay, of a row-boat.

A razorbilled auk (adult) still in full winter plumage; black feathers were sprouting underneath.

H. Blake-Knox.

Dalkey, April 25, 1865.

Errata.—On account of the hurried manner in which I wrote my "Ornithological Notes" (Zool. 9610), I find that the printer has made several small, though important, mistakes: if the fault is on my side I am very sorry. Zool. 9610, line 15, for "July feather," read "fully feather," meaning birds not in moult. Page 9612, line 28, read "gau—a—eee," not "gan—a—ece." Page 9613, line 38, read "If the bill," not "If the bird." Page 9614, line 25, read "To look at the feet," not "To look at the lip." Page 9615, line 15, "the bill," not "the bird." Page 9616, 7th line from end, read "that all birds in the old year," not "one year" (meaning winter birds before the new year).—*H. Blake-Knox.*

Notes on some of the Rarer British Birds, &c., seen on the Continent.

By John Gatcombe, Esq.

On the 15th of October last I started with a friend for the Continent, and a most delightful trip we had, passing through France into Switzerland, and over the Alps into Italy, as far as Milan and Turin, taking

the lakes of Neuchatel, Geneva, Maggiore and Como in our route. We certainly set out rather late in the season, but then the weather was so fine, and the autumnal tints so gorgeous, that I really must agree with what is said in some of the Guide Books,—that tourists return from the Continent at least a month too soon, thereby losing all its autumnal glories. I am not going to describe scenery, but I must say that I never shall forget the sensation I felt at the first sight of the snow-clad Alps, as they burst on our view when passing through the magnificent valley of Travers. On the 1st of November we walked over the Simplon Mountain, and although there had been a white frost during the previous night, yet I never experienced a more delightful day, for even at that great altitude we found the atmosphere as calm and genial as it ever is in England at the same time of the year.

Before beginning my notes on the rarer species of British birds we met with on the Continent, may I be allowed to ask if any of your readers have remarked the great number of magpies to be seen in France; indeed, a pair or more might be observed in every other field, and in one I saw no less than a dozen fly off together in a flock on being disturbed by the passing train. I have visited France several times, and from the first was struck with their extraordinary numbers.

When in Paris we made a point of daily visiting the poultry markets in search of rarities exposed for sale, and found the following:—roughlegged buzzard, common buzzard, marsh harrier, ring ouzels, crested larks (which we were fortunate enough to detect among the immense bunches of sky larks hanging on the stalls), little bustards, Norfolk plovers and spotted rails. All of these we purchased, and many a time were we obliged to sit up half the night engaged in skinning our treasures. At a game shop we bought a nutcracker, but this bird seems rare in Paris, as none of the market women knew its name, nearly every one of them calling it a jay. On one occasion I met with a magnificent specimen of the forktailed kite suspended from a stall, but unfortunately without its head; and on asking why it had been decapitated, was gravely told that that they pulled off its head because it bit! This was very vexatious, as a perfect specimen would have been most valuable. Wild ducks of all kinds appeared scarce in the markets, but we saw no less than twelve little grebes hanging at one stall. Among the live birds sold on the quays we found the little owl, scops-eared owl and golden oriole, but the majority of the small owls sold alive in Paris are the least European sparrow owl, which is not identical with the little owl of the British fauna. I was much

surprised to find the cushat or common ring dove so tame in the public promenades of Paris. In the gardens of the Tuileries, for example, they would let you come within a few feet of them, and I was greatly interested one day at the same place on seeing a gentleman surrounded by a perfect swarm of sparrows, which, hovering close to his feet, dexterously caught the crumbs of bread which he threw into the air before they fell to the ground.

On our way into Switzerland we slept at Pontarlier, a small town on the frontier, and whilst looking out of our bedroom window, in the morning, were delighted to see a couple of beautiful black redstarts flitting about the church steeple close by the house; these we watched for half an hour with a pocket telescope.

At Neuchatel we visited the fine Museum of Natural History, and among the birds were pleased to find a specimen of the great auk, now considered to be extinct.

At Geneva, too, there is a very good museum, which we also visited, and among other birds in the markets and game shops of that town, we found heaps of ring ouzels, both young and old, no doubt obtained from the neighbouring mountains. We also bought a fine hen harrier, but observed no grebes on the celebrated lake where once they were said to be so plentiful.

Journeying from Sallanches to Chamouni, we observed, among other insects, several specimens of Colias Edusa and C. Hyale.

At Chamouni we slept, and the next morning took a delightful ramble up the mountains to the Mer de Glace, &c., meeting with the following birds during the ascent. At first we heard the notes of the crossbill, and on looking up observed numerous flocks of those birds flying overhead, but in a little while we had the gratification of seeing numbers alight on the fir trees, clinging to and hanging from the cones in the most extraordinary manner whilst extracting the seeds, the glowing red breasts of the males looking most beautiful, and so intent were they in their occupation that they paid little heed to us, thereby allowing me to make several sketches of their singular attitudes.

Further on we came across some fine black redstarts, and when many thousands of feet up, and far into the snow, there appeared (true to its name) the alpine accentor. These small birds have been observed at an elevation of 11,000 feet in summer, but in winter they seek shelter in the valleys. Although I have killed the black redstart and alpine accentor in England, yet I cannot describe the pleasure we experienced in being enabled to watch the habits of these birds in their native haunts.

We crossed several lofty mountains during our tour, and I was much struck to find that however high fir trees were found, there would be seen the little goldencrested wren flitting among the branches. On the mountain streams we found the dipper or water ouzel so common in Devonshire; and when going through the lovely pass of the Tête Noire, had the pleasure of hearing the rattling notes of and seeing several nutcracker crows.

In the woods at Martigny I captured a fine specimen of that rare British beetle Carabus intricatus, and from thence to Brigne, on our way into Italy, we passed numerous specimens of both Colias Edusa and C. Hyale, and were highly amused with the multitudes of lizards we saw, clinging to, and rushing like lightning up, the walls and sunny banks as we passed along. I was much surprised to find that the common redlegged or French partridge was almost entirely replaced, both in the Swiss and Italian markets, by an allied species, the Perdix Græca, very similar in form and colour, but rather larger, and without the black spots below the dark mark on the neck observable in the French species. I may here also remark that the Italian house sparrow is different from our own. It is precisely similar in habits, but altogether more ruddy in its plumage, and wanting the gray patch on the top of the head, which is of an uniform chesnut-brown.

On the Lago Maggiore we saw the redthroated diver and herring and blackheaded gulls, and in the markets of Lugano and Como we found among the bunches of small birds many black redstarts and dozens of robins and goldcrested wrens, which are actually sold for the table. Mountain finches, too, were very plentiful.

On board a steamer on the Lake of Como we had the pleasure of meeting a party of English ladies and gentlemen, and upon our noticing a butterfly-net in the hands of a lady, were told that they had been searching for insects, and that the most lovely things were to be caught in the proper season, but that it was then too late. However, they had made a very nice collection, which they invited us to see, should we visit Milan. This we accordingly did, and were much pleased with the extraordinary beauty of the collection. Among the butterflies we recognised many of our rarest species; and as for Colias Hyale and the scarce swallow-tail, they were to be counted by scores.

In Milan I saw the rock thrush and little owl in cages, and found the common hawfinch very plentiful in the market and game shops, and in the market at Turin hundreds of tree sparrows, among which and other birds I fished out a specimen of the alpine accentor, for

which I gave about one penny! There is scarcely anything more interesting to me than poking about the different markets in search of birds; and on our arrival at a fresh town almost the first thing we did was to inquire whereabouts the market lay. I fear, however, the people thought us strange customers, seriously believing we ate everything we bought; for one day, when passing through the market in Paris, with a large hawk and other birds in my hands, one of the saleswomen pointed me out to another, and in an under tone (but loud enough for me to hear) exclaimed, "Voila! un petit gourmand."

At Susa, on our way home, I observed that the hills were covered with that exceedingly local British plant, Eryngium campestre. The only bird I saw worth mentioning, when crossing the Channel from Boulogne to Folkestone, was Richardson's skua.

JOHN GATCOMBE.

Plymouth.

The Paddy Bird or Cattle Egret.—Who that has ever travelled in India has not seen the paddy bird, either strutting about by the side of a ploughman as he scratches up the ground (for an old hen would turn up the earth as well), or standing motionless by the side of some tank or pool of water? Woe betide the aspiring young frog who comes up to the surface to see what is going on in the outer world; he is nearly certain of being snapped up and swallowed alive: small fish are served in the same way, and are caught by a rapidity of motion of the neck and bill of the bird, which the eye can hardly follow; seldom does he miss his aim. This bird is very confiding, and allows you to approach within a few yards, as he has very few enemies among mankind, except it may be some novice who is attracted by its milk-white plumage and elegant shape to expend his powder and shot on it, but who finds after all he has got nothing worth eating for his pains. The hawk sometimes catches this bird, but not very easily, for though generally it flies in a slow, lazy manner, yet, when alarmed, it can exert considerable powers of flight. The paddy bird is found all over the plains of India where there is any stagnant water. I have seen it some hundreds of miles in the interior of the hills also. It is a wader, and therefore is only seen in shallow water, near small streams running into rivers, by the side of ponds, and overflowed rice fields, whence its name, paddy being the Anglo-Indian word for rice. It follows the plough for the worms and larvæ turned up, and it attends upon cattle when feeding to catch the grasshoppers disturbed by their feet in the long grass. It appears to have little vocal powers besides a hoarse croak, and when it alights or flies off a tree it utters a sound like the word "Jacob." Its nest is generally built on some tree overhanging water. I have seen a great many of these nests on the trees in an officer's compound at Allyghue: he had the bird protected, and took great interest in it (alas! poor fellow—he was one of the many victims to the Mutiny). The eggs are of a light green white, about the size of a pigeon's; seldom more than two are laid. When the rainy season sets in this bird is very active, and is continually flying about in parties of ten or twenty at a time. I have noticed three kinds of egrets in India; the first the rugulose egret, with a plume of yellowish white feathers pendant from the head; the

second, a size smaller, with the same kind of plumage; and the third, our present friend, who does not boast of quite so elegant an appendage. There may also be some more kinds, but the ornithologist is often mistaken in fancying he has found a new species, when it is only the same bird with a slight difference in its plumage. This bird seems to have a very voracious appetite, as I have seen it catch and swallow thirty small frogs in about as many seconds. The natives say the bird often gets choked by essaying to swallow a frog too large for his gullet. Its way of moving about on land is very graceful, being a walk with a movement of its neck backwards and forwards. It is very peaceful, and allows the common pond heron to fish in company with it, without any misunderstanding as to the rights of fishing. Crows very often take a fancy to bully and teaze him, but he manages to hold his own pretty well with his long sharp bill. Its plumage and shape are too well known to need description.—*T. P. Norgate; Sealkote, January*, 1865.

Ornithological Notes from Manchester.—The following are the only birds of mark which have occurred, to my knowledge, in or near Manchester during the last few weeks:—

Cormorant. April 19th. A fine male specimen. Weight, 5 lbs. 6 oz.; length, 2 feet 8½ inches; without any indications of spring plumage. The bird is sufficiently uncommon with us to render its appearance noteworthy.

Razorbill. April 25th. Four specimens procured. Weights from 1 lb 7¼ oz. to 1 lb 10 oz. All in breeding state. The fishes in their stomachs were so macerated that the species could not be determined with certainty.

Hoopoe. "A very rare bird in this county was killed at Woodhouse, near Ashton-under-Lyne, on Saturday last, by Mr. Benjamin Ashworth."—*Manchester Papers, May* 13, 1865. The above is reported to me as a fine young male in excellent condition, and with a splendid crest. It is about five years since the last was killed somewhat further north.

Crane. A good specimen was killed in May (exact date not ascertained) in the neighbourhood of Stretford.

Gadwall. A pair of these interesting ducks was killed about the same time and place.—*Charles W. Devis; Queen's Park, Manchester, June* 19, 1865.

Correction of an Error.—There is an unfortunate mistake in the heading of my short note at Zool. 9629. It ought of course to have been, "Note on the Redthroated Diver."—*C. R. Bree; July* 5, 1865.

Toads and Cyclas cornea.—In April last I happened to be dredging for shells in a pond abounding in both these animals. While examining the result of one of the draughts, my attention was attracted and my curiosity excited by seeing specimens of the Cyclas moving away. On examination I found that this motion was due to their being attached to the hind toes of the toads, to which they clung with the greatest tenacity. Some of the toads had as many as three shells on each of the hind feet, while the instances in which the feet were entirely free from these encumbrances were very rare. I met with no instance in which the shells were attached to the fore feet. In trying to account for this phenomenon we must remember that the life of the toad is divided into three distinct epochs, two long and one short. In winter he hybernates,

his hybernation being, according to circumstances, either in the mud at the bottom of a pond or some cool and moist retreat upon land. With the increased temperature of spring comes the shortest but most active period of his life—the spawning season, which he passes in the water. After this he leaves the tepid waters of the pond to squat like a bright-eyed troglodyte in the crumbling hollow of some flowery copse. Now it is evident from this that the spawning season is the most probable, if not the only time, at which such an attachment could take place: in winter the shells are closed and the toads inactive, while in summer the two are widely separated, in consequence of the toad having changed its aquatic for terrestrial habits. About the time of my observation the Cyclas begins to climb the aquatic plants, in the axils of which it will frequently run with its valves open and its syphons exserted. If, now, some lively toad in swimming through the plants should chance to thrust one of its hind toes between the open valves of the shells, the sensitive inhabitant would instantly shrink, at the same time closing its valves upon the intrusive member, upon which it will maintain its hold, so long as the toad continues active. When we try to conceive what part this connection can play in the economy of the two animals, we see that the Cyclas thus acquires a more rapid and extended locomotion than it possesses of itself. which perhaps may be a means of its distribution. To the toad one would think the connection must be an unmitigated nuisance.—*John Peers; Warrington, June* 7, 1865.

King Fish in St. Austell Bay.—A specimen of the opah or king fish of Yarrell, the lampris of Couch, was caught in St. Austell Bay last week. I saw it on exhibition here. It was about four feet long and proportionately deep.—*Thomas Cornish; Penzance, June* 20, 1865.

Proceedings of Societies.

Entomological Society.

July 3, 1865.—F. P. Pascoe, Esq., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'Exotic Butterflies,' by W. C. Hewitson, Part 55; presented by W. W. Saunders, Esq. 'Illustrations of Diurnal Lepidoptera,' Part 2, Lycænidæ, by W. C. Hewitson; by the Author. 'The Natural History of the Tineina,' Vol. ix. (Gelechia), by H. T. Stainton; by the Author. 'A Catalogue of the Lepidoptera of Devon and Cornwall,' Part 2, by J. J. Reading; by the Author. 'Resumen de las Actas de la Real Academia de Ciencias de Madrid,' 1862—63; by the Academy. 'Proceedings of the Literary and Philosophical Society of Liverpool,' 1863—64; by the Society. 'The Zoologist' for July; by the Editor. 'The Entomologist's Monthly Magazine' for July; by the Editors.

Election of Members.

Messrs. R. Borthwick, A. D. Carey, W. Cole, H. D'Orville, W. S. M. D'Urban, A. E. Eaton, J. E. Fletcher, A. G. Latham, John Linnell, jun., G. F. Mathew,

A. Mercer, Dr. Colquhoun and Sir William V. Guise, Bart., were severally balloted for, and elected Members.

Messrs. A. H. Hudd, Evan John, E. Meek and Morris Young were severally balloted for, and elected Annual Subscribers.

Special Vote of Thanks.

On the proposition of Mr. Dunning, seconded by Mr. Stainton, a special vote was unanimously carried, returning thanks to Mr. W. W. Saunders for his hospitable reception of the Society at Reigate on the 23rd ult.

Exhibitions, &c.

Mr. Bond exhibited Eupithecia campanulata (*H.-S.*), a species new to Britain, bred by the Rev. H. Harpur Crewe from larvæ found in a beech wood near Tring, Herts, feeding on the unripe seeds and seed-capsules of the nettle-leaved campanula (*C. Trachelium*, Linn.) in August, 1864. See Zool. 9260; Ent. Mo. Mag. i. 142. The perfect insects emerged in June, 1865. Also Eupithecia pulchellata (*Ste.*), bred at the end of May last from pupæ sent to him by Mr. C. S. Gregson, of Liverpool, who found the larvæ on the foxglove (*Digitalis purpurea*).

Mr. Bond also exhibited three specimens of Toxocampa Craccæ, bred from eggs sent by the Rev. E. Horton to Dr. Knaggs; the larvæ fed for the first day on Lathyrus pratensis, subsequently on Orobus tuberosus, and eventually had choice between the last-mentioned plant and Vicia sepium, and fed freely and indifferently on either.

Mr. Stainton exhibited cocoons of Pyralis glaucinalis, sent to him by Mr. Edwin Brown, of Burton-on-Trent, and which were remarkable for their broad and flat form; also larvæ of Cemiostoma Lotella, mining in the leaves of Lotus major, sent to him by Mr. T. Wilkinson from Scarborough: a peculiarity of this species was that the egg, after hatching, was distinctly visible in the mine as a bright metallic spot.

The Rev. Hamlet Clark exhibited a miscellaneous collection of beetles captured by Lieut. Julian Hobson, at various times and in various localities in Central India, whence the insects had been sent in glass tubes by post; and read the following (addressed to the Editor of the 'Ceylon Examiner'), also received from Lieut. Hobson:—

"Sir,—I shall feel thankful if any of your readers could inform me whether the Lampyris, or glow-worms, met with in Ceylon, exhibit any variety in the number of their phosphorescent lights; and if so by how many lights they differ.

"Mr. Milne Edwards describes one species, a native of the hot regions of America, which emits light from certain spots situated over the two or three last rings of the abdomen. The tangun, also a native of America, is described as emitting light from analogous spots over the prothorax. Sir Emerson Tennent, in the second volume of his work on Ceylon, in a foot-note in p. 257, says he has seen the insect three inches long, 'but without a proportionate increase of splendour.'

"I have caught an insect two inches long, and for the number and beauty of its lights I never saw anything to equal it, nor indeed has any European or native to whom I have shown it. The Lampyris in question is of a dirty pale orange colour, and of the thickness of a goose-quill. It can contract or elongate itself at pleasure;

has eleven segments or rings; with the exception of the first and last, is studded with a pair of lamps of more than emerald brightness; constituting in all eighteen lamps, nine on each side, each light being of the diameter of a small-sized goose-quill.

"The insect exhibits slight streaks of black on the dorsum of the first two segments, whilst the common Lampyris has well-marked black lines on the back of all its segments; its habit is sluggish, and it differs from the common variety in this respect. It would bury itself deep in the earth, rendered soft by a free sprinkling of water, and never show itself unless forced out for examination. The common Lampyris would shun the light of day; and at night, unlike its shy neighbour, would stealthily creep out of its hiding-place, and, with tail erect, open the window of its single lamp and shed forth a bright light all round. To examine the new insect, it is necessary to touch it, and then it will curl itself up and impart the resemblance of a ring studded with 'jewelled lamps.' M.

"Gampolle, 15th January, 1865."

With reference to the discussion at the May Meeting (Zool. 9621) on the alleged contemporaneous flashing of the light of fireflies, Mr. Clark read the following extract from a letter received from Mr. Alexander Fry:—

"I can confirm your observation that the fireflies of the genus Aspisoma of Castelnau (corrected into Aspidosoma by Lacordaire) flit at night in great numbers over low-lying damp fields, chiefly near water, emitting light by short flashes at intervals of three or four seconds, the majority keeping time with each other, as if in obedience to the *bâton* of a leader. I think it is only the fireflies of that genus who practise it. The numerous fireflies common in Mexico and North America belong chiefly to the genera Ellychnia and Photuris, whose habits are different, so far as I have had opportunity to observe their congeners in Brazil."

Mr. W. F. Evans said that, in consequence of the late President, Mr. F. Smith, having called attention to Madame Merian's statement respecting the emission of light by the lantern-fly, he had sent a copy of the President's Address (of the 25th of January, 1864) and an outline drawing of Fulgora laternaria to his son, Mr. W. T. Evans, of the Commissariat, at present in British Honduras, with a request that he would endeavour to ascertain the fact: the following was an extract of a letter recently received from him:—

"Belize, 17th May, 1865.

"I have succeeded in my entomological researches about the lantern-fly. I had one given to me (caught here) alive, and I myself saw it giving light. I kept it in a tumbler for about a day, and it sometimes did not give it, but at others it did. The ants have eaten off two of its legs. I must wait for a chance to send it home."

The Rev. Douglas C. Timins communicated the following "Note of a Month's Collecting at Cannes":—

"The month of March being extremely cold for this climate, collecting did not begin this year until April. The gay-coloured Gonepteryx Cleopatra was the first note-worthy capture, and appeared in very great abundance in fields and marshes. I took Papilio Podalirius very commonly on the blossoms of the peach and apricot: when on the wing its flight is rather rapid, and the insect has a curious appearance, darting about head downwards with its long tails up in the air, as it usually does.

Our English 'Bath White' (*Pieris Daplidice*) was common everywhere, and easily known from its congeners by its rapid flight: I mention this because I have read that in the North this species flies slowly; so does Vanessa Atalanta in England, but *not* in the South. Indeed rapidity of flight is, so far as I can learn, characteristic of nearly all the diurnals of Southern France, except Limenitis Candida and the different Thais. Thecla Rubi and L. Candida were very common near wild thyme and cistus, and the pretty Anthocharis Belia, with its green and silver markings, also. I took one Papilio Feisthamelii and a great many different Thais. The only 'coppers' to be seen were Chrysophanus Phlæas and (rarely) C. Helle, or an allied species. Vanessa Io, V. Cardui, V. C-album and V. Antiopa were very common; the latter had white borders invariably, though many were *fresh* specimens, and were occasionally found with their wings not dried, having but just emerged from the pupa: this species, I believe, must be double-brooded in this locality. Of the genus Argynnis, Cinxia, Lathonia and Provencialis (?) were common everywhere; A. Dia much less abundant. The lovely little Polyommatus Hylas, though local, was common where found. Polyommatus Alexis was as abundant as it is in England, and P. Corydon very rare and local (*not* occurring on or near chalk). Colias Edusa was in profusion everywhere; C. Helice, however, was uncommon: I took one true C. Myrmidone—a species which is, I believe, quite new to these parts. Our English 'holly blue' (*Polyommatus Argiolus*) was common on the top of cork trees, and there was also an allied species, which I have not yet been able to identify. Our own Anthocharis Cardamines abounded; but the gay-coloured A. Eupheno (or Southern orange-tip) was exceedingly rare and local. Towards the end of April, Papilio Machaon appeared, and also Hesperia Altheæ and H. Lavateræ. Coleoptera were in profusion everywhere, chiefly Cicindelidæ and Chrysomelidæ; Chrysomela Banksii and C. cerealis were, however, rather rare. Numerous Orthoptera appeared, but none of any rarity. In the beginning of May the lovely Limenitis Camilla appeared on the Ile S^te^ Marguérite; its flight is, if possible, more graceful (though much more rapid) than that of its northern congener, L. Sybilla. In company with this species flew Zygæna Lavenduli, in woody glades where *no* lavender grew, though it was totally absent from the mainland, where there are miles of wild lavender! The pretty moth, Acontia luctuosa, now appeared; also Ephyra omicronaria and various other Geometræ. During the first week in May I explored the mountains behind Grasse: I would advise every collector who happens to be within reach to do the same, for these mountains contain a perfect treasury of entomological wealth. During a few hours' collecting I took seven species of diurnals quite unknown to me, though I am pretty well acquainted with the French Fauna, besides Anthocharis Eupheno and the cosmopolitan Oreina Adrasta, which I have found in various parts of France, Switzerland and Italy. Sugaring is of no use in this 'waste of sweets,' where the air is literally loaded with perfume from acres of orange trees and miles of full-blown roses, and the hills are covered with wild thyme and lavender. Early in May I took Polyommatus Salmacis, which is certainly not a species one would expect to meet with in the South, but the Fauna of Cannes is, as I have mentioned before, very peculiar, comprising northern as well as southern species—*e. g.* Anthocharis Cardamines and Eupheno, Gonepteryx Rhamni and Cleopatra, &c.: I have no doubt whatever but that G. Cleopatra is a distinct species; Boisduval's statement to the contrary has been questioned, and the differences of the larva and of the female (which, though very like G. Rhamni, is yet clearly distinct) seem to establish the specific claim of G. Cleopatra sufficiently. I trust soon to be able to

communicate a monograph of the small but little-known genus Thais, based on personal observations of the species composing it in their various stages. Few as are the species, their synonymy is completely confused. It seems to me that recent authors, and especially Mr. Kirby, in his work on European Butterflies, have rather hastily sunk several to the rank of varieties which a careful personal study would have led them to retain as species. But it is only by observing the *living* insects that we can arrive at the truth in matters of this kind; and if those who have the opportunity would carefully study a single genus each in all the stages of the insects composing it, much of the confusion which exists among the European Lepidoptera might be cleared up. I have myself endeavoured to do this with the genera Thais and Zygæna, and hope soon to submit the results of my labours to the Society."

Mr. W. F. Kirby remarked that, in the work referred to, he had in almost all cases followed Staudinger as an authority.

Dr. Armitage (who was present as a visitor) exhibited the case of a female Oiketicus, into the open end of which were simultaneously thrust the bodies of three males, manifestly with a view to copulation with the single female within. The specimens had been killed and were shown *in situ;* they were from Monte Video, and had been determined by Mr. F. Walker to be Oiketicus Kirbyi.

Prof. Westwood doubted whether the insect was O. Kirbyi, the case of which was, according to his recollection, very different in structure; he believed that it was the habit of the females of this genus never to quit the case, or rather, never to leave the pupa-skin, but to turn the body round within the pupa-skin so as to bring the sexual part in contact with that of the male; in the present case it would appear that copulation had not actually taken place, but the males were destroyed in that position by reason of their extended penes having been caught in the silken or woolly matter which formed the interior lining of the case, and their escape thus prevented.

Mr. Dunning mentioned that, in the year 1850, when strolling in the vicinity of Storthes Hall, Huddersfield, in company with Mr. Inchbald, they had found two males of Micropteryx calthella simultaneously in sexual contact with a single female: unfortunately neither gentleman had any entomological apparatus with him, and the specimens could not be secured; they were, however, carried for upwards of a mile on the dandelion-flower on which they were reposing, but after this interval the contact was discontinued, and the moths flew away. (See Zool. pp. 2501, 2830, 2858, as to this species frequenting the dandelion and other flowers.)

Mr. Bates read a letter from Mr. B. D. Walsh, of Rock Island, Illinois, dated April 22, 1865, from which the following are extracts:—

"I have read your paper on mimetic Lepidoptera with the greatest interest. I am naturally of a sceptical turn of mind, and apt to require rigid proof of everything; but although I had rather a prepossession against the truth of your theory before I commenced reading, I am now quite convinced that you are perfectly correct. Judging from your figure of Leptalis Nehemia, the resemblance in shape of wings—which I find to be a pretty constant character in Lepidoptera—is, if possible, still more remarkable than the resemblance in coloration between Leptalis and Ithomia.

"We have in this country a somewhat similar mimetic analogy between Danais plenippus and Limenitis disippus, insomuch that a certain Professor in a popular book on insects figures the latter under the name of the former! They do not fly in com-

pany, but as the former is strong on the wing, and the latter rather sluggish for a butterfly, may it not be the case that by the resemblance birds have been deceived into the belief that it is no use to pursue it? Plenippus is very common here, Disippus rather rare.

"I have discovered within the last few days that the larva of this Disippus is remarkable for hybernating in the immature larva state in a case made of a willow-leaf, which it first secures by silken cables to the twig. The case is made by cutting away most of the terminal portion of the leaf, and then joining the remaining edges together, so that the whole somewhat resembles the leaves of some pitcher-plants (*Sarraceniæ*). As a rule, with the exception of Hesperidæ, which osculate with Heterocera, the Rhopalocera do not roll up leaves to live in, though Cynthia Cardui makes a rude kind of tent for itself, while the closely-allied Cynthia Huntera, unless my memory deceives me, makes no tent at all. Mr. Lintner, in his paper, Proc. Ent. Soc. Philad. iii. 63, says that he captured Disippus 'early in May, appearing as if it had survived the winter.' It must have been larvæ that had 'fed up' in the spring that produced his imagos. The second brood comes out late in the summer, after remaining only a week or so in pupa, from larvæ which, so far as I have hitherto observed, do not construct any cases to live in, seeing that they have no hybernation to go through in that state. Thus it seems we have a kind of *metagenetic* habit of leaf-rolling, which appears only in alternate generations. I found altogether 12—20 of these larva-cases on Salix humilis, several containing little larvæ, a quarter to half an inch long, several with the larvæ close to or on the empty cases, and one with a dead larva in it. Like the very young larvæ of Papilio Turnus and Asterias they are brown with a patch of white on the middle of the back, so as to simulate the dung of a small bird; but specimens which I am breeding have already moulted into nearly the coloration of the full-grown larva. I know of no other butterfly here that hybernates in the larva state, though there are plenty of moths that do so. Pieris Cratægi is said by Godart to do so normally, and Melitæa Dia and Euphrosyne seem to do so occasionally according to Vaudoner (Westw. Intr. ii. 355).

"I notice that you give the Nymphalide genus Protogonius as mimetic, though, probably for lack of room, it is omitted from your Table (Trans. Linn. Soc. xxiii. p. 503). What genus does it imitate?

"I have been much struck by the statement which you repeat several times, that Ithomiæ copulate only with specimens coloured almost exactly like themselves. This seems to harmonize well with Mr. Scott's fact that the red variety of the primrose is perfectly barren with the common primrose; and that the blue and red pimpernels are also barren when intercrossed, according to Gartner, as quoted by Darwin. We have in this locality Colias Philodice and C. Eurytheme, which differ only in coloration (the first sulphur-yellow, the second a fine deep orange) and fly promiscuously together, yet keep perfectly distinct from each other, intermediate grades and intercrosses not occurring, except in a single instance, *viz.*, I once found a pair *in copulâ*, one sex a true Philodice, and the other with the upper wing only, if I recollect right, coloured as in Eurytheme, the lower wing as in Philodice."

Mr. Stainton referred to 'The Zoologist,' pp. 7563—65, where the history of the hybernation of the larva of the English species, Limenitis Sibylla, in the leaves of the honeysuckle, is given at length by Mr. Newman, from the observations of Dr. Maclean, of Colchester.

The following is extracted from a letter addressed to Mr. F. Smith by Mr. S. Stone, of Brighthampton, near Witney, dated April 29, 1865:—

"Great as was the number of female wasps which made their appearance last spring, and early as was the period at which they commenced their labours, they have this year appeared in still greater number, and have begun work at a still earlier period. The weather to the end of March was bitterly cold, but a sudden change then took place, and a more gloriously hot and fine April I should think was never known. On the 2nd of the month I observed a female wasp out for the first time, and the forcing weather which had then set in soon brought them out in swarms. On their first appearance I as usual began to form suitable cavities in banks, &c., for the reception of nests, and on the 19th I took out from one of these cavities my first specimen; it belonged to Vespa Germanica, and consisted of a single cell at the extremity of a foot-stalk. On the following day a nest of V. sylvestris was discovered attached to a branch of a creeper growing beside a cottage-porch; one covering of this nest had been completed, a second was far advanced towards completion, and a third had been begun. It contained a small comb consisting of nine cells, in six of which eggs had been deposited. This nest must have been begun during the first, or at any rate before the middle of the second, week in April—a period unprecedentedly early, so far as my experience goes. Some idea of the number of queen wasps frequenting the neighbourhood this season may be formed when I state that, sitting quietly for half an hour the other evening upon a spot around which were numerous deserted burrows of the common mole, I observed no less than seven individuals enter these burrows, where each of course had begun to form a nest within a few yards of me; and yesterday (28th April) on examining a portion of the cavities or chambers I had recently formed, I found that as many as thirty-five of them had become tenanted. There were nests of all the four species most generally distributed, Vespa Germanica, V. vulgaris, V. rufa and V. sylvestris; while all around might be seen individuals still in search of eligible building sites."

The President exhibited some young dog-ticks, quite recently hatched from eggs laid in May by the identical female Ixodes which he had taken away from the February Meeting of the Society (Zool. 9503), and which he had mentioned at the March Meeting (Zool. 9542) as having been re-captured when attempting to escape after having been gummed down to a card for a fortnight.

New Part of 'Transactions.'

The first Part of Trans. Ent. Soc., Third Series, vol. iv., containing the commencement of Mr. J. S. Baly's Revision of the Malayan Phytophaga, was on the table.—*J. W. D.*

Erratum.—In the report of the Proceedings of the Entomological Society, June 5, 1865 (Zool. 9642), for "Mr. Bond also exhibited a Saturnia Polyphemus and its cocoon, and a large Ophion which had emerged from the same cocoon," read as follows:—"Mr. Bond exhibited a Saturnia Polyphemus and its cocoon; also a large Ophion and its cocoon."—*J. W. D.*

African Elephant at the Zoological Gardens.—The Zoological Society has been successful in negociating with the managers of the Jardin des Plantes at Paris an exchange of a rhinoceros for a young African elephant, the first, it is asserted, ever exhibited in this country—an assertion, by the way, that seems open to question. The striking differences between the two species are, *first*, the conformation of the forehead, so prominent and vaulted in the Asiatic species, so depressed and retreating in the African; *secondly*, the size of the ears, which are proportionately twice as large in the African as in the Asiatic: these discrepancies arrest the attention of the most superficial observer. When this little elephant is fed or noticed in any unusual manner, he moves his ears forwards almost at right angles with his head, when they have somewhat the appearance of the wings of a butterfly: a photograph of the animal in this attitude would be a great acquisition if he could be induced to remain quiet during the operations of the photographer.—*Edward Newman.*

The Dead Sea.—It is often said that no one is as black as he is painted, and I trust you will permit me to say a word on behalf of the Dead Sea. The name of "Dead Sea" is a modern, or rather mediæval epithet. To the ancients it was simply the "Salt Sea;" to the Arabs it is only "Lot's Sea" (*Bahr Lut*). My friend Mr. Grove, of Sydenham, in his able and exhaustive essay on the Salt Sea in Smith's 'Dictionary of the Bible,' has fully disproved the popular notion of its being a sea of death; and there is no man living who is more thoroughly master of every question of Palestine geography. During the past year I spent many weeks on the shores of the Dead Sea. I walked round a great portion of it, and examined every nook and cranny of the cliffs which enclose it. The climate is perfect and most delicious. At no place in the world could a sanatorium be established with such prospects of benefit as at Ain Jidy (Engedi). Baths hot and cold, salt and mineral, with luxurious shade, cascades and purling streams—everything but security for life and property is there. There are many spots near the sea where fresh-water streams flow throughout the year, and where sweet water bubbles up within a few feet of the salt shore. I may mention, besides Ain Jidy, Feskhah, Terabeh, Um Bagkek, Callirhoe, the Arnon, and, above all, the Safieh, at the east side. Wherever these occur there is a prodigality of life, animal and vegetable, to the very shores of the sea. I collected 118 species of birds, several of them new to science, on the shores of the lake, or swimming or flying over its waters. The canebrakes and oases which fringe it are the homes of about forty species of Mammalia, several of them animals never before brought to England; and innumerable tropical or semi-tropical plants, of Indian or African affinities, perfume the atmosphere. The rich plain of the Safieh is cultivated for indigo, maize and barley to within a few feet of the water's edge, and the date palm still waves over the mouth of the Arnon and the Zerka. The bitterness of the water of the lake itself is simply due to the saturation from the great salt mountain of Usdum at its southern extremity, and to the many hot sulphur springs which stud its shores. This saturation of salt and sulphur soon destroys the fresh-water fish which enter the sea in shoals, and supply food to the three species of kingfishers, the gulls, ducks and grebes, which may be seen and shot on all parts of the lake. Let not, therefore, the traveller be deterred from extending his investigations round the Dead Sea shores. He will find abundance of life to repay him if a naturalist, of varied scenery and wondrously painted skies and precipices if he is an artist, and night after night he may pitch his tent by springs of sweet water.—*Rev. H. B. Tristram* (*Greatham Vicarage, July* 27, 1865) *in the* '*Daily Telegraph.*'

Black Water Rat near Chichester.—On the 22nd of May last I shot a perfectly black specimen of the water rat (*Arvicola amphibia*): it was not quite full grown. It rather remarkable that on the 21st of May, 1863, I shot a full-grown specimen within a hundred yards of the place where the first-mentioned specimen was obtained, and I have seen one other on the same stream; so that we appear to have a black race of the water rat in this locality. Is not this unusual?—*W. Jeffery, jun.; Ratham, Chichester, July* 6, 1865.

Notes on the Quadrupeds of Lanarkshire.

By Edward R. Alston, Esq.

(Continued from page 9648).

Mole.—I have this summer succeeded in keeping a mole alive in confinement for nine days, and paid much attention to its habits during that time. I must begin by observing that there are certain small semi-circular areas outside the ground-floor windows of this house; these are about two feet deep, and being lined with stone form capital traps for small animals, which fall into them and cannot get out again. Into one of these hollows the mole must have fallen on the night of the 6th of July, in the course of the nightly rambles on the surface to which these animals are partial in summer. Next morning I was told of the prisoner, and found him running about at a quick pace with a serpentine sort of motion, turning his head from side to side, and trying in vain to burrow through the thick bed of gravel which forms the floor of the area. A few spadefuls of earth were then put in a corner, into which he speedily retired, and here he lived until the 15th of July.

This mole was a living confirmation of the character given to the species by former observers, of being the fiercest, boldest and most voracious of animals. At first I gave him a number of earthworms, which disappeared into the heap of soil and were never seen again. Before many hours had elapsed the mole found that there were no more worms to be had, and, coming out of the earth, wandered about seeking what it might devour. A very large frog (*Rana temporaria*, var. *Scotica*, Bell) was then put into the area, and a remarkable scene soon took place. The mole rushed at the frog, seized it by the hind leg, and tore at the muscles of the thigh with the greatest ferocity. The poor frog screamed piteously, and made several frantic leaps, dragging the mole after it, for the latter retained his gripe with all the pertinacity of a bull-dog. At last his hold gave way, and the frog continued to leap about, bleeding freely, while the mole seemed to be

quite mad, turning rapidly round and round, and sniffing at the blood-stains on the gravel. Another similar attack then took place; but the scene now became too painful, and the poor frog was put out of pain by a blow on the head. The body, still moving convulsively, was thrown close to the murderer, who now appeared to be possessed of a devil; he literally *danced* round his victim, worrying and biting at the skin of the belly until he tore it open, when he feasted sumptuously on the entrails. He afterwards ate several smaller frogs, but refused to touch a small toad which was offered him one day; he smelled at it, but turned up his nose, as if in disdain.

After this the mole was fed principally on raw meat, dead birds, &c., and the quantity of food which he would eat in one day was astonishing, more than his own weight, I am sure. During the first three days he disposed of about three or four dozen earthworms, the large frog already mentioned, a quantity of raw beef, the body of one turkey-pout and part of a second, and one or two black slugs. If the piece of meat was not too large he often buried it, and this was always done in the same manner: he dragged the fragment to his heap of soil, then dived under ground at one side, turned himself, thrust out his head, and pulled down the food after him. When he fed above ground his attitude was strikingly unlike the usual representations of moles in books; his head was drawn back, his back arched and his hands or fore paws turned inwards and downwards to hold down the fragment, at which he tore with his little sharp teeth. Like the celebrated "fat boy" in 'Pickwick,' he sometimes fell asleep over his food, and woke with renewed appetite: generally, however, he retired under ground to sleep, coming out to feed every few hours. He was supplied with a vessel of water, sunk in the gravel, and drank frequently; sometimes he was seen to run through the water and splash about in it.

The sense of smell is generally stated to be very keen in this animal, but in the present specimen it did not seem to be well developed; he would often puzzle round a piece of meat for some time before finding it. It is said that moles press out the earthy contents of worms before eating them, but as mine always took them beneath the surface I cannot confirm the observation. The most amusing thing was to see him dive into the earth; first he grubbed a hole with his snout, then a few powerful strokes of his digging paws concealed the fore part of his body, and then his hind feet gave a kick in the air and disappeared. Such was his boldness that he would bite at a stick if held near him, and if touched behind he would turn fiercely round. When angry or

alarmed his voice was a pretty loud and extremely shrill squeak, not unlike that of his relatives the bats and shrews.

He seemed in good health up to the afternoon of the 15th of July, on the morning of which day he ate sixteen white slugs, which had been caught for his benefit. In the evening he was observed to be gasping for breath and unable to run about, and soon after he expired. Dissection not affording any clue to the cause of death, I am inclined to attribute it to the want of proper protection from the heavy rains which fell about that time, and which saturated his little heap of earth. In a state of nature these animals probably burrow deep into the earth in wet weather. If any of your readers are inclined to keep a pet mole I would recommend them to protect it from the rain, and to give it plenty of raw meat and water, and an occasional supply of worms, snails, &c. To feed so voracious a little brute entirely on earthworms would be difficult, for as many as can be obtained in an hour's digging are disposed of at a single meal.

Diseases of Rats and Mice.—Mr. Gunn mentions a curious case of a rat suffering from some extraordinary skin disease (Zool. 9645); these animals seem to be very subject to such complaints, and especially to tumours, of which Mr. Buckland has met with very many cases ('Curiosities of Natural History,' first series). A few years ago (in the spring of 1860, I think) a skin disease was epidemic amongst the house mice in Glasgow, and was fatal in many cases; it attracted a good deal of attention at the time from a fear that it might be communicated to human beings. Last September I examined a wood mouse (*Mus sylvaticus*), which had a fatty tumour as large as a pea lying under the skin; and, three years ago, a friend of mine killed a mole in Germany with a large abcess on its back.

EDWARD R. ALSTON.

Stockbriggs, Lesmahagow, August 1, 1865.

Ornithological Notes from Lanarkshire.

By EDWARD R. ALSTON, Esq.

(Continued from page 9681.)

JULY, 1865.

Gray Wagtail.—On the 6th of July I observed a pair of gray wagtails sitting on a rail; they were springing into the air at flies and returning to the same perch again, exactly like the spotted flycatcher.

I have since noticed this habit several times, but do not recollect having remarked it before in any species of wagtail.

Sky Lark.—Several instances are on record of larks removing their eggs or young when the nest has been disturbed. On the 9th of July four young larks were found in a rudely scraped hollow in the ground near a bunch of rushes in which the original nest was placed. It had been flooded by the recent heavy rains, and the young birds must have been removed by the parents, for they were not able to move of themselves.

Cuckoo.—On the 9th of July we also found a meadow pipit's nest close to the young larks just mentioned. It contained three pipit's eggs and one cuckoo's; the latter differs from Yarrell's description of "pale reddish gray," being of a light greenish colour, spotted with dusky brown, the size 10½ lines in length by 8 lines in breadth. Although the embryo was quite formed it would not have been hatched for about another week, and according to Dr. Jenner's dates (as given by Yarrell) the young bird would not have been able to support itself until about the middle of September. The latest cuckoo's egg mentioned by Mr. Morris is one which was found by Colonel Montagu on the 26th of June. Last year I recorded finding a large mass of vegetable fibres in the stomach of a young cuckoo (Zool. 9282 and 9329); yesterday (July 31st) I examined another young specimen, whose gizzard contained the eggs and remains of insects, and *again* a small quantity of fibres similar to those found last year. I enclose examples of the various forms for you to examine.

Wood and Willow Wrens.—On the 10th of July I picked up a young male specimen of the wood wren, which had killed itself by flying against one of the windows; I find also that a young bird in my collection (killed last summer) belongs to the same species. It would therefore appear that it breeds regularly with us, although its nest has not yet been found here, and I am informed on excellent authority that it has been found sparingly in various parts of Lanarkshire, although nowhere plentiful. The willow wren is much more numerous; it bears the local names of "wheetie" and "wheybird," the latter of which Jamieson wrongly assigns (in his 'Scottish Dictionary') to the wood lark, a very rare bird in Scotland; he also suggests that "whey" is allied to the Islandic "heide," a wood, which appears rather a far-fetched idea; more probably the name is a corruption of "haybird," from its building amongst grass.

Peewit.—These birds commenced to flock together about the 17th of July, but are not yet assembled in large flocks.

Robin.—Last year there was a discussion in the 'Zoologist' as to whether robins retire from the neighbourhood of houses in summer. Here, at least, there can be no doubt of the fact. At this season they are mostly to be found in the depths of the woods, but even there they seem to lose none of their impudent familiarity; when lying in wait for wood pigeons I am daily visited by a family of robins, who appear to take a great interest in every movement. I can confirm Mr. H. Osborn, jun., in his remark that the redbreast swallows rowan-berries whole; they also dispatch blaeberries (or bilberries) in the same fashion.

Wood Pigeon.—The flocks of wood pigeons which I mentioned in May (Zool. 9573) arrived about the 27th of July, and have been feeding busily on the blaeberries ever since. One shot on the 29th of July had the crop fully distended with the curious seed-vessels of which I enclose a few examples. This bird showed a remarkable instance of muscular irritation; its head and neck were literally riddled with shot, and yet, after a few convulsive movements as it lay on the ground, it raised one of its feet to its head and scratched it gently, first on one side and then on the other; then a shudder ran over the body, and it lay motionless. [The seeds were those of Cerastium arvense.—*E. N.*]

EDWARD R. ALSTON.

Stockbriggs, Lesmahagow, August 1, 1865.

Ornithological Notes from North Yorkshire.

By JOHN RANSON, Esq.

Cuckoo.—The cuckoo was first heard at Linton on the 9th of April.

Swallow.—A pair of swallows that had for some years built in a cow-house were first seen on the 16th of April. They were the first that were seen, as far as I can ascertain.

Pied Wagtail.—These beautiful and useful little birds generally leave North Yorkshire at the latter end of September or beginning of November, and make their appearance the first week in March—a time when spring beans are generally sown: "Sow beans when the wagtail comes" is one of our pieces of "folk-lore." This winter (1864-5) they have never left us; several flocks have wintered in our village; they have dwelt among the sheep on the turnips, and appeared quite lively and gay. The shepherds tell me that they have chiefly fed on the wire-worm, which has been abundant among the turnips

during the last year. The grub of the cockchaffer (*Scarabæus Melolontha*) has also been very abundant, and has done considerable damage to the potato crop, by eating into the tubers and spoiling the sample: in digging my garden this season I have dug hundreds up; my potatoes were quite disfigured by them.

Sand Martin.—Half a dozen of these summer visitants were seen hawking over the Yorkshire Ouse on the 9th of April.

Yellowhammer.—The "goldy" of the Yorkshire lads is a very late builder; I have frequently found the nest and eggs as late as October; last year I found a nest, with four eggs, the first week in September, and some years ago I found a nest, with young ones, the first week in October, in a hedge on the high moors of Yorkshire.

House Sparrow.—There is a peculiarity about the pairing of house sparrows that I have never seen in print. In our village it is the custom to buy sparrows; female birds were a halfpenny each and male birds a penny; so that all the males were destroyed that could be got. The sportsmen used, when the birds had paired, to shoot the male, and it was invariably the case that the female found another mate, who generally fell a prey to the gun; in this way I have known a female widowed seven times and seven times to supply herself with a mate before she would forsake the place so fatal to them.

Missel Thrush.—On the 8th of May I made a careful examination of the nest of a missel thrush; it was placed on the fork of an apple-tree, and owing, I think, to the frequent interruptions during the lambing season, the nest with four eggs was forsaken. A foundation of soft mud had been laid on the tree, and upon this the nest was built; the outer portion was composed of twigs of Scotch larch, interwoven with sheep's wool, and the whole was lined with blades of grass, neatly, compactly and smoothly laid; the wool nearest to the edge of the nest hung in large locks, and made the nest very conspicuous, but no portion of the wool was used in any other way than interwoven with the sticks that formed the outside of the nest. This bird seems to like a fringe hanging round the edge of the nest. A good housewife on the high moors hung her lace collar out to bleach and dry; when it was wanted it was gone, nor was it found until it was discovered interwoven with a missel thrush's nest. A young girl in our village also lost several yards of lace, some white silk ribbon and a worked collar, which had been hung on the garden-hedge and some gooseberry bushes to bleach; about a fortnight after a missel thrush's nest, taken in an orchard near to the garden, was brought to me; the lace, ribbon and collar were woven among the outer sticks, and hung

in festoons about the nest, as the wool did in the first case. In both instances it was the fringe of wool and of lace and ribbon that made the nest so conspicuous.

JOHN RANSON.

York, June, 1865.

Ornithological Notes from North Lincolnshire.
By JOHN CORDEAUX, Esq.

(Continued from page 9663).

JUNE AND JULY, 1865.

Blackheaded Gull.—Were it not for these gulls June and July would be almost barren months in Humber Ornithology. Day after day I have carefully examined with my landscape-glass the dreary mud plains left exposed by the falling tide, and with the exception of blackheaded gulls, an occasional curlew or a small flock of dunlins, have not seen a trace of bird-life. The peewit gull is unquestionably the gull of the Humber, far surpassing in numbers any other species frequenting these shores. They are much more numerous, however, during the spring and autumn than in the winter months. During the last week in May and early in June these gulls will return to the marsh district adjoining the Humber, coming from their breeding-places on the inland meres. At first a few old birds make their appearance, these daily increase in number until they amount to considerable flocks; these flocks, however, consist entirely of old birds, and it is not till about the last week in June that the young gulls arrive; by the first week in July they attain their maximum. Any day in this month flocks containing several hundreds both of young and old birds may be seen in the marsh district. They invariably prefer a dry and level fallow field; here they will often continue all day, basking in the bright sunshine, day after day returning to the same spot, which in time, from the quantity of feathers scattered about and the slight inequalities of the surface made by the gulls, resembles the place frequented by a covey of partridges. The gulls always sit with their heads turned to the wind. In rainy weather, and at such times when the fallows are wet, they resort to the grass lands. It is a pretty sight to see a flock of these gulls thus nesting; their pure unsullied plumage and dark brown heads contrasting with the bright green herbage. From not being molested they are unusually tame, frequently permitting me, when on horseback, to approach within a

short distance and inspect them. They are often seen, in company with rooks, following close to the heels of the ploughmen, to pick up the worms and grubs turned up with the fresh soil. Before rain and stormy weather they become much shyer, remaining for hours together on the wing, wheeling and screaming over the marshes, often ascending to a great height and as rapidly descending again and performing a variety of antics; often at such times leaving the marsh district and going far inland to the wolds. This wild play of the gulls is always a certain indication of rain, and I have frequently been able, from this sign alone, positively to predict a change in the weather; they are certainly most unfailing weather prophets. After July they do not resort much to the marshes, preferring the Humber and its muddy shores. Hundreds may now be daily seen on the flats. They will not leave the neighbourhood till late in the autumn, at which time the greater part move southward, some few only remaining with us throughout the winter.

Lapwing.—June 25. Many lapwings remain in the open marsh districts throughout the year, in the autumn receiving immense additions to their numbers, and except in severe frosts continuing in the neighbourhood during the winter months. They are eminently gregarious, and are seldom seen in pairs, except during the six or eight weeks of the breeding season. When the young birds can fly several families will unite together, forming small flocks containing twenty or thirty birds. By the middle of July these smaller flocks pack together, forming one great assembly, containing hundreds and often thousands of lapwings. On the 13th of July I put up one such flock from a piece of rough fallow land containing many hundreds of them, probably the collected broods of this district. In severe winter weather and towards spring these large flocks break up into subdivisions, and again in the latter season into pairs. Some of the young broods do not, however, get off before the end of July; probably in these cases the first nest has been destroyed, as is frequently the case in the cultivated districts, by some of the many processes of agriculture. Waiting the other day under a bank for the chance of a shot at some wood pigeons, I was attracted by the vociferous clamour of a lapwing, evidently extremely desirous for me to change my quarters: from the extreme solicitude of the poor bird I knew the young were not far off, and on looking round saw, almost within arm's length, a young peewit, rather more than half grown, crouched amongst the grass; on my touching it, it made no effort to escape, merely crouching closer to the ground; taking it in my hand it exhibited no alarm, only following with its bright dark

eye the now frantic evolutions of the old bird. When set at liberty it ran off rapidly for a few yards, and then stopped and commenced feeding, totally regardless of my presence, picking up what I supposed were minute insects from the ground and from amongst the blades of grass. This tameness in a more than half-fledged bird was in striking contrast to the wild and wary conduct they usually exhibit on the approach of man.

Whimbrel.—These birds are this year unusually early in their return south. I observed several about the flats during the first week in July, and on the 14th a flock containing eight or nine birds.

Landrail.—On several occasions during the spring and summer I have been surprised to hear landrails calling in the low meadow lands bordering the stream in this parish. This is the first occasion that I have heard their call in this district, although it is no unusual circumstance, when shooting in the autumn, to flush them in the turnip-fields: we have at that season considerable arrivals of these birds on their passage southward. I do not know of any instance in which the nest has been found in the marsh district. I am so frequently hearing their well-known call during this summer, it is probable that this season may be an exception, and that some have bred in the neighbourhood.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
August 1, 1865.

Ornithological Notes from West Sussex.

By W. JEFFERY, jun., Esq.

(Continued from page 9602.)

MAY, 1865.

Arrival of Summer Migrants during the Month.—Turtle dove, on the 4th of May; nightjar, on the 6th; spotted flycatcher. on the 8th; swift, on the 13th; redbacked shrike, about the 16th. The last-named bird is extremely scarce this year—in fact, has been getting so for some years past.

Land Rail.—The land rail is very irregular in its appearance here in the spring, coming in greater numbers some years than others. This year they have not been numerous. The first I heard was on the 8th of May; this is later than usual. They breed sparingly every year in some of the uplands; but, so far as my experience goes, not

near the coast; consequently I have not much opportunity of observing their habits.

Sand Martin.—Numerous from the 10th to the 19th of May, though they do not breed in this immediate neighbourhood.

Swift.—About thirty seen on the 13th of May: they appeared to be taking a northerly course.

Grallatores.—The migratory birds of this order have in general been scarce at Pagham Harbour during the spring migration this year. I have not seen or heard of a greenshank or bartailed godwit on this part of the coast, and very few gray plovers have appeared; I saw one on the 20th of May, apparently in full summer plumage, but too wild to allow me to get within shot of it. The dunlins had nearly all disappeared by the 13th. A knot, partly in the summer plumage, was shot, and one curlew seen, on the 13th. Flocks of from ten to thirty or forty whimbrels have remained about the coast throughout the May month. I was agreeably surprised in meeting with a pair of Kentish plovers at Pagham Harbour on the 20th: I am not aware that they have ever been detected here in the breeding season before, and very rarely at any other time of the year; I am satisfied, however, that I have made no mistake in identifying the bird, as I had a good view of one, at about one hundred yards, through my pocket telescope: their manners very much resembles those of the common species (Charadrius hiaticula) in the breeding season, showing signs of great uneasiness, as if they had eggs near at hand, whenever I was near their haunts. It is not improbable that there might have been more than one pair on the beach, as I saw them at both ends of the bed of shingle which divides the harbour from the main sea, and which is perhaps more than a mile in length. I hope to see more of these birds in the autumn.

Redthroated Diver.—I am much obliged to Captain Hadfield for his reply to my query respecting the changes in the plumage of this bird. I had already referred to Montagu, but my own observations had led me to think differently from him. Montagu does not state at what time during the winter of 1795 the specimen from which his description was taken was obtained: it might have been in October, before the moult would have been commenced. The three specimens which I mentioned (Zool. 9580), having the red patch, were all killed in Pagham Harbour: No. 1, on the 5th of May, 1860, in perfect summer plumage. No. 2, on the 23rd of October, 1862; in this specimen the red patch, as well as the slaty plumage of the neck, has white feathers intermixed: these two specimens are in my own

collection. No. 3 I saw in the flesh on the 3rd of November, 1862; this bird had only a small patch of red, scarcely an inch in diameter, which, as well as the gray or slaty plumage, was much intermingled with white feathers. In the Chichester Museum I find another specimen in summer plumage, excepting some white feathers about the base of the bill; this bird, a female, was obtained at West Wittering on the 1st of November, 1862. Judging from these four examples, it would appear that if adult birds do lose the red patch in winter,—and this can scarcely be doubted after reading Mr. Blake-Knox's article (Zool. 9610),—the moult is commenced about the latter part of October, and that the summer plumage is fully regained by the first week in the following May, or perhaps earlier, thus giving a period of six months for the two moults. Is it not probable that the second change is merely a change of colour and not a moult?

Great Northern and Blackthroated Divers.—In answer to Mr. Blake-Knox's question (Zool. 9611), "Did any reader of the 'Zoologist' ever shoot a summer-plumaged bird in winter?" the adult female great northern diver recorded in the 'Zoologist' (Zool. 9449),—killed on the 6th of December, 1864,—was in perfect summer plumage, *with this exception*, nearly all the black at the upper part of the neck was much intermingled with white, giving it a gray appearance, the throat being almost white, and shading off to black near the rings which encircle the neck. There is also in the Chichester Museum an adult female blackthroated diver in about the same state of plumage; this specimen was obtained in the canal basin at Chichester, in December, 1836.

June, 1865.

Swift.—On the 11th I saw about thirty swifts, and on the 25th counted more than fifty, at about eight o'clock in the evening, flying from east to west, in scattered parties of from half a dozen to twenty. I should imagine that there are at least twenty to thirty pairs breeding in the tower of Bosham Church this year, and the greater part of these have nests in such inaccessible places that they are not likely to be disturbed.

Little Stint.—I had two of these birds, male and female, sent from Pagham Harbour on the 16th of June, and I am told on good authority that a flock of about forty was seen at a large sheet of water near Chichester, where ballast has been dug by the South-Coast Railway Company, and now known as the "ballast hole." Two of these birds were shot on the 14th of June.

Gulls.—Saw a large flock of gulls in Chichester Harbour on the 10th of June; these were all immature birds; I should say principally great blackbacked and herring gulls.

Stormy Petrel.—One sent from Sidlesham on the 6th of June. This bird was obtained off Selsey Bill by a man who was out there for the purpose of hauling lobster-pots. This specimen was a male.

JULY, 1865.

Tawny Owl.—The young tawny owl taken on the 23rd of April has now (early in July) about attained its full plumage, having lost all the long downy feathers with which it was clothed. He is very fond of washing in a pan of water put into his cage for that purpose, and he very often drinks a little before commencing his ablutions. I have never heard this bird hoot.

Swift.—The town of Petworth seems to be rather favoured by this species. I was there for a few hours on the 8th of July, and I think I never saw so many swifts at once as I did then. The air appeared to be full of them. There certainly is no decrease in the number of swifts in West Sussex.

Stock Dove.—On the 15th of July I saw a bird of this species, which, together with several of the common ring dove (or "wood pigeon," as it is here called), had been recently killed in a field of peas.

Stone Curlew.—July 14. Had a young bird of this species brought me by a labourer who had caught it on the downs. It had not quite lost all its downy first plumage, and the primaries being very short it could not fly, so I turned it down in a walled-in garden, where it remained and did well for some time. One morning, however, on going to look for him, I found him drowned in a fountain-basin. He was very shy all the time that I had him, always squatting instead of running on my coming near him. He used to utter a whistling cry frequently in the morning and evening, but was quiet during the middle of the day.

Waders.—Some of these birds are again making their way for the south. I saw some whimbrels in Chichester Harbour on the 17th of July, and about the third week in the month curlews and redshanks were shot at Sidlesham: the latter bird is very numerous there, and I am told in large flocks.

Gulls.—On the 17th of July there was a pretty good number of gulls in Chichester Harbour. They seemed to be principally immature

blackbacked gulls, herring gulls, &c., but amongst them I distinguished several adult great blackbacked gulls, also two blackheaded gulls; these latter *with* the black head.

W. Jeffery, Jun.

Ratham, Chichester, August 7, 1865.

Ornithological Notes from the Isle of Wight.

By Capt. Henry Hadfield.

(Continued from p. 9610.)

May, 1865.

Cuckoo.—On the 13th of May, observing a cuckoo perched on one of the topmost branches of an almost leafless ash, on the border of a copse on the northern slope of the downs (one of their favourite haunts), I crept up, under cover of a clump of furze, till within sixty yards, and there carried on my observations for some minutes, during which the bird never changed its position, but continued preening its feathers, the large fan-like tail being bent to one side, so that the quills might be dressed. Then a wing would be raised, and the point brought forward to be preened likewise; but more frequently, with contracted throat, the feathers about the neck and breast were carefully cleansed and readjusted; but occasionally the song would be resumed. As it sat erect on the leafless bough, I was reminded of the passenger pigeon of North America. Though but an occasional note is heard when stationary, the cry of the cuckoo was incessant on first alighting, and so timid was it that the passing of a cow near the tree caused it to fly off, and it again took wing on a magpié flying by. On the wing it resembled a hawk, but when perched its likeness to a pigeon was still greater. It having suddenly disappeared among the under-wood, I entered on a path winding through the copse, and having stooped to uproot a *white* bluebell, I was surprised and almost startled on hearing a rustling noise among the hazels, as of some animal or person creeping through, soon followed by a kind of whirring and hissing sound above me; more astonished than ever, on looking up I saw a magnificent cuckoo perched on a budding oak only a few yards from me. Being screened by the foliage around, I observed that the preening was resumed and carried on as before, and its note renewed, which, being so near, had a peculiarly thrilling effect. I might have listened and gazed and listened again, had I not ventured to put on my hat, which at once scared it away. It appears that this careful

preening is rendered necessary by the constant disordering and ruffling of the plumage in forcing its way through the cover and tangled brake when searching for grubs, or in pursuit of insects and moths. The cuckoo, having no family ties or cares, like other beaus, spends much of his time in dress, and is a showy, handsome bird, and perhaps second to none, if we consider the elegance of its form, as well as the beauty of its plumage. It would appear from Macgillivray and other writers that the cuckoo lays its eggs towards the latter end of May or beginning of June; but if this is its habit, they cannot be deposited until the *second* nesting of the titlark, as the first eggs of that species must be laid by the second or third week in April to have young fully fledged by the middle of May. By the bye, Temminck says of the titlark, "Habite les bruyères humides et les lieux marécageux proche des lacs et des fleuves. En Hollande."

Richard's Pipit.—Having early in the month observed a strange bird alight on a bank in the garden, approaching it cautiously I managed to get within a dozen yards, but could not make out the species, for though like a pipit it appeared a shorter bird, but with longer legs, and differing in colour from any pipit known to me; but on looking over Temminck's coloured lithographs I felt convinced of its being that rare bird, Richard's pipit that had been seen, and the description agrees with my observations, though I should call the white patch on the lower part of the throat gorget-shaped; this, together with its white temples and ear-coverts, and the elongated tarsus, is very remarkable. Macgillivray says nothing of the white crescent, but it is distinctly shown in the coloured engraving referred to, and is also indirectly pointed out by Temminck in the following description:—"La gorge, le ventre et l'abdomen, son d'un blanc *pur;* sur la poitrine qui est légèrement roussâtre, se dessine un large ceinturon de taches lancéolées." Macgillivray says, "the lower parts are *dull* white," and compares it to Anthus aquaticus. As Temminck remarks that its food is unknown, it may be as well just to state that during the few minutes that I observed it, it was feeding among the grass, and I saw it stretch out its neck to reach the groundsel, which was seemingly preferred to the other weeds and herbage.

Rook and Hooded Crow.—Your Lanarkshire correspondent, writing on the 11th of April, says (Zool. 9752), "Rooks have now eggs." Ours had young on the move by the end of the month, and there was rook-shooting near Shanklin on the 4th of May; but at Bonchurch, owing to the nests having been blown down early in the season, the young did not perch till a week later. Mr. Alston also remarks,

"Here, as throughout Scotland, the rook is popularly known as the crow, * * * while the true hooded or gray crow is almost unknown." That it is not unfrequently met with in the north of Scotland, I must refer the writer to my Morayshire notes (Zool. 9174).

Herring Gull and Lesser Blackbacked Gull.—Having, as I purposed, revisited the Culver Cliffs on the 25th of May, the mingled and wild discordant notes of these gulls were heard in the distance, and on reaching the summit a flock of a hundred or more was seen on the water, massed together in circular order, a few hundred yards only from the shore, but individuals being in constant motion, though not rising above a few yards and then re-settling, it was difficult to distinguish them; but on their dispersing and spreading themselves on and over the cliffs, I could make out but the two species, the herring gull being in the proportion of ten to one; and their nests were pointed out to me by an old fowler, and in one, placed in an angle of a grassy ledge, I could observe an egg, and was told it contained two more, though concealed by the jutting rock, which I had no reason to doubt, having found the gull on its nest. I hear that they arrived early in the month, but comparatively few breed here now. The lesser blackbacked gulls were all in immature plumage: whether they breed in that state must be left for future observation or to others more conversant with their habits to determine, but I saw nothing of the nests.

Green Woodpecker.—In reply to the editorial query (Zool. 9608), I beg to say that I have no doubt whatever of the green woodpecker having been seen at Luccombe in a friend's plantation, and that, too, by more than one member of his family, who were questioned as to its size, colour, &c.; and, fearing mistake, I called again, taking Temminck's coloured engravings with me, when the green woodpecker was at once recognized and pointed out.*

Redwing.—My remark, "Very few have been observed," had reference to the under-cliff and the neighbourhood; that they have been seen in greater abundance elsewhere, as recorded, I have no reason to doubt. [See Zool. 9582 and 9602.]

[* My query on this point is one perhaps of greater moment than my correspondent supposes. Supposing a woodpecker to have been seen in the Isle of Wight, how did it get there? did it cross the sea? was it bred in the island, although the previous existence of the species unnoticed? was it taken over from the mainland and liberated? These suggestions are certainly improbable and far-fetched: the subject is worthy of careful investigation.—*Edward Newman.*]

JUNE, 1865.

Rook.—June 4. The young, being well nigh full grown and strong on the wing, are in the distance hardly distinguishable from the old birds, but on a nearer view are readily identified, the webs of the quills being as yet unruffled, the feathers around the beak unworn, and the bill black, whereas that of the adult is blanched and denuded of feathers, and the old rook is seldom seen after the breeding season without a gap in the wing, or the plumage disordered in some way, either in combat or by coming in contact with the branches when alighting in the nesting trees. It is rather amusing to watch the gigantic young pursuing the parent birds from tree to tree and from rock to rock, for they now frequent the sea-cliffs, but what they find among the rank grass I cannot discover, for though snails are in plenty I have yet to learn that that delicacy is eaten. The beak of the young rook, like that of the young starling, being too flexible and weak to penetrate the earth, they are incapable of providing for themselves for a considerable time after quitting the nest, though the instinctive faculty may not be wanting. The young of both species are alike possessed with an insatiable craving for food, for which they incessantly clamour.

Goldencrested Wren.—On the 5th of June the pendant nest of this, our most diminutive species, was pointed out to me by a neighbour: it is attached towards the extremity of a drooping branch of a small cedar, but concealed by an overhanging bough; it contains young of some days old, which were being fed in rapid succession by both male and female, at intervals of from two to three minutes. Thinking myself observed, I ventured within a dozen yards, when they no longer flew in and out in the same fearless way, for occasionally there was a pause of several minutes, and the opposite side of the tree would be entered, though in flying out they were less cautious. Though generally alighting on the nest-tree, standing apart from the rest, they would occasionally perch for a second or two in the ivy on a jutting rock above, and then, dropping down, creep to the nest; after feeding the young a slight movement of the foliage would be observed, when, creeping out like mice, they darted off. Their beaks were often crammed with food. It is not a very common species in the under-cliff, and their nests are rarely found.

Jackdaw.—June 6. The full-grown young of this species, as well as the adults, now frequent the trees at the foot of the inland cliffs to roost, and small parties are to be seen in the dusk of the evening

wheeling round the cliffs and dropping among the branches, each arrival causing a momentary clamour, and as late as half-past 9 P. M. a subdued chattering note or call was heard.

Martin.—June 7. Observe that a pair of martins are building under the eaves of a neighbour's house: the walls of the nest being but half finished, it is of an inclined semi-cup-like form, dipping towards the centre. 13th. Though the nest is now well nigh finished, the aperture is as yet too wide, but is being expeditiously rounded off, the birds frequently going into the nest to carry on the work. There is a second nest under the same roof, though not quite so advanced, but a third on another building seems to be nearly, if not quite, finished. 14th. All the nests now appear perfect externally. Judging from the darker colour of the clay, about half an inch must have been added since yesterday to complete the walls of the second nest.

Blackbird.—A pair of blackbirds most unaccountably forsook their nest after the fourth egg had been laid; it was so well concealed, too, that no one knew of its whereabouts but myself; however, being so near the ground, the birds may have been alarmed by the cat. The four eggs point inwards and incline downwards. Though I have not observed that the eggs of the blackbird vary much in colour, no two artists seem to paint them alike. I have now three representations before me, not one of them correct: in the more recent work the egg is so thickly spotted and blotched with reddish and yellowish brown that little ground colour is to be seen, and that little is of a light greenish *yellow*. The florid style, even of our best artists, is much to be regretted. There is on the outside of the nest, at the base, a considerable quantity of clay, serving to fix it to the stems and roots of the ivy near the ground; its weight, with three eggs (one having burst by exposure to the sun) is six ounces and three-quarters. Embedded externally in the walls of the nest are a few stalks of weeds and the roots of divers plants, with which and coarse grass it is broadly and thickly margined. The lining is of a finer grass, resting on layers of a coarser kind, intermixed with leaves, moss, bits of silk and a feather or two, tending to prove that the blackbird is not over nice in the choice of materials. On the 16th of June the song of the blackbird was heard a little before 3 A. M.

White Wagtail.—June 7. Saw two light-coloured wagtails feeding among the decayed sea-weed, but supposing them to be immature young of the pied species I took no further notice of them; but on the 15th, when strolling along the cliffs, a grayish white wagtail suddenly alighted within three yards of me, its beak full of some material, proving it to

be an adult, nor did it take wing till I moved. It was subsequently joined by the male, a darker and somewhat larger bird, though, from Temminck's remark, "Longueur 7 pouces," without, as usual, saying the *male*, it might be inferred that they are of the same size: he makes the length of this species the same as that of the pied wagtail, but we are told by another author that it is half an inch shorter. On the 29th I observed a pair in a meadow, following the cows and catching flies from under their noses: when their beaks were well crammed they flew over the cliff to feed their young. The female has but the crown of the head and nape black, the breast being grayish black, and the cheek and side-neck of a dull grayish white, as described by Temminck. That it is the Motacilla alba I have little doubt, but will endeavour to procure a specimen or two when they have done breeding.

Sky Lark.—June 23. Having watched a pair on the downs, I noticed that while the female collected the building materials the male bird kept guard, perched on the topmost twig of a furze, but invariably rising on wing with a low hovering flight to rejoin his mate. The yellowhammer, too, is rebuilding.

Wood Pigeon.—June 23. As usual at this season I found a number on the downs in pairs and small flocks, feeding on the whortleberries growing among the heather and furze.

Swift.—June 26. Between 4 and 5 P. M. I saw near Shanklin some forty or fifty swifts hawking at a moderate height. The evening was calm, dull and sultry; thermometer 70°. I never remember seeing them in such numbers in the island.

July, 1865.

Common Swan.—July 7. Though the plumage of a cygnet, on the Bonchurch Pond, now appears to be of a pure white, when the wings are raised a grayish brown tinge is observable on the back, and the bill is still of a dusky colour, but with a slight yellowish tinge and the gaple line black. Early in the spring the whole plumage had more or less of the gray and reddish brown colour, and there was but a slight frontal knob, nor is it yet fully developed, though the bird (a male, I believe) is now as large as its adult companion, and more powerful, frequently remaining with head immersed for thirty or forty seconds, whereas its mate does not keep under above half the time. Though Temminck remarks that it is not until "la troisième année" that "tout le plumage est d'un blanc pur," I am inclined to believe him mistaken, and Yarrell right in saying that "the gray colour is borne for the

greater part of two years" only; that is, till the latter end of the second summer, though I doubt whether the bill will then be of the bright reddish orange colour of the adult. Temminck says the bill is *red.* Two young swans of this species were killed at one shot by an acquaintance of mine when flying over the Brading Marshes; the whole plumage being of a grayish brown and the bills dusky, tinged with yellow, they were doubtless birds of the season escaped from captivity.

Raven.—July 19. I find that a pair of ravens still breed in the cliffs near Luccombe. The young are now fully fledged.

Sand Martin.—This species is gradually moving to the eastward: I remember the time when there was a colony to the westward of Luccombe Chine; their next settlement was in the lofty sand cliffs nearer Shanklin, where they securely nestled till the holes were overwhelmed by a down-pouring of liquid mud, and the falling away of the cliff above raised a mound of such height as to make the nests accessible. The holes, though numerous, are within a narrow circle, shallow or choked with mud.

Bluethroated Warbler.—July 22. I am informed by one of the gardeners on the spot that the bird is still about the grounds, but, robin-like, lost its tail some weeks since, doubtless in fight, as it could not be moulting early in July. Though there have been reports of its breeding and the young having been seen, I have no faith in them, for it could hardly have escaped my notice or that of the gardener referred to; besides, if paired, it must be with the common robin.

Goldencrested Wren.—The young having flown I have carefully examined and measured the nest, and find the external diameter to be two inches and eight-tenths; external width three inches and three-tenths; internal breadth one inch and six-tenths; internal depth about one inch and five-tenths. The nest was attached to and suspended from five slight twigs of the cedar, and at about eighteen inches from the extremity of the branch; it is somewhat flattened on one side by contact with the foliage, but not "resting on a branch," and the wall of the nest is there of less thickness, averaging but about half an inch, whereas the external front wall is an inch or more and well rounded. Some of the twigs are regularly built into the sides of the nest, leaves and all, and are, as well as the rest, securely bound round with woollen threads, but some are of such exceeding fineness as to be like gossamer; others appear as if several of these minute fibres had been woven together to make a stronger cord, which is securely fastened to the twig by being passed over the

little knobs, but effectually preventing its slipping, the other end being built in and round the rim of the nest; but I am reversing the order in which it is done. Some of the finer threads spreading out, and branching off, have a web-like appearance where united to the branch. The nest externally is composed of fine moss and wool, with a few pieces or fragments of lichen, some cedar and other small leaves and stems, a feather or two, and a few minute blades of grass; the whole matted together with wool and cobwebs. The nest is pretty thickly lined with feathers, chiefly of one kind; they are, I believe, the neck or breast feathers of a fowl; some are two inches in length: they are laid round longitudinally, the shafts buried in the walls of the nest, the inner parts of the feathers towards the centre, rounding it off. I do not find "the moss cut small," as described by Macgillivray, though minute bits of moss and lichen are to be seen stuck here and there, but the pieces of moss forming the walls of the nest are of considerable size and placed in layers, the inner one, next the lining of feathers, having a considerable intermixture of the finest grass. The twigs having been removed, the weight of the nest in its present dry state is half an ounce and one scruple.

Martin.—July 23. This species observed to have young of some days old. 27th. Watched the martins feeding their young, now well nigh full grown; the heads of two could be distinctly seen as they watchfully sat at the opening, though occasionally beguiling themselves by pecking at the sides of the nest in a fidgety, restless way. Though fed in succession it was at irregular intervals. The wall, both below and on each side of the nest, has been thickly plastered with pellets of mud; my attention was first drawn to it by observing that the old birds frequently alighted on it or clung to it before settling on the side of the nest to feed their young: it extends right and left for some five or six inches, forming regular ledges.

Nightingale and Blackbird.—A nightingale, kept by a resident in this neighbourhood, lived for ten years. The same individual has caught, during the month, a young blackbird with a white tail tipped with black. No bird that I know of is more subject to these variations of colour, though the transition from black to white is common to many species, but whether permanently so I doubt; nor do I think it is transmitted to the progeny even of the first generation, or the pied varieties would be more common. I shall watch the moulting of this bird with some interest.

Willow Wren.—July 25. This species has reappeared, after an absence of some months; but they seem to be mostly birds of the

season, and with little of the yellowish tinge about the plumage. I am not aware of their breeding in the neighbourhood, and believe they retire inland soon after their arrival in April. They generally congregate on this coast before their autumnal migration.

HENRY HADFIELD.

Ventnor, Isle of Wight, August 1, 1865.

Ornithological Ramble over Bodmin Moors to Dosmary Pool, &c.—I went out to Jamaica Inn on Monday last, the 10th instant, and had a long ramble on the moors. It was almost too late for the birds which breed there, and the great movement of curlews, sandpipers, &c., from their inland breeding-places to the sea-shore must take place about the 1st of July: of the former there was not a single bird where, ten days ago, there were several pairs; and the Fowey River was without any old sandpipers, and there was only one brood of young ones able to fly well and take care of themselves. The rushes by the river were alive with reed buntings, titlarks and sedge warblers. My setter pointed where snipes had been lately boring, and we then had an unsuccessful chase after a young dipper. We looked in vain for any traces of otters, which had been reported as doing much damage by killing the geese. Saw one pair of sand martins, and then turned up over the hill to Dosmary Pool, finding every stone fence with its pair of wheatears, and their young just able to fly. There was a flock of seven or eight sandpipers by the pool, and a brown bird among them, which when captured turned out to be a fully-grown young dunlin in very good plumage. Among the stones and shingle at the east end of the pool there was a pair of sandpipers, which appeared to have small young ones, one of which was discovered scuttling across the sand till it came to a tuft of rushes, where it squatted so closely that my dog had to be called to find it, and a queer little creature it looked, with great tags of down adhering to its tail and body: on being put into the water, it dived well, as young sandpipers are said to do. After this pretty little exhibition it was allowed to escape without further molestation. At this time I heard a whistle which was not unfamiliar, and a grayish looking bird rose rather wild: visions of every Tringa and Totanus in Yarrell passed before my eyes as an ounce of No. 8 went into its unlucky carcase; "*parturiunt montes*," it turned out to be nothing in the world but a poor old ringed plover, which, however, I never expected to find so far from sea-beaches. This finished Dosmary Pool, and we then turned down to the big marshes between the pool and Temple Moor, where there were signs of flappers in a marsh, which was too deep to get into. My setter found several dunlins, working them in the same way as he does a jack snipe among the turf-pits; they were perfectly tame, running about very quickly, and scarcely taking flight when I went after them; of course they were not shot at: all I saw were birds of the year. There were also plenty of snipes, old and young, in all stages of growth; they appeared to puzzle old "Don," and what with my not shooting at some, and others allowing themselves to be caught by hand, he evidently thought a snipe marsh in summer a slow game. We killed two full-grown young snipes, which rose together, flew for about a hundred yards with their legs hanging down and short tails, looking like small moorhens, and then allowed themselves to be caught by hand without making further attempt at escape.—*F. R. R.; Trebartho, July* 14, 1865. [Communicated by Mr. E. Hearle Rodd.]

A List of Birds noticed in London during 1863-64.

By F. D. Power, Esq.

(Communicated by J. Edmund Harting, Esq.)

It may appear surprising, but it is nevertheless true, that even in London a naturalist may find much to study and admire, and may observe, within a mile of the city, more than twenty species of birds in a state of nature. My friend Mr. F. D. Power has noticed no less than twenty-four species in one square only (that in which he resides), and I venture to communicate the following notes, which he has sent me, feeling sure they will prove of interest to ornithologists in the country, as well as to those who, residing in London, take a more particular interest in the birds of their own neighbourhood.—J. E. Harting.

The following account of the birds seen in London is from observations made by my brother and myself during the last two years, and I hope will prove interesting. Several, I am sure, are birds which one would not expect to meet with in the "Great Metropolis." There are twenty-four species in all.

Redwing.—I have frequently heard these birds flying over on moonlight nights at the time of migration, but never saw one, although my younger brother saw two flying about the trees in Queen Square on one foggy November day in 1863.

Blackbird.—My brother saw one of these birds in the bushes in Queen Square towards the end of 1863; it appeared very tame, and is the only specimen that we have seen.

Spotted Flycatcher.—Very common in the square, particularly towards the end of summer. These must be the old birds with their families, preparing to migrate.

Robin.—As this bird shows itself everywhere, we were not surprised to find it in Queen Square. There are generally one or two to be seen throughout the year.

Willow Wren.—I saw two in some bushes in the square in the summer of 1863, and heard them sing several times.

Goldencrested Wren.—One of these was seen in the square in the summer of 1863, but I think this is the only time that it has occurred.

Great Tit.—Rather common; we generally see several in the course of the year.

Blue Tit.—This is the commonest of the tits, and it may be heard in the square almost at any time throughout the year.

Cole Tit.—Very seldom seen. I think that three specimens are all that we have observed.

Gray Wagtail.—In October, 1863, my elder brother saw one of these birds running on the leads at the back of our house. As this is such a decidedly aquatic species he was not a little surprised to see it there.

Sky Lark.—In the winter months we have several times seen large flocks flying over at a good height.

Chaffinch.—Commonly seen, and its well-known "chink" is frequently to be heard in the square.

Sparrow.—Common, of course, though differing considerably from its country brethren in colour, some appearing quite black.

Starling.—Rather common. I have seen one feeding in the middle of the road round the square.

Rook.—Common. They build in Gray's Inn, and are often "cawing" in the trees behind our house.

Jackdaw.—Sometimes, but rarely, seen flying over the square.

Wren.—Only one or two of these birds have been seen, and they are not common.

Cuckoo.—In the summer of 1863 we saw a bird in the square, which we fancied must be a cuckoo, but could not be sure. However, last summer all doubt was set at rest, for during two or three days, about the time of migration, they were quite common. Two or three were in the trees in the square nearly a whole day.

Martin.—We saw two or three of these in the summer of 1863, but none since.

Sand Martin.—Seen in large flights about the time of migration.

Swift.—One specimen was seen in 1863. I think this is the only time we have remarked it.

Common Whitethroat.—One was seen by my brother in the square during the summer of 1864.

Linnet.—My brother saw two or three fly over the square in the winter.

Missel Thrush.—My brother saw one of these birds fly over the house and settle in one of the tall trees in the square each autumn.

F. D. Power.

Melopsittacus undulatus at large in Britain.—While on the cricket ground at the Oval, during the interesting match between Surrey and Nottingham, a grass parrokeet (*Melopsittacus undulatus*) flew directly over the play, and settled on one of the well-known willows which fringe parts of the ground. It reminded me of several instances that have come within my knowledge of this beautiful little bird being able to provide for itself in this, to it, antipodeal island: three specimens frequented the garden at Lincoln's Inn during an entire winter and summer of 1863-4, but disappeared during the winter of 1864-5. A pair survived the winter of 1864-5 in the little shrubbery known as the "Tower Ditch," but since the leaves have clothed the trees the little creatures have become invisible. That a goodly number should have escaped, seeing what multitudes have been imported during the last few years, does not seem extraordinary; but that they should have survived so many months, without the protecting care of a Waterton, is rather extraordinary. I am not aware whether it is generally known that these birds have a great *penchant* for oats, so that where horses are kept the grass parrokeet may be fed at a very small cost.—*Edward Newman.*

Sedge Warbler or Reed Wren at Twickenham.—On June 26th and 27th the sedge warbler (*Sylvia Phragmitis*)—or possibly the reed wren (*S. arundinacea*)—was heard and seen by me near Twickenham, in pleasure-grounds, about a quarter of a mile from the Thames, and with no other water nearer. The birds sang in lilac and other bushes all day long and late into the night, each remaining pretty much in the same spot all the time. There are no reeds or sedge, or anything but ordinary garden shrubs, in the grounds, which are situated many feet above the level of the river, on a dry gravelly soil. Having never before heard these warblers, except close to water, I am anxious to know if the instance which I mention is an uncommon one.—*Clermont; 6, Grosvenor Crescent, S. W., July* 1, 1865.

Greenfinch's Eggs in a Chaffinch's Nest.—I send you a notice of what I believe to be a very unusual circumstance. I found a chaffinch's nest yesterday containing six eggs—four chaffinch's and two greenfinch's (*Fringilla chloris*). I should be very much obliged if any of your readers could throw light on this fact.—*P. H. Jennings; Lilley Rectory, Luton, May* 13, 1865.

Note on the Swallow.—Macgillivray is certainly correct in contradicting the received notion respecting the swallow's mode of feeding. We are taught from our youth upwards that, rushing headlong through the air with distended jaws, they engulph all unhappy insects in their course. A few days after their arrival here I had a capital opportunity of judging for myself. A slight shower induced me to turn aside to the shelter of a large tree: the same cause brought down a group of ten swallows. Careless of my vicinity, the beautiful ariels passed and repassed before me over a space of a few square yards, at times approaching within a fathom of me; so close, indeed, that I could distinguish the details of their plumage. Not one flew with open mandibles or outstretched neck; on the contrary, the whole mien was so composed that they seemed to be merely taking "a constitutional." But every now and then a sweep to the right, a jerk to the left, a leap upward or a plunge downward, indicated the close pursuit of prey, and a rapid gape of the jaws its inevitable capture. I was intent upon their movements until they had hunted their way beyond range of observation so long and so closely that the inaccuracy of the common statement is an opinion which "fire will not burn out of me."—*Charles W. Devis; Queen's Park, Manchester, June* 19, 1865.

Another Specimen of the Great Black Woodpecker expunged from our British Records.—With reference to the black woodpecker in the July number of the 'Zoologist' (Zool. 9626), Yarrell appears to be in error when he states that the black woodpecker is claimed by Sibbald as belonging to Scotland. The paragraph runs thus:—"Ex Picis Martiis, apud nos sunt, &c. Pici Martii rostrum habent rectum, &c. Digitos in pedibus binos ante et totidem retro. Insectis solis vescuntur: Picus viridis, Picus varius minor, Picus cinereus." Picis Martiis is evidently put for woodpeckers generally, and the only three species named are, the green, the small spotted and the cinereous (probably the nuthatch). A figure, however, of the black woodpecker occurs in a copy of Bewick's 'British Birds,' published in 1825, Iudia proof, without letter-press.—*E. C. Buxton; Daresbury Hall, Warrington.*

Is the Great Black Woodpecker a British Bird?

By J. E. Harting, Esq., F.Z.S.

I observe in the 'Zoologist' for July (Zool. 9626) your inquiry for information relating to reputed British specimens of the great black woodpecker; and I beg to call your attention to the following instances of its occurrence, which you do not appear to have noticed.

In a 'Catalogue of the Birds of Dorsetshire,' by Dr. Richard Pulteney (London, 1799), the author states that the great black woodpecker (*Picus martius*) has been obtained in that county more than once, and refers particularly to one which was shot in a nursery-garden at Blandford, and to another which was killed at Whitchurch. His description is, "Body black; cap scarlet," and there appears, therefore, but little doubt that Picus martius is the bird referred to, particularly as both P. major and P. minor are separately and distinctly mentioned in the same Catalogue. We are to assume that the author had good grounds for making the statements above mentioned; in other words, that he had satisfied himself of the facts before inserting them in his Catalogue.

Colonel Montagu, in the Supplement to his 'Ornithological Dictionary,' after referring to the specimen stated to have been killed by Lord Stanley, and which now appears to be a mistake (Zool. 9626), continues, "We have heard that another was shot in the winter of 1805 on the trunk of an old willow tree in Battersea Fields." It is observable throughout the whole of his work that Colonel Montagu was not only an accurate observer himself, but was usually careful to sift and prove the correctness of reports furnished to him relating to the occurrence or capture of rare species.

I am not aware that the occurrence of the great black woodpecker in the Hampstead Woods has ever been noticed in print; but I am informed of the fact by the person who saw the bird, and who, being a taxidermist by profession, was well acquainted with the species, and not likely to be mistaken. Mr. Spencer, of Great Portland Street, having a brother who was keeper to Lord Mansfield, at Hampstead, had many opportunities of visiting and exploring the large woods called Caen Wood, Mutton Wood, Wild Wood and Bishop's Wood, and of observing, shooting and examining many of our rarer birds, whose shy habits conceal them from the general observer. Early one morning in May, 1845, whilst walking through the thickest part of Caen Wood, Mr. Spencer was suddenly startled to see a black woodpecker dart between the trees and alight upon an oak at some distance. It was extremely shy, and he was scarcely ever able to approach within a hundred yards of it. On the following morning he again visited the spot, on the chance of getting a shot at the bird, and again saw it; but it was too wary to allow of a sufficiently near approach. On the third day he was unavoidably prevented from visiting the wood; but on the morning of the fourth day he saw the bird again for the third and last time. My informant is still living in Great Portland Street, and able to vouch for the fact.

In the 'Zoologist' for 1862 (Zool. 8091) there appeared a note to the effect that the great black woodpecker had been found breeding in an oak tree in the New Forest. As the eggs are stated to have been obtained, there can surely be no doubt as to the species. I observe you have not referred to this instance in your note (Zool. 9626).

Although cases have occurred in which the great black woodpecker has been reported to have been seen or captured, and it afterwards appeared that some other bird had been mistaken for it,—probably Picus major,—it does not follow that this species has *never* occurred in England.

Looking at the form and anatomy of the bird, I see no reason why it should not cross the sea as easily as the wryneck or any other of the short-winged birds which visit us in summer. Standing upon an eminence, I have watched a green woodpecker, in full flight, cross a large valley in a very short space of time. The line of flight is undulating, like that of the wagtail, but at the same time rapid. I have also seen a great spotted woodpecker cross a few acres of open park in the same way, and from the power which these birds displayed I have no doubt their flight could have been sustained for a

considerable distance. There seems to me, then, nothing wonderful in finding their congener, the great black woodpecker in England. But since it is decidedly not indigenous, nor yet a regular visitant, all records of its occurrence, to be of value and interest, should be thoroughly well authenticated.

J. Edmund Harting.

Kingsbury, Middlesex, July 23, 1865.

White Eggs of the Yellowhammer.—I enclose you a white specimen of the egg of the yellowhammer; the nest contained four eggs, all white. I could not have believed them to be the yellowhammer's eggs had the old bird not have been upon the nest: it is a very curious variety, and I send a specimen for your acceptance.—*George Mawson; Cockermouth, July* 7, 1865.

[This very curious variety of a common egg is most interesting: it has nothing either in shape or colour to indicate the species.—*Edward Newman.*]

Arrival of Summer Migrants near Norwich.—The following are the earliest arrival of summer migrants I have noticed this season in this locality:—

April 7th. Wryneck and nightingale.

April 8th Sedge warbler.

April 9th. Blackcap, a male of which I found floating near the bank of the stream at Old Lakenham, near Norwich. I took it from the water, and found its eyes and part of its head had been picked away, doubtless the victim of some hawk, which probably being disturbed had accidentally dropped it into the water whilst hurrying away. It was apparently only just dead, as it was quite warm when I obtained it.

April 10th. Cuckoo.

April 13th. Willow warblers and chiffchaffs appear more plentiful this season, whilst the swallows and martins have arrived in very small quantities at present. Sand martins arrived about the same period.

April 15th. Yellow wagtail.

April 16th. Lesser tern.

April 18th. Black tern.

April 20th. A male ring ouzel shot at Barford, near Norwich.

April 22nd. An adult female hoopoe shot in Mr. Read's garden at Plumstead, near Norwich.

April 26th. Shieldrake.—*T. E. Gunn; Norwich.*

Eggs of Pheasant and Partridge in the same Nest.—A friend of mine has just informed me that in taking a walk into the country, he observed his dog to point; on walking up to the spot, two partridges rose; he removed the grass away with his walking-stick, and was surprised to find nineteen partridge's and seven pheasant's eggs in the same nest. Is this not very unusual?—*George Mawson.*

[Three other instances, exactly similar, except in the number of eggs, have been communicated to me during the present summer.—*Edward Newman.*]

Malformed Egg of the Domestic Fowl.—I enclose you a curious malformed egg of the domestic fowl. I took it from the nest a couple of years ago.—*George Mawson.*

[This egg a good deal resembles in shape a jargonelle pear, but the pyriform figure is still more pronounced.—*Edward Newman.*]

Nidification and Incubation of the Emeu.—Mr. Bennett, in his interesting and detailed account of the breeding of the emeu in captivity, remarks (Zool. 9319), "thus definitely settling the question of sexes, the extraordinary reversal of habits and manners by which we had been misled, and the crowning fact of the *male* bird doing all the sitting." Mr. Bennett is, seemingly, unaware that this *fact*, namely, that it is to the *male* of this species that the duties of incubation belong, was long ago recorded by Nieremberg, and is thus referred to by Buffon in the year 1770:—"Nieremberg, conte des choses fort étranges au sujet de leur propagation; selon lui, c'est le mâle qui se charge de couver les œufs; pour cela, il fait en sorte de rassembler vingt ou trente femelles, afin qu'elles pondent dans un même nid; dès quelles ont pondu, il les chasse à grand coups de bec, et vient se poser sur leur œufs." But the *fact* of the *male* incubating was not credited, being, seemingly, too marvellous even for a Buffon, for he adds, "A l'egard de ce mâle qui se charge dit-on, de couver à l'exclusion des femelles, je serois fort porté à douter du fait, et comme peu avéré, et comme contraire à l'ordre de la nature."—*Henry Hadfield; Ventnor, Isle of Wight, June* 21, 1865.

[I think my correspondent misunderstands Mr. Bennett, who knows perfectly well how often the singular fact has been asserted and how often contradicted; indeed it has been a moot point ever since the first dawn of our knowledge of the emeu: Mr. Bennett thinks he has now settled the question, and I must say I agree with him. *Edward Newman.*]

Woodcock in July.—"On Friday last Mr. Cann, of Hiscott, in this parish (Tawstock), captured alive a fine woodcock, which weighed twelve ounces. The bird was sold to an ornithologist of Barnstaple, who placed it in his garden, where it still lives and thrives." The above paragraph was cut out of the 'North Devon Journal' of the 27th of July. I remember, a few summers since, some children caught a woodcock in a small copse close to Barnstaple, and this bird, like the one mentioned above, was in good condition and quite uninjured. It almost seems as if woodcocks occasionally became lethargic in the summer time, and permitted themselves to be caught without any attempt to fly, as on the occasion I refer to, and apparently also the recently captured bird noticed in the 'North Devon Journal.' I should be glad to know if any of the readers of the 'Zoologist' have come across woodcocks thus seemingly indifferent to their freedom.—*M. A. Mathew; Weston-super-Mare, August* 3, 1865.

Snipe in the middle of July.—There were a quantity of snipes for a few days on the peat moor between Highbridge and Wells, the middle of last month, after some heavy showers here had made places here and there rather splashy. A keeper on the moor, who shot a few of them, declared that they were all young birds; but I never place much reliance on keepers, for, as far as my experience goes, no set of men are more ignorant about birds. I was surprised to find Mr. Harting (Zool. 9667) giving any credence to a member of this class, especially on the matter of hawks, of which all keepers I have ever encountered are most supremely ignorant, recognizing, in general, but two species, *viz.*, "the kite," which includes everything larger than a peregrine, and "the little blue hawk," which means the peregrine, sparrowhawk, merlin and hobby. Indeed I doubt if half the keepers in the kingdom can tell a cuckoo from a hawk.—*Id.*

Bernicle Goose near Cockermouth.—During the hard frosts experienced here in January a friend of mine shot male and female bernicle geese, out of a flock of at

least seventy that settled in the River Derwent, near Cockermouth. I obtained the two specimens, which are in splendid plumage, and had them preserved. I cannot learn, from even "the oldest inhabitant," of a single visit of this bird here before.—*George Mawson.*

Egyptian Goose at Barnstaple.—A small flock of Egyptian geese appeared on the Taw the last week in June. One killed by one of the river pilots was brought into Barnstaple for preservation.—*Murray A. Mathew; Weston-super-Mare, July* 7, 1865.

The Ivory Gull: Correction of an Error.—I regret that at Zool. 9566 I have recorded the occurrence of an Ivory Gull at Weston-super-Mare, because the bird I then referred to has been found not to belong to that species. I only had a hurried view of the bird the first time I saw it, and this was in rather a dark room, and the bird was already mounted and cased. Seeing a snow-white gull I concluded it could be nothing else than the ivory gull; but on a subsequent visit I was surprised to notice that it was without the black legs of that species, and was altogether a much larger bird. I am almost at a loss to what species to refer this singular capture. It corresponds most nearly, in the structure of bill, legs, &c., with a young great blackbacked gull, and may possibly be an albino, although, if it is, it is the first albino gull I ever came across. A large gull, snow-white *all over*, with legs and bill of a uniform green-tinged flesh-colour, is somewhat a nondescript, and I should be very glad to hear if any of the readers of the 'Zoologist' have ever met with a similar one, or could give me any light upon the matter.—*Id.*

Note on the Capture and Habits of the Smooth Snake.

By Dr. Blackmore.

Having been fortunate enough to catch two specimens of the comparatively little-known smooth snake (*Coluber lævis*), during a short visit to Bournemouth, I am anxious to record my experience of this pretty little snake; not, indeed, that any new fact has been elicited by me, but my observations tend to confirm those previously noted and recorded by others.

On the 10th of June, 1865, one of those scorching, cloudless days so frequently met with during this month, after strolling along the beach for about a mile beyond the flag-staff of the coast-guard station, I turned inland, and wandered up a beautiful little green gorge or miniature chine, down which trickled the water from a small tract of higher level marshy land, the rich verdure of which was charmingly relieved by a sprinkling of the feathery white cotton rush: here I was startled by coming unexpectedly upon a large adder basking on the damp grass. My friend was extremely polite, and made all haste to get out of the way, but almost instinctively my walking-stick was down upon him; a few additional taps rendered him quiescent, and he was soon tied up in my handkerchief and safely deposited in my pocket.

I had scarcely gone ten yards further when a moderately-sized common ringed snake (*C. natrix*) glided across my path, not very fast, however, and the reason was soon apparent—the snake looked *high-shouldered;* it had evidently just dined, and its dinner was only about four inches from its head. Knowing how easily snakes disgorge their prey, I just stopped it with my stick, and in half a second up came a fair-sized toad. Thus lightened of its burden the snake quickly disappeared; the toad also soon regained its presence of mind, sat up, held its head knowingly on one side, gave me a parting wink and crawled away. The usual diet of the ringed snake is the frog, but I have known them eat toads when kept in confinement, and the present case proves that they occasionally eat them in a state of nature.

My adventures were not yet over, for no sooner had I passed the marshy land and gained the sandy heath than I saw what I at first took to be a small dark-coloured adder basking on the short grass, and even after a second good look at it could not help thinking that it must be an adder; accordingly I gave it a slight blow with my stick, then held it down and carefully seized it immediately behind the head; it at once most obligingly opened its mouth, and I took out my pen-knife to raise the poison-fangs; strange to say, however, there was no poison-fang to raise, and the thought flashed through my mind, "This, then, is one of the new snakes;" and the closer I examined it the more pleased I felt, and more fully convinced that my conjecture was correct.

I have mentioned all these circumstances to show that, although each snake has its favourite haunt, yet in some localities examples of all three of our British Colubridæ may be caught within a radius of fifty yards. Of course I was now anxious to procure other specimens, and set to work and systematically hunted the surrounding heath; the result of a week's hunting was—two smooth snakes, and saw one other glide under a gorse-bush, but was too late to secure it; two adders; about seventeen common ringed snakes; three sand-lizards (*L. agilis*), and a very great number of the little viviparous lizard (*Z. vivipara*).

I found the common viviparous lizard more than usually abundant at the spot where the two smooth snakes were caught, and have no doubt but that this very circumstance determined the presence of the snakes in this particular locality.

My friends the smooth snakes, when first caught, hiss and bite freely, but soon release their hold; unlike the ringed snake they do not emit

any disgusting secretion when irritated; their voice, if I may use the term, is a different tone, being softer and more feeble than either that of the adder or ringed snake; they are also far less shy and more easily tamed than the common snake. On the second day after the capture I procured three full-sized viviparous lizards, and placed them in the glass jar with the snake; it immediately became excited, and in a few minutes seized one of the lizards a little in front of the hind legs: the lizard was perfectly undaunted by this procedure and returned the compliment by turning and seizing with its mouth a small piece of the skin about the middle of the snake's body. The snake, after twisting in every direction, shifted its hold and bit the lizard across the middle of the body, and finally set to work at the head, gnawing it like a dog does a bone, but still, in spite of all this, the lizard held firmly on. This contest lasted for more than ten minutes, and then the snake seemed to consider it a bad job, and ceased biting the lizard, which, having gained a victory, soon let go its hold and ran away: the poor lizard had, however, suffered most in the conflict, and died the next day. The snake now turned its attention to another of the lizards, and this time seized it by the root of the tail, which, of course, came off, and was quickly swallowed; barely had the tip disappeared from sight before the snake suddenly caught the tailless lizard by the head, and, by the usual slow process, commenced gorging its prey, an operation that took exactly sixteen minutes by my watch. In the night, or early the next morning, the third lizard was eaten by the same snake.

My second capture is somewhat of an epicure, and at present has consumed more tails than lizards; it does not, however, confine itself entirely to tails. With regard to this same tail-eating propensity of the smooth snake, I may mention that three of the viviparous lizards which I caught had previously lost their tails, but in what manner is of course entirely open to conjecture.

The iridescence on the head of my specimens is very much less than that noticed by Mr. F. Buckland; indeed it is not more than exists on the darker markings of the adder in certain lights. There is a slight difference in the colour of my two snakes; the smaller and more slender one is rather darker, and has less brown under the chin; it is also more active and shy. I think this likely to be a male, and the one first caught a female; but how can I decide without dissection? Is there any well-marked difference in the form of certain of the scales, such as Mr. Jenyns has pointed out, in regard to the

distinctive marks of the two sexes in the viviparous lizard? This is a point on which I should much like information.

HUMPHREY P. BLACKMORE.

Salisbury, July, 1865.

Notes on the Water Spider (Argyroneta aquatica).—It was while dredging for fresh-water shells, last spring, that I had the pleasure of making the acquaintance of this interesting creature. I had the net on the bank of the pond, and was examining the result of the last draught, when a large spider ran out of the ooze and wrack at the bottom of the net. Being engaged with the shells, I gave little heed to the spider until I came to put the *rejectamenta* back into the pond, which I make it a rule to do, when I observed the spider to run along the surface of the water for some distance, and then dive beneath it. This act (diving) showed me that it was no common spider, but that the creature I had so carelessly tossed back into the water was the real Aranea aquatica of Linneus, an animal for a sight of which many naturalists have longed. By slipping the net beneath the spot where it had dived I fortunately succeeded in recapturing it. It was a female, and had the usual reddish cephalothorax and legs, the abdomen being blackish, with hairs having a hoary appearance when the head of the creature is turned towards the observer. This one I lost owing to my having left the jar in which she was kept uncovered. A second dredging in the same pond resulted in the capture of more specimens, particularly a male and female: these two I placed together in the same vessel, which was the cylindrical body of a glass shade, five and a half inches high by four inches wide, to which a glass bottom was cemented by Canada balsam. A sprig of Potamogeton crispus was placed in the jar to oxygenate the water. The male almost immediately commenced to build a nest at the top of the plant, just beneath the surface of the water: it was about an inch in diameter, nearly globular, and of a transparent texture. From this air-filled lurking-place he would often issue to attack boat-flies, caddis-worms or the larvæ of dragon-flies, which I had put in to serve as food for the couple. Meanwhile the female was busily engaged in performing her nidifactory duties: her nest was built down at the bottom of the jar, was less than that of the male, and of a different shape, being higher and not so broad. Its chief peculiarity, however, was that the upper portion of it was made of white opaque threads, or perhaps of the ordinary threads so closely compacted as to be impervious to the light, the lower portion of it being transparent, like that of the male: this nest she filled with air, and, having frequent occasion to renew the supply, she spun a ladder of threads to facilitate her frequent journeyings to and from the surface; for the water spider, although of almost exclusively aquatic habits, is not a very dexterous swimmer, it being about as much as she can do to overcome the buoyancy of her air-clothed body. The air in the nest is constantly diminishing, owing to the breathing of the spider replacing the oxygen by carbonic acid, which is quickly absorbed and carried off by the water: this renders frequent replenishment necessary, to accomplish which the female creeps out at the bottom of the nest, and, after watching an instant to see that all is clear, she walks up the ladder until her fore feet touch the surface of the water: she then turns as if on a pivot, and thrusts the apex of her abdomen out of the water, with her two hind legs curved so as to bring the tarsi into contact with the abdomen a little below the apex (that is, *below* when the spider is in the position described), the one on the back and the other on the front of the abdominal region.

In this position she remains for a few seconds, and then suddenly gives a kick with the two hind legs, and you see her running down the ladder, a bubble of air enclosing her abdomen, which it usually resembles in size: the size of the bubble is, however, variable, and it is noticeable that when large the animal throws back and arches the two hind legs so as to inclose and protect it. Water spiders, even if without nests, frequently come to the surface of the water in order to breathe, or to change or replenish the supply of air which surrounds the body. In this latter case the apex of the abdomen is merely thrust out of the water, and after a time drawn back again, the coating of air being the same in quantity as before. The only difference in the method of obtaining the nest and that of the breathing supply, appears to me to consist in the kick given by the hind legs when a larger quantity of air is wanted than will naturally adhere to the body. The *rationale* of the process is, I think, as follows:—The body of the spider is clothed with a fine pubescence possessed of air-retaining properties. If by any means an additional quantity of air can be isolated and submerged it will, by the force of the attraction of cohesion, combine and adhere to that already surrounding the body of the animal. When the spider comes to the surface for this purpose, she thrusts the apex of the abdomen out of the water, thus causing a cavity or depression on the surface: this depression represents the bubble she wants, and only requires its connection with the air above cutting off to enable her to carry it down; this she effects by the sudden kick given by the hind legs, which, coming from opposite directions, cut off the connection by their scissor-like action. One peculiarity of the water spider, which I think deserves mention, is the whitish liquid sometimes projected into the water, and which falls slowly to the bottom in graceful festoons, resembling, more than anything else that I can call to mind, a faint trace of the nitrate of silver test in a weak chloride solution. I am sorry I cannot give the exact time of incubation, as I left home a little before the eggs were hatched, and when I returned I found the young spiders set up in life for themselves, each with its miniature air supply and nest. The female, at the close of the period of incubation, built for herself a nest like the male's, at the top of the jar.—*John Peers; Buttermarket Street, Warrington, August* 2, 1865.

Erratum.—Please to correct the following error in my last communication (Zool. 9698); line 11th, for "run" read "rest."—*Id.*

Notes on and Description of the Larva of Eupithecia plumbeolata, Haw.—Last summer, through the kindness of an entomological friend, I had the pleasure of inspecting a most beautifully executed collection of coloured drawings of various species of Geometra and their larvæ, the work of a continental entomologist, M. Carl Plotz. This gentleman figured the larva of Eupithecia plumbeolata, *Haw.*, feeding on the flowers of the purple cow-wheat (*Melampyrum arvense*). As M. pratense, another species of this genus, grows plentifully in those localities where E. plumbeolata is taken in this country, it occurred to myself and several other entomological friends that this plant might probably turn out to be the pabulum of this species, and we determined in the course of the present season to investigate the matter. I am happy to say that our investigations have proved successful and our suspicions correct. About the end of June I received eggs of E. plumbeolata from Mr. Barrett, of Haslemere, Mr. Hodgkinson, of Preston, and Mr. George Baker, of Derby. The parent moths were all taken flying over or amongst Melampyrum pratense, and had

deposited their eggs on sprigs of this plant. The batch of ova sent me by Mr. Baker was the only one with which I had any success. From these eggs I was fortunate enough to rear seven or eight larvæ, which have now spun up and assumed the pupa state. I am happy to say that my friend Mr. Buckler, of Emsworth, has, with his usual skill, executed several most faithful drawings of this larva, and that he, Mr. Hellins, of Exeter, and Mr. Baker have taken the larva themselves on the flowers of M. pratense in the neighbourhoods of Emsworth, Exeter and Derby. The plant does not grow here, but Mr. Hellins has most kindly supplied me with fresh flowers by post every three days. I cannot sufficiently thank this gentleman and my friends Messrs. Buckler, Baker, Barrett and Hodgkinson for the trouble they have taken to assist me in making this most interesting discovery. I subjoin a description of the larva and pupa, which may possibly prove interesting to the readers of the 'Zoologist.'

DESCRIPTION OF LARVA AND PUPA.

Somewhat short and stumpy, in shape and general appearance resembling the larva of Eupithecia isogrammata, *Tr.* Ground colour pale, dull yellowish green. Central dorsal line broad, continuous dull purplish red, enlarged into a somewhat pear-shaped blotch on the centre of each segment. Subdorsal lines narrow, sinuous, dull purplish red. Spiracular lines yellowish, very faint. Spiracles blackish. Head yellowish, suffused with purplish red. Dorsal and subdorsal lines sometimes merged into one, leaving the whole back and sides suffused with purplish red. A few slender yellowish hairs sprinkled over the dorsal and lateral segments. Belly naked, pale, dull greenish yellow. Central ventral line wanting. Subventral lines narrow purplish red. Feeds on the flowers of Melampyrum pratense; when quite young on the stamens alone, afterwards on the whole corolla-tube. Full-fed from the middle of July to the middle of August. Reared from eggs laid by moths taken on Breadsall Moor, near Derby, by Mr. George Baker, 47, Kedleston Street, Derby. Pupa enclosed in a slight cocoon either in a dry corolla tube or on the surface of the earth. General colour golden yellow. Abdominal divisions and tip red.—*H. Harpur Crewe; The Rectory, Drayton-Beauchamp, Tring, July* 31, 1865.

Wasps and Fleas.—The number of female wasps in the spring appeared unusually great, leading to the expectation of an unusual number of nests. I have not seen one wasps' nest. There have been no wasps among the gooseberry-bushes, and none on the wall-fruit. I have frequented the garden for weeks together without seeing a single wasp. I mentioned this to a neighbour, some miles distant, whose garden and walls are extensive, and found that he also had experienced a like absence, almost total, of wasps, though he had noticed the numerous young queen wasps in spring. He added that he was under the impression that fleas were notably less numerous of late years than formerly. Having myself been under a like impression, and having spoken of it, independently of my friend's observation, I am inclined to think there may be truth in the remark.—*W. H. Wayne; Wenlock, August* 12, 1865.

Fireflies in Malayan India.—The Malays here and in many parts of the Archipelago have jewels made for night wear, set, not with pearls or stones, but with little round cages about the size of a pea, in each of which a firefly is imprisoned; the little insect, excited by the narrowness of its cage, gives out even more brilliant and more frequent flashes than when at large. The jewel could have no more pretty setting; it is also a very cheap and a very harmless one, as the firefly is set free before the night is over. I have read somewhere that these insects are impaled on little golden

needles, as in the agonies of death they emit a more brilliant lustre. This must be a mistake, however, for I have found that the strength of the flashes they give out is in proportion to their vitality, and if this is in any way impaired, as by the loss of a leg or a wing, the bright flash becomes dull and often extinct. It is difficult to believe that the light of these insects is phosphorescent; it certainly has much more the appearance of electricity, for it is a sharp bright spark and not a dull lustre, and if not under the control of the animal is at least affected by its passions. If they are irritated, as by confinement, or if a branch of a bush on which they are clustered be roughly shaken, they will flash out much more rapidly and brilliantly than when enjoying themselves undisturbed.—*From John Cameron's work intituled 'Our Tropical Possessions in Malayan India,'* p. 80.

Proceedings of Societies.

Entomological Society.

August 7, 1865.—F. P. Pascoe, Esq., President, in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' Vol. xiv. Nos. 73—76; presented by the Society. 'Verhandlungen der Kaiserlich-Königlichen Zoologisch-botanischen Gesellschaft in Wien,' Vol. xiv.; by the Society. 'Annales de la Société Linnéenne de Lyon,' Nouvelle Serie, Tome x.; by the Society. 'Annales des Sciences Physique et d'Histoire Naturelle, d'Agriculture et d'Industrie, publiées par la Société Imperiale d'Agriculture, &c., de Lyon,' 3e Serie, Tome vii.; by the Society. 'Ueber einige Pflanzenverwüster,' 'Entomologische Fragmente,' 'Zoologische Miscellen,' by Georg Ritter von Frauenfeld; by the Author. 'Cecidomyia destructor, *Say*, Wezengallmücke oder Weizenverwüster,' 'Ueber eine bisher wenig beobachtete Getreidemotte Tinea pyrophagella, *Kllr.*; by Prof. Haberlandt; by the Author. 'Ueber Getreideverwüster;' by the Author, Gust. Ad. Künstler. 'The Zoologist' for August; by the Editor. 'The Entomologist's Monthly Magazine' for August; by the Editors.

The addition, by purchase, was also announced of C. G. Thomson's 'Skandinaviens Coleoptera,' Vol. 7, Part 1.

Election of Members.

The Rev. Joseph Greene and Messrs. H. S. Gorham, H. Blake-Knox and Thomas Parry, were elected Members; and Mr. W. Rogers was elected an Annual Subscriber.

Exhibitions, &c.

Mr. M'Lachlan exhibited one living and numerous dead specimens of the ant-lion (*Myrmeleon formicarius*), together with the pupa-cases, and the larva and pupa in spirits; he had brought the larvæ from Fontainebleau in August, 1864, and fed them on house-flies; they remained torpid for about five months during the winter, and the perfect insects emerged at Forest Hill from the middle of July to the 5th of August.

Mr. W. Wilson Saunders exhibited a living specimen of a species of Locustidæ of a bright delicate green colour, of which he gave the following account:—About four

months ago, Mr. Marshall, of Edmonton, gave him three small locustideous larvæ which were found in an Orchid-house, into which some Orchids from Mexico had been recently introduced; these larvæ were taken to Reigate and placed in an Orchid-house under a glass cover, but as they were very sluggish and appeared to be dying, Mr. Saunders' gardener proposed to allow them a little fresh air; the result was that all three escaped, and for three weeks nothing was seen of them. At the end of that time one of them was found eating the under side of the leaf of a Cymbidium; having been returned to its glass case, and again allowed to inhale fresh air, it again effected its escape, upwards of two months ago; four days before the Meeting the specimen exhibited was found, after it had completely spoilt a new Orchid (Cyanophyllum, *n. sp.*). It turned out that the creature was entirely nocturnal in its habits; by day it sat on a branch or leaf with its wings flat to the surface, the hind and middle legs hidden under the elytra, and the fore legs stretched straight out, with the antennæ between and beyond them; in this position it was with difficulty distinguished from the plant, and throughout the entire day it remained perfectly still, but at night was active and ate ravenously. The insect seemed to be remarkably fond of wiping or cleansing its feet and antennæ; and throughout its exhibition the process of gradually drawing the whole length of its antennæ through the palpi was carried on.

Mr. Bates thought the fact of a locust feeding by night was new, and nocturnal habits were the more remarkable in an insect of so bright a colour; he had met with upwards of fifty species in South America, but did not remember one that was nocturnal. The species exhibited belonged to the section of the group having the ovipositor curved upwards from the base and sabre-shaped (probably to the genus Steirodon), which suggested the question whether they laid their eggs from below, on the under side of leaves. It was well known that the males of this family possessed a drum-shaped organ on one wing-case, and a horny nervule like a file on the other wing-case, by means of which they were able to produce sound; there was one species which was collected by the natives of the Amazons and kept in cages for its musical qualities, as we keep canaries.

Prof. Westwood pointed out that the insect exhibited was not the locust of common parlance, but belonged to the Gryllidæ; he also explained that the sound-producing organ was a tambourine, rather than a drum; and he suggested that the specimen was East Indian, not American.

Mr. M'Lachlan mentioned that a small species of Gryllus (Meconema varia?) often paid nightly visits to the sugar of Lepidopterists.

The President said that he had requested further information from Mr. Odewahn respecting the mode of production of the sound emitted by the Australian Bolboceras which he had exhibited at the April Meeting (Zool. 9554); it appeared that the sound was caused by the rotation of the hind coxæ in the cotyloid cavity; striæ were visible on the dorsal surface of the coxæ, and similar but smaller striæ within the cavity.

Mr. Edward Saunders exhibited Trachys pygmæa, recently captured by sweeping in marshy ground near Folkestone.

Mr. D. Sharp exhibited Cryptocephalus 10-punctatus, and the black variety Bothnicus of Linnæus, from Rannoch; of the typical form he had found only the female, but of the black form both sexes.

Mr. D. Sharp also exhibited a number of the larvæ of Eros Aurora, from Rannoch; they were found gregariously amongst rotten pine-chips, and though not (he

supposed) naturally carnivorous, they had whilst in his possession fed principally on the pupæ of other insects which happened to be in the same place of confinement; both larvæ and imago were very sluggish in their habits.

Prof. Westwood, on behalf of Mr. Wilson Armistead, of Virginia House, Leeds, read the following:—

"Located in the midst of a smoky town and district, chiefly noted for its manufacturing industry, I am desirous of obtaining the aid of my friends who are more favourably circumstanced, in elucidating a somewhat neglected portion of Nature's productions. I allude to those curious excrescences popularly known as Galls. These are caused by the punctures of insects, chiefly Cynips, and are found of various forms on the oak, the rose, the willow, the speedwell, and many other trees and plants, sometimes presenting a very dissimilar appearance on the same plant, according to the insect by whose enchanting wand they are, as if by magic, brought forth. It is matter of surprise that these 'little fairy palaces,' as they have been aptly called, so exceedingly varied and beautiful—some round as an apple, tinted like it, red and yellow; others like unripe currants; some resembling a honeycomb; some again miniature artichokes; some velvet cushions; some coral beads; and others tufts of moss—it is matter of surprise, I say, that these should have attracted apparently so little attention. They are, however, now claiming a greater share of notice. Two or more continental observers have published works specially relating to them, one on the Galls of Switzerland, by M. Berni, and another by Dr. Hammerschmidt, who has made the subject one of much research, giving drawings of 250 different kinds, and the insects producing them. A good deal has also been done during the last few years towards elucidating the American Galls. Count Osten-Sacken, the Russian Consul-General, has been a chief originator of some researches into them, followed up by Mr. Walsh, of Illinois, who has contributed valuable information respecting them to the Entomological Society of Philadelphia, published in their 'Proceedings.'

"Having myself been an observer of Galls and similar excrescences for twenty years or more, and having collected most of the British species, and some American ones during a visit to that country, I am preparing a volume to contain the result of these observations. This work will include drawings and descriptions, with some attempt at classification. *A coloured drawing of each* will be given where practicable, *and a description of every known Gall*, as far as my own observation extends, including those described by others, not omitting some similar excrescences known as pseudo- or semi-galls, whose production may be variously accounted for. An artist in London has been engaged to make drawings from specimens for the volume now proposed, and he has already produced some beautiful and faithful delineations. Being desirous of making the work as complete as possible, I shall esteem it a favour if any naturalist who may have observed or may possess any galls, wherever found, not hitherto known or described, would communicate with me, and furnish any particulars respecting them.

"I may add that I am in want of specimens to draw from of the leafy gall occurring on Genista tinctoria, of which I have description, but have not succeeded in meeting with it; also the cottony or woolly gall of the oak."

Mr. S. Stevens exhibited a collection of butterflies recently received from Mr. P. Bouchard from Santa Marta; and read a letter from that gentleman, dated the 30th

of June, 1865, in which the writer stated that they were collected about 100 miles in the interior, in a valley about seventy miles west of the Snowy Mountains, and about the same distance from the Magdelena River; they had been brought from the interior on a mule's back; the writer had obtained very decent apartments in a house where the next neighbour was thirty miles off, was in good health and spirits, and had become used to the heat of the country.

Lieut. R. C. Beavan sent from Calcutta some exquisite drawings of the Tusseh silk-worm and moth, which were exhibited.

With reference to a statement in the 'Journal of the Society of Arts' of the 4th of August, 1865, that "the silk-worm culturists in France announce the birth or hatching of the larva of Bombyx Atlas; this gigantic moth has never before been seen alive in Europe," Mr. F. Moore mentioned that he had bred Bombyx Atlas in London more than a year ago."

Prof. Westwood had been informed that the Yamamai silk had entirely failed this year in Holland. He had recently reared some of the Ailanthus silk-worm, and found them sluggish in habit, feeding only at night; with the exception of young larvæ, less than half an inch long, he never found one to feed by day; when a moult took place, and immediately after it had escaped from the old skin—at a time therefore when any movement must be inconvenient to it—the larva invariably turned round and at once ate up the old skin; he had noticed that the skin was covered with a light powder, and this appeared to be the attraction to the larva.

Referring to Mr. Stone's communication, read at the previous Meeting (Zool. 9704), on the number and early appearance of wasps, Mr. Stainton remarked that though wasps were so numerous in the spring, there were scarcely any at the present time, when fruit was abundant and ripe; for some weeks past he had seen two wasps and two only.

Mr. W. W. Saunders corroborated Mr. Stainton as to the almost entire disappearance of wasps, whereas earwigs were more plentiful than ever.

Prof. Westwood had not seen a wasp for two months; he thought their absence was to be accounted for by the remarkably heavy rain-falls which had occurred on two or three occasions, in May, in June, and more recently, whereby the nests had been swamped.

Mr. Saunders replied that that explanation was not applicable to the neighbourhood of Reigate, where the rain-fall, taken month by month, was not so great as last year, when wasps were exceedingly abundant; and there had not been any single rain-fall of one inch, whereas in previous wasp-abounding years, as much as three inches had been registered at a single rain-fall.

Mr. Stainton observed, moreover, that a heavy rain-fall was local only, whilst the extinction of the wasps appeared to be general.

Mr. C. A. Wilson, Corresponding Member, of Adelaide, communicated the first portion of some "Notes on the Buprestidæ of South Australia," which was read.

Mr. Dunning exhibited a curious specimen of Fidonia piniaria, which he had captured on the 11th of June, 1850, in a pine wood at Farnley, near Huddersfield. It was well known that the sexes of this moth were very different in appearance, and were described by Linnæus as two species, the male as Phalæna piniaria, "alis fuscis, bimaculatis; antennis pectinatis," the female as Phalæna tiliaria, "alis ferrugineis; antennis setaceis;" the specimen exhibited was what a hybrid between piniaria and

tiliaria might have been expected to be, if those forms had in fact been two species instead of the sexes of one. The specimen was sexually a female, and the abdomen was apparently distended with eggs; the general colour was midway between the colours of the ordinary male and female, but the size and the markings were those of the male. He had been puzzled to know how to describe it; he would not be without precedent if he called it a "hermaphrodite," or, adopting the nomenclature of Mr. Newman (Zool. for 1851, Appendix, p. cxl., where the distinct phenomena often confounded under the term hermaphrodite were classified), a "hemigynous" specimen. Mr. Dunning doubted, however, whether an union in the single individual of the *structural* differences between the sexes was not necessary to constitute hemigynism, or whether an individual which presented the structure of one sex throughout, but the colour and external markings of the other, was properly hemigynous; such an individual was abnormal, certainly, but were the superficial differences from the typical form anything more than skin-disease or cutaneous eruptions? The absence of any "addition to or alteration of a part or organ" prevented the application of a theory of "dimorphism" as recently enunciated by Mr. Pascoe; and the isolation of the case excluded alike the "polymorphism" and "local form" of Mr. A. R. Wallace (see Tr. Linn. Soc. xxv. 5, 10), and the theory of "mimetic resemblance" of Mr. Bates, to establish any of which a solitary example was insufficient, and a large number of instances—a more or less permanent race—was required. There seemed to be nothing left but to fall back upon the old term "variation;" at the same time the variation was not simple, casual, aimless, but in a definite direction, as if designed; it was the case of a female retaining essentially her sex, but having an unmistakeable bias or tendency to assume the garb and outward appearance of the male; he would exhibit the insect as Fidonia piniaria, an andromorphous variety of the female.

Mr. J. J. Weir suggested that "dichromatism," a "dichromatic variety," would denote the phenomenon in question.

Prof. Westwood hoped never again to have heard the word hermaphrodite applied to the abnormal forms under discussion; the best and only proper term was that given by Prof. Lacordaire, "gynandromorphous." He thought that, at all events some cases, where the differences were external only and not structural, were truly cases of gynandromorphism. For instance, he had an Orange-tip butterfly (*Anthocharis Cardamines*), which was female in every respect, except that on the tip of one fore wing were about a dozen of the bright orange scales which characterized the male; he regarded that specimen as possessing in itself the rudiments of two distinct creatures, a male and a female, and that the female influence had so far predominated as to have absorbed the male, except in that small portion of the wing where the male influence prevailed. With respect to variation generally, no attempt to classify the various forms and phases of it had yet been made; the subject was a wide one, but it would have to be dealt with, and in the hands of a Darwin might be made of surpassing interest and value.

Paper read.

Mr. J. S. Baly read a paper entitled "Descriptions of New Genera and Species of Phytophaga." Twenty species were described, five belonging to the Eumolpidæ, the remainder to the Galerucidæ; two new genera were characterized under the name of Hylaspes and Buphonida, both of the subfamily Gallerucinæ.—*J. W. D.*

Life-History of Chortobius Davus.—The egg is barrel-shaped, the sides convex and delicately ribbed, the extremities truncate, attached by the lower extremity to the linear setiform leaves of Rhynchospora alba (beak-rush), on which they are laid at the end of June, always singly, and generally only one on a leaf, but sometimes two, and very rarely three. The young larvæ emerge in fifteen days, and crawling to the extremity begin feeding; they feed during the day, and grow very slowly; they rest on the leaves in a perfectly straight position, but on being annoyed fall from their food on the Sphagnum or other mosses among which the Rhynchospora usually grows, and there lie in a bent posture, as if dead, until all appearance of danger has passed, when they reascend the leaves: when among the moss it is almost impossible to detect them. At the end of August those under my care ceased to eat, and on the 1st of September I made the following description:—Head semiglobose, wider than the body, slightly notched on the crown, beset with minute hairs; body linear, its sides almost parallel, but slightly and gradually attenuated towards the anal extremity, which terminates in two points directed backwards; dorsal surface transversely and regularly wrinkled, and covered with extremely minute warts, which under a lens give the surface the appearance of extremely fine shagreen; the dorsal wrinkles divide each segment into sections. Colour of the head dingy semitransparent green; the ocelli very prominent and intensely black: colour of the body dingy green, with five narrow, equidistant, distinct, purple-brown stripes; the interspace between the second and third stripe on each side is intersected by a very narrow and indistinct stripe, almost similar in colour to the other five, and the exterior purple stripe on each side is bordered below by a pale glaucous, almost white stripe, extending throughout its entire length. Immediately after this description was written the larvæ disappeared, probably secreting themselves at the roots of their food-plant. In the spring of 1865 I saw nothing more of these larvæ, but received a fresh supply on the 26th of May, when they appeared full-fed. The larva then rests in a perfectly straight position on the blades of the beak-rush, falls off its food-plant when annoyed, and remains quiescent for some time as if dead, in a somewhat bent position. At this date I made a second description:—Head rather wider than the 2nd segment, distinctly exserted, prone, scabrous with minute warts; body cylindrical, slightly and very gradually attenuated towards the anal extremity, which terminates in two parallel points above the anal flap, and directed backwards; surface of the body almost smooth; warts indeed are observable, but so minute as not to communicate a scabrous appearance, nor are there any noticeable hairs or bristles. Colour of head and body apple-green, inclining to olive-green; head dull opaque, uniformly coloured; body striped; a narrow mediodorsal stripe dark purple-green, bordered on each side by a still narrower yellow stripe; these three stripes terminate before the anal point; on each side are two pale yellow stripes, one above the other below the pale brown spiracles; the upper of these is bordered above and below with dark bluish green, and terminates in the anal flap, which is tinged with pink; the lower terminates before the anal flap; ventral surface, legs and claspers bottle-green. Two days subsequently—namely, on the 28th of May—they underwent pupation. The pupa has the head truncate and slightly produced at the angles and also in the middle; the wing-cases very slightly produced at the shoulders; the thorax is dorsally convex, with a very slight median keel; the pupa is suspended by minute cremastræ from a white silken web spun on the edge of a leaf of its food-plant; the colour of the wing-cases is pale brown, with a darker arcuate median linear mark

extending from the base to the margin, and a much shorter mark of the same colour in front of this, originating in the disk, but also extending to the margin; head, thorax and abdomen apple-green, irrorated with dingy whitish green. The butterflies produced from the individuals described appeared on the wing on the 4th and 5th of June. I am indebted to Mr. Hudson for specimens of the egg, larva and pupa; for a supply of the food-plant; and for information respecting the economy of this species. A brief description of the larva having already appeared in the 'Entomologist,' this life-history cannot suitably appear in that journal.—*Edward Newman.*

Life-History of Pygæra bucephala (buff tip).—At the beginning of June these singular moths may frequently be found coupled in pairs on the trunks of lime, elm and other trees, or on the herbage below them, the truncate heads and closely convolute wings giving each pair the appearance of a single piece of dead and dried stick. As soon as they separate the eggs are laid in a patch of from thirty to sixty, mostly on the upper side of a leaf; they are convex above and flat beneath, of a China white colour, and having, in the middle of the convex portion, a very conspicuous black dot, at which the young larva emerges in fourteen days; and after eating a portion of the egg-shell around the point of emergence, they feed in company on the upper cuticle and the parenchyma of the leaf, leaving the veins entire and connected by the lower cuticle: they have then large shining black heads, and much narrower yellow bodies, beset with long soft hairs, and adorned with series of black spots or blotches, of which the mediodorsal series is by far the most conspicuous, the lateral series consisting of minute and inconspicuous spots; the dorsal surface of the 2nd segment as well as the whole of the 13th segment is black, as are also the anal claspers, which are constantly elevated, rarely touching the leaf on which the little creatures are standing: after eight days they undergo the first moult, and then separate into little companies of six, eight or ten, each company ascending to the tip of a leaf, and feeding at the edge in the usual manner; but when resting each little company huddles together on the surface of the leaf, reposing side by side with the anal claspers elevated: the head is now still more largely developed, much broader than the body, and shining black; the dorsal surface of the 2nd and 13th segments are still black; after a second moult the head is less conspicuously large, and the body more variegated: as the larva continues to grow the markings develope themselves; and the head and body become covered with soft flexible and rather long hairs. The larvæ are full fed towards the end of July, and are readily found by the devastation they cause: each brood fixes on some topmost or outside branch of Ulmus campestris (elm), Tilia europæa (lime), Corylus avellana (nut), or other tree, for it appears a very general feeder, and, completely stripping off the foliage, leaves the twigs as bare as in the depth of winter: these voracious colonies are seldom within reach of the hand, but if a stick be thrown up the larvæ descend in a perfect shower; they are extremely flaccid and never roll in a ring, but almost immediately on regaining their legs turn their heads towards the trunk of the tree whence they have been shaken, and reascend, traversing the branches and twigs until they attain an elevation and exposure satisfactory to their minds. The head of the full-fed larva is prone, exserted, and of nearly the same width as the body; it is covered with crowded but minute punctures, and with fine silky hairs; body uniformly cylindrical, clothed with very fine silky hairs, and having a glabrous corneous plate on the 13th segment, which decreases in size after each moult. Colour of the head black, with a bright yellow mark on the face in the form of a letter V reversed: the base of the antennal papillæ is also yellow: colour of the body dull

yellow, with a transverse band about the middle of each segment of a deeper colour, almost orange; and on each side, alternating with these orange bands, which occupy the verrucose portions of the surface already noticed, is a series of obscure and ill-defined markings, almost white; there are also nine longitudinal black stripes extending from the 3rd to the 12th segment, both inclusive; these stripes are interrupted throughout by small circular yellowish dots, each of which has a minute central black dot, emitting a white hair; of these nine stripes the mediodorsal is somewhat the broadest and decidedly the most conspicuous; between the third and fourth lateral stripes are the intensely black spiracles; there is also a glabrous corneous black plate occupying the anal flap; legs intensely black and shining, and having dull blackish markings above their base; ventral claspers with a black shining exterior corneous plate, and smoke-coloured markings on the outer surface; anal claspers black and still elevated when at rest; belly yellow, with two series of black blotches between the fourth pair of ventral and the anal claspers. These larvæ, having arrived at their full-fed condition, descend the trunks or stems of the trees on which they have fed, and crawl about the surface of the ground with great activity, often crossing dusty roads and leaving long circuitous tracks in the dust; sometimes marching over flagged pathways, and being consequently trodden under foot of man, by which casualty hundreds come to an untimely end; those which escape nestle at the roots of herbage or under fallen leaves, and change to pupæ on the surface of the earth, without any web, cocoon, or protection of any kind, and with so little attempt at concealment that they are frequently seen by the passing entomologist, and are sometimes in such abundance that boys collect them to sell to dealers in entomological specimens at a penny or twopence a dozen: they also constitute a favourite food of poultry, and are sought for with great eagerness; dame Partlet may often be seen scratching for them in my own neighbourhood under the lindens. The pupa is regularly punctate, but slightly shining; its colour is very dark brown; a deep dorsal notch divides the 12th and 13th segments; the latter terminates in two very singular processes, each of which is furcate, the prongs divaricating and acutely pointed.—*Edward Newman.*

Life-History of Hadena rectilinea.—The egg is laid in June on the leaves of Salix caprea (sallow), and the young larva emerges in July; it feeds with great voracity, and grows very rapidly, attaining its full size before it retires for the winter, which is usually about the end of October, but sometimes earlier: in a state of nature they probably hybernate on the surface of the ground, under the fallen leaves of the sallow; but in confinement they have a diversity of practice, sometimes concealing themselves in the *débris*, covering the earth in the breeding-cage, sometimes ascending the sides of the cage and adhering to the sides or top: they also differ in another respect, sometimes covering themselves with a slight web, at other times being perfectly exposed: towards the end of March they appear to become more lively, and crawl about the cage; they are, however, much reduced in size by the winter's abstinence; if supplied with twigs of sallow they do not appear to eat the opening leaves, but prepare for pupation. The larva now rests with its head frequently turned on one side until it touches the 9th segment; if annoyed, it falls to the ground rolled in a compact ring, feigning death, and remains in that posture several minutes. Head semiporrect, subglobose, highly glabrous, slightly narrower than the 2nd segment: body nearly uniformly cylindrical, but slightly attenuated towards the anterior extremity; the 12th segment is transversely dorsally elevated, but not very conspicuously so; the surface is velvety and iridescent, the iridescence resulting from the light falling on the delicate soft short pile

with which it is covered; the anal claspers are spreading. Colour of the head dark brown, and, like the body, iridescent: dorsal surface of the body dark rich umber-brown, clouded and variegated with lighter and darker shades; a darker shade forms an obscurely defined mediodorsal stripe, which emits at the posterior margin of each segment a branch, extending obliquely downwards and forwards, until it reaches a broad dark lateral stripe that terminates abruptly on a level with the spiracles, which are wainscot-brown; ventral surface, extending upwards to the spiracles, purple-brown, with a bloom like that of a ripe plum, and delicately reticulated; 12th segment crowned with two dorsal yellow spots placed transversely; dorsal and ventral surfaces separated on the 2nd, 3rd, 12th and 13th segments by a yellow line; legs and claspers reddish brown. Descends to the ground and undergoes pupation just below the surface of the earth: the perfect insect appears in May. I was indebted to Mr. N. Cooke for a supply of these larvæ in the autumn of 1864.—*Edward Newman.*

Description of the Larva of Acidalia rubricata.—The larva when full fed is not quite an inch in length; in shape rather slender, tapering towards the head; the head itself is notched, having the lobes rounded and swelling out wider than the second segment; the whole body is ribbed with transverse rings. The ground colour is gray or ochreous on the back, paler on the belly. The dorsal line is composed of two very fine dusky threads; there is a thicker and darker subdorsal line, commencing on each lobe of the head, and vanishing again after the fourth segment; as far as this extends there is between it and the dorsal line a pale gray stripe; on the next five segments both these subdorsal lines reappear only as a light or black spot at the segmental divisions, while on the back of the same segments there are five elongated dusky lozenges faintly edged with black; the remaining segments are paler both in ground colour and in distinctness of lines. The spiracles are black, placed in a drab longitudinal ridge, which is bordered above by a fine black line and below by a wider one. All the dark lines and marks become much fainter as the larva approaches its final change. The pupa is apparently placed in a slight cocoon under moss: the moth appears on the 29th of June.—*Rev. John Hellins, in the 'Entomologist's Monthly Magazine.'*

Description of the Larva of Toxocampa craccæ.—Larva (when full-grown) 1¼ to 1½ inch in length. When viewed from above it tapers towards the head, and still more towards the posterior end; but when seen sideways appears almost uniformly long and slender. Its manner of walking is a partial looping of the first six segments: the first two ventral prolegs are very slightly shorter than the others, but to such an extent as to be scarcely noticeable, and it generally assumes an undulating posture in repose along the stem of its food-plant. Along the back, commencing on the head, is a dark brown, very finely mottled, broad stripe, widest along the middle segment; and with an additional widening on the eleventh segment; in the centre of this is a thin, rather paler stripe, enclosing the very dark brown dorsal line. The subdorsal stripes are double, brown, with a paler ochreous-brown ground, followed by a pale stripe of ochreous, enclosing a very thin brown line; the lateral lines double, dark brown, extending from the mouth to the anal prolegs; edged above with black at the anterior portion of each segment; the upper one widening below in the middle, along which are some black dots. Belly and legs brown. Within the dark portion of the back, on each segment, are placed four black dots in the usual order, and on the eleventh segment there is an additional black dot on each side, outside the dark region. Subdorsal lines, also, containing two black dots and a minute ring. Went to earth on the

24th of June.—*William Buckler* (*Emsworth, Hants, July*, 1865) *in the 'Entomologist's Monthly Magazine.'*

Life-Histories of Sawflies. Translated from the Dutch of M. Snellen van Vollenhoven, by J. W. May, Esq.

(Continued from page 9638).

Hylotoma Rosæ, *L.*

Linnæus, Syst. Nat. ii. 925, 30. *Fabricius, Spec. Ins.* 413, 39. *Goedaert, Metamorph. Nat.* i. 28. *Rösel, Ins. Belust.* vol. ii. *Humm. u. Wesp.* pl. 2, p. 15. *Réaumur, Mémoires,* vol. v., Mém. III., p. 102, pl. 14, fig. 1—12. *De Geer, Mémoires* (German transl.), vol. ii. sec. 2, p. 279, pl. 39, fig. 21—29. *Hartig, Blatt-und Holzwespen,* p. 85, No. 13. *Bouché, Naturgesch. d. Insecten,* p. 135. *Brischke, Abbild. und Bescreib.* p. 11, pl. 11, fig. 4.

Hylotoma rubro-flava, capite cum antennis, thoracis dorso, pectore, alarum costa antica, nec non tibiarum et tarsorum articulorum apice nigris.

From the above references, which might easily be added to, it will be seen that this insect has long been known and frequently written about and described, both in the imago and the larva state. In order to avoid repetition, I will first give an account of my own observations, and then see in how far those of other authors differ from them. I wish, however, first to make a remark concerning the nomenclature: it might, possibly, be said that the sawfly now under consideration cannot be the Tenthredo Rosæ of Linnæus, as this author, in the work above referred to, speaks of "antennis septemnodiis." There can, however, as De Geer has remarked, be little doubt that Linnæus had our insect in view, as he refers to the figures by Réaumur and Rösel, either of which can represent no other than this species. It is probable that he wrote his description without having the insect actually before him. Hartig writes "Rosarum, *Fabr.*," probably only a slip of the pen; it is, however, possible that Klug had, before him, also made the same mistake, which I cannot now verify.

Towards the end of July last year I had already observed, for above a month, a good many of these larvæ on bushes of Rosa centifolia in my garden; some of the larvæ were young and some full-grown, so

that they could not all have been from one brood. On the 22nd of July I collected a considerable number for the purpose of describing and figuring them, and intending, if possible, to rear them. It happened that a couple of days after I also received a good number, which Mr. B. Wttewaall had found in Mr. Hartevelt's garden, on Rosa pomifera, and which he sent to me for rearing.

The length of the largest individuals was 2 centimetres, as represented at fig. 3 in our plate. The head was shining orange, the eyes black and circular, set in two round black spots. At the top of the clypeus were two brown spots like inverted commas. The jaws were orange, with the apices brown; the antennæ, which were below the eyes, were very small, annulated with a somewhat darker tint, the lips orange. On the head were some minute punctuations and little gray hairs. Some were destitute of the comma-like spots; in others these spots were much enlarged, almost forming a crescent.

The larvæ of the genus Hylotoma are generally stated to have eighteen legs: on very close examination I found my larvæ had three pairs of thoracic legs, six pairs of abdominal legs, and two almost confluent anal legs; the sixth pair of abdominal legs were, however, remarkably small, and appeared as if they could be wholly withdrawn under the skin.

The thoracic legs were obscure green, with a black spot on the upper side of the base; they were armed at the end with a brown claw, below which was a little round bladder. Fig. 4 represents the head, together with the first segment and one thoracic leg in profile. The other legs were pale obscure green, with a little black spot just above the base.

The whole creature was very glossy and of a greenish gray tint; the back was orange from the second to the eleventh segment, the first and twelfth being greenish; but above the anus, on the last segment, the colour was orange. In the folds dividing the orange-coloured segments on the back the skin was green. On either side of the body, just above the legs, was a row of eleven large black knobs, each bearing a certain number of little short hairs. On the upper surface of each segment were two rows consisting of six pretty large black spots and a few smaller ones, on each of which was a single hair (see fig. 5). The stigmata were small, margined with white, with a small horny spot on either side. Above the anus on the last segment was a row of four small spots, and below this a very large black spot, as shown at fig. 6.

It appeared to me at the time a singular circumstance that the

particles of excrement of these larvæ were always of two colours; I have, however, since observed the same thing to occur in other species, and in various colours. In the case of the species under consideration, the particles were of an oblong shape, rounded off at each end, being somewhat narrower in the middle and always having a clear white elliptical spot on one side.

The larvæ were tardy in their movements, keeping the abdomen somewhat curved round underneath, and, when observed, were generally feeding, so that their presence on my rose-bushes was easily recognizable. They devoured the leaves right up to the midrib.

On the 26th of July the number of the larvæ in the garden began to diminish, and those which I had kept in a jar began to crawl about in an unsettled manner, and appeared, as I thought, to be looking about for a suitable place in which to pupize. I put some hollow stems of Deutschia scabra into the jar, as some sawfly larvæ have a custom of creeping into the hollow stems of plants for the purpose of undergoing their change; but, after crawling about for some time, my larvæ, totally disregarding the hollow stems, spun up among the withered rose leaves, which were lying on the sand at the bottom of the jar.

The cocoons of these insects were very curious; they were double, the outer case being very pale yellowish brown, extremely tough, and having large meshes like a miniature cocoon of Cimbex Amerinæ. Some of them were entirely covered with grains of sand, but as these easily came off on being touched, it appeared they were not spun together by a web, but had merely been accidentally included in the meshes. On cutting open the first cocoon a second was discovered, consisting of a very fine and apparently membranous tissue, which seemed to be quite free from the external cocoon, as it could be readily taken out of it. Fig. 8 represents the cocoon of the natural form and colour, and fig. 9 a cocoon of which the outer coat has been partly torn off, leaving the inner part projecting beyond it.

In September I found the contained larvæ had not yet changed to pupæ; on the other hand, during the first week of that month, a considerable number of young larvæ of another brood had established themselves on the rose-trees in my garden. I had not observed any imagos during the month of August; I nevertheless concluded that the eggs which had produced these young larvæ had been laid during that month, because at this time I observed on the twigs of my rose-bushes an appearance I had not noticed before, namely, that all the twigs bearing leaves on which young larvæ were found were very much bent round, and that at the inside of the curve there was a long

ferruginous scar, as if the epidermis had become loosened and the under-lying tissue was wrinkled (fig. 16). I conclude that at this spot the epidermis had been opened by the saw of the female, and in the incision so made the eggs had been deposited.

The young larvæ were green with merely a trace of yellow on the second and penultimate segments. They differed, moreover, considerably from the full-grown individuals, in that their heads and thoracic legs were shining black, but they already exhibited the rows of black dots and the black anal spot. Figs. 1 and 2 represent the young larvæ at different periods of growth.

On the 17th of June of the following year the first imagos of those which I had in confinement made their appearance, thus having passed ten months and a half in the cocoon; that is to say, unless all the July larvæ had died, and only those taken in September had produced imagos; in which case they would only have been eight months in completing their metamorphosis. Judging from the number of imagos I got I think the first supposition the more probable. It was immediately evident from the structure of the antennæ that these imagos belonged to the genus Hylotoma, these organs being composed of only three joints, the first two of which were very small, and the last unusually long. In the male this last division was slender, curved upwards, of the same thickness throughout, and closely covered on one side with fine separate hairs (see fig. 11). In the female this part was shorter, slightly clavate and smooth (see fig. 12).

The imago (fig. 10) is pretty stout, the head and thorax somewhat hirsute, for the rest smooth. Length 8 millimetres, expanding to 17. Head black, having the eyes brown; palpi yellow; antennæ black, having occasionally a red or yellow tinge on the upper surface. The thorax is yellow, except on the dorsum, from the prothorax to a spot above the scutellum, and at the sides to within the tegulæ; underneath, on the breast, is a shining black spot. The abdomen is shining yellow, with merely a little black on the margins of the valves of the saw and of two little projections on the last segment. Legs yellow, with little black spots on the coxæ and apophyses; the apices of the tibiæ and of the first three joints of the tarsi, as likewise the last two joints, are also entirely black. On either side of the claws are some stiff setaceous hairs, and between them a pad. The wings are yellowish, from their insertion to beyond the middle; the space between the costal and post-costal nervures is black, as is also the stigma, this latter being bordered with yellow; further all the nervures are deep yellow, except the one between the second and

third discoidal cell, which is black. Fig. 10 represents the female magnified.

The male differs in being smaller and more attenuated, also in the shape of the antennæ and of the last abdominal segment, added to which the anterior and intermediate coxæ are generally entirely shining black. In order to show the difference in the appearance of the abdomen in the two sexes, I have figured the terminal segments of both. Fig. 13 represents that of the male; *a* appeared to me to be the penis; *c* the head of one of the two little black processes, which are also found in the female: fig. 14 is the female abdomen, in which *b* represents the saw, curving outwards and downwards between the terminal valves: lastly, at fig. 15, are the saw and ovipositor. The superior portion, which is somewhat serrated at the apex, represents the left half of the ovipositor and the inferior portion the left valve of the saw. This is armed at the under side with a number of angular and square teeth, and at the sides with rows of exceedingly sharp points.

From what has been stated, it may be concluded that this species produces but one or at most two generations in the year. I found, however, that, taking individual cases, the progress of the metamorphosis was very unequal: thus Dr. Wttewaall informs me that from a number of larvæ, which he collected and took home on the 4th of July, 1857, some imagos made their appearance on the 25th of July, making an interval of twenty-one days, and that others did not develope till the 29th of May of the following year. It is difficult to suggest a cause for this difference, as the conditions and circumstances were the same for the whole number of larvæ.

I will now note in how far other authors differ in their accounts from what I have stated as the result of my own observations.

From various points in Goedaert's twenty-eighth description, contained in his first volume, I conclude that he had this insect in view; but more particularly from the fact that he represents the antennæ of the imago as somewhat clavate. The life-history agrees very well (his insects also remained ten months in the cocoon), but the figure of the larva, otherwise tolerably good, shows only sixteen legs, instead of eighteen.

Rösel informs us that he met with this species on willows and gooseberry-bushes; I take the liberty of doubting the correctness of this, and conclude that he must have taken some species of Nematus for our present insect, there being members of that genus strongly resembling Hylotoma Rosæ. He does not say that he reared the larvæ found on willow and gooseberry, but only that he observed

them. This author further informs us that the young larva curves the body upwards, often even supporting itself on the six thoracic legs only: if my conclusion is correct, this is also founded on a confusion with Nematus, and can be readily accounted for on the same ground as the former observation. All the rest exactly agrees with our own observations.

Réaumur also speaks of the body being held in the form of an S; speaking of the thoracic legs of the larvæ, he says the latter may be distinguished from caterpillars by having two claws on these members. De Geer has shown that this was inaccurate, and that, instead of two claws, it should have been one claw and a pad. Moreover, he is not speaking exclusively of this particular species, but of sawflies in general, so that the species he had before him is not easily to be discovered. At all events, it is certain that the plates, especially the enlarged figures, are by no means accurate.

De Geer's description is excellent; he merely states, as regards the position of the larvæ, that they have a habit of keeping the end of the body curved round underneath. He corrects Réaumur's statement as to the claws of the thoracic legs. His figures are not very happy, although recognizable.

Bouché's observations are accurate and his descriptions clear. Brischke has also some points of difference in his description, but these can be easily accounted for as the effect of local variation or race: he says the stigmata were black; I observed them to be white, with two black spots at the sides; he gives the colour of the head after the last moult as "grünlich oder hellbraun"; I always found it orange, the same as all other describers. He also states that at the last change of skin the black spot on the anal valve disappeared; I observed the contrary with my larvæ. He also says, in contradiction to Réaumur and Rösel, but in accordance with Bouché and myself, that the larva curls the tail underneath. He makes a remarkable observation respecting the little knobs immediately after moulting; he says that they then have the appearance of large gray bladders, with numerous black points on them; and only gradually assume their true appearance. He has also distinctly observed two generations.

In the description of this species in my 'Schadelijke Tuininsecten,' written before I had had an opportunity of observing it myself, I have repeated the mistakes made by Rösel.

I have not reared any parasites from Hylotoma Rosæ.

Proceedings of Societies.

Entomological Society.

September 4, 1865.—Frederick Smith, Esq., V.-P., in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—'The Transactions of the Linnean Society,' vol. xxv., part 1; presented by the Society. 'Bulletin de l'Academie Royale des Sciences, &c., de Belgique,' 2e série, t. xviii., xix.; by the Academy. 'Proceedings of the Boston Society of Natural History,' vol. ix. (part); by the Society. 'Annals of the Lyceum of Natural History of New York,' vol. viii., Nos. 1, 2, 3; by the Lyceum. 'Monographs of the Diptera of North America,' part 2, by Loew and Osten-Sacken; by the Smithsonian Institution. 'Notes on Humble Bees,' and 'Notes on the Leaf-cutting Bee,' by F. W. Putnam; by the Author. 'The Humble Bees of New England and their Parasites,' by A. S. Packard, jun.; by the Author. 'Remarks on some Characteristics of the Insect Fauna of the White Mountains, New Hampshire,' by S. H. Scudder; by the Author. 'On the Hymenoptera of Cuba,' by E. T. Cresson; by the Author. 'Catalogus specierum generis Scolia,' part 2, by H. de Saussure and J. Sichel; by the Authors. 'Stettiner Entomologische Zeitung,' 1865, Nos. 7—9; by the Entomological Society of Stettin. 'Notice sur John Curtis' and 'Rectifications de la Nomenclature de plusieurs Espèces de Phasmides recemment décrites,' by J. O. Westwood; by the Author. 'The Zoologist' for September; by the Editor. 'The Entomologist's Monthly Magazine' for September; by the Editors.

The addition, by purchase, of the 128th livr. of Duval, Migneaux et Fairmaire, 'Genera des Coléoptères d'Europe,' was also announced.

Election of Members.

Herr L. W. Schaufuss, of Dresden, was ballotted for and elected a Foreign Member. The Rev. Sir C. R. Lighton, Bart., and H. T. Wood, Esq., were severally ballotted for and elected Annual Subscribers.

Exhibitions, &c.

Mr. Bond exhibited an andromorphous female and a gynæcomorphous male of Fidonia atomaria, thus showing each sex in the garb of the other: coupling this with the exhibition at the previous Meeting of the andromorphous female of Fidonia piniaria (Zool. 9743), it seemed not unlikely that this peculiar form of variation might be found to run through all the Fidoniæ.

Mr. Bond also exhibited two specimens of Gonepteryx Rhamni, one of which, a male, had a broad stripe along the costa of the left anterior wing of the pale colour peculiar to the female, whilst the other, a female, had large patches of the right anterior wing of the deep colour peculiar to the male: he regarded these as simple varieties, and not as cases of gynandromorphism or of the union or blending together of the two sexes in the same individual.

Mr. Bond also exhibited a variety of Ennychia anguinalis, having a broad patchy whitish marginal band on all the wings, external to the usual narrow white fascia.

Mr. W. F. Kirby exhibited a dwarf male specimen of Polyommatus Icarus (Alexis) measuring only 8½ lines in expanse of wings. This pigmy was captured by Mr. Kirby about the 20th of July last at the salt marsh at Hove, near Brighton, and except in its diminutive size did not present any variation from the ordinary form of the insect, which was then very common in that locality.

Mr. Stainton exhibited a highly-magnified coloured drawing of the larva of Laverna subbistrigella, together with pods of Epilobium montanum in which the larvæ had fed, and which had, in consequence, a somewhat stunted and deformed growth: the habit of the insect was discovered at Wiesbaden, and Mr. Barrett had this year detected the larvæ at Haslemere, where the imago had previously been captured.

Mr Stainton (on behalf of Mr. Dorville) exhibited a specimen of Caradrina cubicularis having a number of red Acari symmetrically arranged upon its wings.

Mr. Stainton mentioned that he had this year noticed an unusual abundance of Chelifers on the legs of house-flies; the natural place for Chelifers would seem to be amongst vegetation, and Dr. Hagen was of opinion that they attached themselves to flies only for the purpose of locomotion; with this he could not agree, for the Chelifer, according to his observations, never quitted a fly to which it once attached itself, and the fly was powerless to get rid of it. On one occasion he had seen a fly with three Chelifers on one of its legs.

Mr. M'Lachlan exhibited both sexes of Æshna borealis (*Zetterstedt*), taken by him at Rannoch in June last. This dragon-fly was previously known as British by a single example only, captured many years since in Scotland by Mr. Wilson, and now in the collection of De Selys Longchamps.

Mr. M'Lachlan also exhibited Sialis fuliginosa (*Pictet, Brauer*), a species new to Britain, and taken at Rannoch. There were but two European species of this genus, and both had now occurred in this country.

Mr. M'Lachlan also exhibited two new British Trichoptera; one, a Rhyacophila, from the neighbourhood of Edinburgh, allied to, if not identical with, R. ferruginea (*Hagen*); the other a Stenophylax, from Rannoch, for which he proposed the name of S. infumatus.

Mr. S. Stevens exhibited a box of Coleoptera, part of a collection made in Damaraland by the well-known traveller Mr. Andersson; amongst them were a Phryssoma, a Manticora (latipennis?), several species of Goliathus, G. Burkei, G. Layardi, and an Eudicella, *n. sp.*, allied to E. Smithii.

Prof. Westwood gave an account of a visit to the Exhibition of Insects and Insect-products, which was opened at Paris on the 15th of August last. He mentioned particularly some bee-hives which were sold for 1f. 25c. each; and an octagonal bar-hive, which was so constructed as to be capable of division into two distinct hives: *à propos* of the silk-products, he mentioned that the silk-merchants were beginning to import Ailanthine as an article of commerce, and that certain experiments had recently been made at Toulouse with a view to test the quality of the Ailanthus wood; the tenacity and density of Ailanthus (as given by three experiments) and of elm and oak (as given by seven experiments) were comparatively as follow:—

	Ailanthus.	Elm.	Oak.
Tenacity . . .	32·812	24·867	19·743
Density . . .	·713	·604	·751

Prof. Westwood added that he had recently observed one of his full-grown larvæ of Saturnia Cynthia, which had been fed on its natural food, the Ailanthus, had emitted from the anus one or two large drops of fluid: prior to their change to the pupa state larvæ generally expelled as much fœcal matter as possible; but was this fluid discharge to be regarded as part, or an extension, of the same phenomenon? was it the natural habit of the creature, or a symptom of disease?

Mr Stainton referred to Duponchel's account of the larvæ as affected with "une légère diarrhee" when nearly full fed.

Mr. F. Moore had not observed any of his larvæ of Saturnia Cynthia to be similarly affected; and he had fed some of them on Ricinus communis.

The Secretary read the following, communicated by Mr. S. Stone, of Brighthampton, under date of the 2nd of September, 1865:—

"*Scarcity of Wasps.*—The immense falling off in the number of anticipated wasps' nests which has taken place is most extraordinary. I had occasion to remark in the spring on the swarms of queen wasps which made their appearance, and on the unusual number of nests that were then to be found, I myself having observed no less than thirty-five in one day (April 28th), but one after another became deserted, some in a few days after their commencement, others at periods more distant, till all had become tenantless, none having attained to a size larger than about that of an orange. I have found during the season sixty-one nests, but at the present time only two of the number are progressing; the others I added, as fast as they became deserted, to my collection. The two above mentioned I removed some time ago to the interior of a warm room in a house I have used for the purpose of rearing wasps and observing their habits for some years past, where the work is at present being carried on; but I am in daily expectation of seeing the insects succumb to disease, as was the case with two other colonies I previously had at work in the same room: all seemed to be going on well with them till the 5th of August, when a sudden diminution in the number of workers, and a cessation from work, took place in both nests simultaneously; and on examining them two or three days afterwards I found that nearly all the workers had disappeared, and that all the larvæ had sickened, died, and were in an advanced state of decomposition, having turned perfectly black: and this was also the case with very many of those that had spun themselves up and changed into pupæ; whence I infer that an epidemic more fatal in its character than that of last year, earlier in its appearance, and far more wide-spread, attacked the family of social wasps, and has resulted in their almost total destruction. That earwigs (which swarm to an extent I never before witnessed), wood-lice and ants have been in some degree instrumental in causing the destruction of nests, especially during the earlier periods of their formation, I have had abundant opportunities of proving; still that would hardly account for the universal destruction that has occurred. I did not find that more nests became deserted during the short periods of rain we occasionally had than during periods of the most charming and delightful weather, or that nests situated in moist ground fared worse than those in very dry situations."

Mr. Baly mentioned that, contrary to what seemed to be the general experience, wasps were this autumn abundant near Aberdeen.

Mr. F. Smith had spent the month of August at Bournemouth, and had not seen a single wasp, whereas in the same month of the previous year he could have obtained in the same locality twenty or thirty nests any morning: he thought it not improbable

that wasps were actually *starved* to death during a long continuance of wet weather; this, however, would not account for their present disappearance.

Prof. Westwood said that one of his correspondents had lately inquired of him whether earwigs were injurious to bees; Mr. Stone's communication answered the question with respect to wasps, and he had no doubt that earwigs, which were this year unprecedentedly numerous, were equally injurious to bees, penetrating the hives and consuming the larvæ.

Mr. Bond read, from the 'Standard' newspaper of the 2nd of September, the following extract from the letter of a correspondent at Coburg:—

"In the centre of the town stands the large and handsome church of St. Maurice, built in the early part of the fifteenth century, and having two towers, one unfinished, as is often the case (and history gives the reason here, that Tully, in the Thirty Years' War, carried off the money applicable to the purpose), the other reaching to a total height of 263 feet, of which the uppermost part is placed over an open belfry, and has a spiral termination of wood, covered with copper, out of which rises a long spindle, at the top of which is a golden ball, and above that again is the weather-cock. Shortly before five o'clock in the afternoon of the 28th of August, smoke was seen to issue from the small spire above the belfry. The news soon spread that the church-tower was on fire; the fire alarm was given, according to the German fashion, from the church-tower itself, the brigade of volunteer firemen donned their helmets, and rushed in all haste from their ordinary vocations to the post of danger, an express messenger was sent to the burgomaster, who was gone to a neighbouring village, and the whole population turned out to see the curl of smoke gradually ascending and dissappearing in the clear blue sky above. Nor was their anxiety for the old church without cause; twice before in its history, once in 1807 and again in 1812, had the lightning set this very tower on fire. But whence now could the fire have come? The spot whence the smoke issued was far above any place in the tower ever used or visited; the day was bright and clear, and there had not been, and was not, any sign of a storm; the heat of the sun, it is true, was excessive, but no one could remember an instance where fire had been kindled by the lord of day. Whilst the spectators eagerly discussed these questions, hundreds of eyes were watching the ascent of the firemen from point to point until they reached the belfry under the spire; a scaffold was there hastily constructed, upon which a ladder was raised and the cause and seat of the fire closely investigated. Sundry motions of the fireman on the ladder on high excited no little mystery below, for he seemed to be engaged in conflict with wasps or other warlike insects. The news soon sped to earth that the cause of all this commotion was millions of ants which had settled in countless numbers upon the steeple; indeed, all over the upper part of the tower: and as they rose to perform their gyrations in the air had created that appearance of smoke which could not be detected as a counterfeit from below. The mysterious motions of the man on the ladder were now explained. They were his attempts to beat off his insectile companions from himself, upon whom they were quite as disposed to settle as upon the church steeple itself. I am not sufficiently acquainted with insect life to be able to speak scientifically as to the genus of ant that suceeeded in so distinguishing itself; but having seen several that were brought down from the spire, I am able to say that they were an ant of a reddish colour, slightly larger than our common black ant, and of course furnished with wings."

Mr. Wormald had seen something very similar at St. Albans on the 26th of August, when a swarm of small black ants presented the appearance of smoke issuing from the Abbey.

Prof. Westwood directed attention to the remarkable form of Pteratomus, a Hymenopterous insect, as figured by M. Packard in his paper "On the Humble Bees of New England and their Parasites;" the anterior wings were divided or cleft like those of a plume-moth (Pterophorus).

New Part of 'Transactions.'

A new Part of the 'Transactions' (Tr. Ent. Soc., 3rd Series, vol. iii. Part 2), containing Mr. Pascoe's "Longicornia Malayana" (continuation), and being the third Part published during the present year, was on the table.—*J. W. D.*

Popular Names in Natural History.—May I be allowed to draw Mr. Alston's attention to the fact that the German word for "willow" is "weide," and that in some parts of Switzerland the same is pronounced "wiide," both of which are evidently much more closely allied to "wheetie" and "whey" (as used in Lanarkshire for the willow wren), than the expressions mentioned (Zool. 9709). Perhaps the readers of the 'Zoologist' will pardon me if I take this opportunity to draw their attention to a subject which is often abused; I mean popular names. But, before I proceed, I wish it to be clearly understood that I do not for one moment intend to speak in favour of the so-called "popular names," as given by some, for instance, to the different species of butterflies. To plead for such as "gate-keeper," "Queen of Spain," &c., would be simply absurd; but I allude to those quaint and often striking expressions for certain insects which are to be found here and there in the idioms of sundry nations; they are often full of thought and precise meaning, and I have no doubt that if this mine is properly worked in this country it will amply repay the little trouble it gives, especially if extended to the comparison of the same word in distinct but kindred languages. An interesting instance of this kind was given by Mr. E. C. Rye in No. 15 of the 'Entomologist's Monthly Magazine' (p. 52), and I cannot but think that a little attention to the subject will soon produce numbers of similar facts. If some of our working entomologists and general observers who cross the land in its length and breadth will kindly bear in mind what is said above, and note down such names as they happen to hear, including other bits of entomological folk-lore, as proverbs, sayings, stanzas, &c., about any insect, it might be useful to see them recorded in the pages of the 'Zoologist;' or, if not considered valuable enough, I shall be glad to receive any direct communications, for it cannot be contradicted that the tendency of our time is to level all those provincial peculiarities of the language; and to save what may still be saved is the purpose of this note.—*Albert Müller; 2, Camden Villas, Jasmine Grove, Penge, S.E., August* 31, 1865.

A Male Chimpanzee at the Zoological Gardens.—The Zoological Society has just received a male chimpanzee. The introduction of the stranger to the female in the gardens was an amusing fact. The two creatures rushed into each other's arms, like stage-lovers. They kissed each other; then the male chimpanzee patted the female's

face, danced round her, took her round the waist, as if he was going to waltz, when they expressed their joy by dancing and howling in ludicrous concert.—*Athenæum.*

Ornithological Notes from Shetland. By H. L. Saxby, M.D.

(Continued from page 9591).

April, 1865.

Brambling.—On the 8th of April we were visited by a few bramblings; the wind was blowing heavily and varying between N.W. and S.W. On the 28th some large flocks arrived with N.E. wind and snow. On comparing specimens shot in April with those shot in autumn the more brilliant colours of the former are very apparent.

Hooper.—On the 11th (wind blowing strongly from N.) some hoopers rested in the Loch of Cliff, and others were seen at frequent intervals during the remaining part of the month.

Teal.—Teal in large flocks visited the Loch of Watley on the 11th. I have seldom observed them there in such large numbers.

Goldeneye and Tufted Duck.—Goldeneyes and tufted ducks increased in number during the first two weeks in April.

Bartailed Godwit.—The bartailed godwit is quite rare in Unst, and also, I believe, in other parts of Shetland. One appeared at Baltasound on the 18th (wind N.E.).

Wheatear.—The first wheatear, a male, also arrived on the 18th.

Ring Ouzel.—On the 22nd a ring ouzel visited the garden. It appeared to be an adult male, but was so shy that only an occasional glimpse of it could be obtained. The day was bright and calm, but on the preceding day there had been a light, steady breeze from S.W.

Lapwing.—Lapwings were said to be laying very early in the month, but I saw no eggs before the 23rd.

Guillemot.—The full number of guillemots has now arrived, and long rows of them may be observed sitting up on the high rocks. A specimen shot at Baltasound on the 20th, several miles from the breeding station, had the front of the neck entirely white, but all that were shot under the cliffs at Burrafirth four days later were in perfect summer plumage.

Ringed Guillemot.—On the 24th I shot several specimens of the ringed guillemot at Burrafirth, from among those of the common kind. This was accidental, it being of course impossible to distinguish the one from the other as they fly out of the cliffs. Even when a telescope

shows one sitting upon the rocks, it is sure to be lost among the crowd as soon as it takes wing.

Shag.—Nearly all the old shags have paired and are to be seen sitting up in their nesting-places. The brilliant metallic-looking green and bronze of their plumage presents a superb appearance in the sunlight.

Raven.—Many ravens are now sitting, but some have already hatched. Although the amount of damage they commit is still quite sufficient to raise every hand against them, I am told that in this neighbourhood they are not so mischievous as they were some years ago. At that time their cunning and voracity had caused such serious losses among the live stock, that Dr. Edmondston devised a very effectual method of checking them, and accordingly destroyed a whole family, by poisoning the carcase of a lamb and lowering it over the face of a cliff, near the nest of one very old and exceedingly wary couple. The immediate and almost entire cessation of the nuisance proved that his suspicions as to the ringleaders had not been misplaced. Young pairs are less destructive, and being less cunning are far easier to shoot, but the old ones time their visits to the farm-yards so accurately and exercise such caution that to kill one is considered quite a feat. Occasionally, however, their prudence overreaches its object. A friend of mine, wishing to destroy one of these birds, set a rat-gin near its haunts and covered it carefully with fine mould, leaving nothing but the bait exposed. But the bird was not to be thus deceived; he would walk round the trap, and even hover above it as though about to make the fatal pounce, the demonstration invariably resulting in his retiring to a small hillock close at hand, from which he seemed to fancy he could eye the tempting morsel in safety. This state of things lasted for two days, when my friend slyly buried the trap in the hillock, neatly covering it with moss, but leaving the bait in its old place. Scarcely had he left the spot when the raven came circling over the bait, and immediately afterwards, alighting upon the hillock to reconnoitre, was instantly caught by the feet.

Hooded Crow.—I observed some hooded crows repairing their nests early in April. Like the raven, they will occupy the same nest for many years in succession, if not disturbed. One pair, which is easily known by the broken leg of the male, has built regularly among the rocks at Swinee-ness for upwards of twenty years, not always, however, selecting the same spot for their nest, in consequence of the frequency with which it has been robbed.

Longtailed Duck.—Among the longtailed ducks there seems to be a large proportion of males this season. Sometimes in calm weather pairs may be observed far out at sea flying in a northerly direction.

Scaup.—Pairs of scaups are still about the voes, and a few may be observed in the fresh-water lochs.

Turnstone and Purple Sandpiper.—Turnstones and purple sandpipers are abundant upon all parts of the coast, and as yet show no signs of departure. The plumage of the former species has now become considerably faded.

Starling.—Flocks of starlings are breaking up, and pairs may be seen examining holes and crevices, as if with the intention of soon commencing their nests. One pair has, to my own knowledge, occupied the same hole for eight successive years.

Ringed Plover and Dunlin.—Ringed plovers and dunlins are now selecting their mates, thus causing the rapid dispersion of the small parties which returned to their breeding-grounds last month.

May, 1865.

Common and Blackheaded Gulls.—Common and blackheaded gulls are reappearing in the neighbourhood of their breeding-grounds.

Wheatear.—On the 2nd of May I first observed wheatears building. The nests of this species vary considerably, not only in appearance, but also in the nature of the materials of which they are composed. Every one that I have seen has contained feathers. A nest found in a garden-wall was constructed as follows: first there was a large mass of fibrous roots, moss, dead weeds and hay, loosely spread upon the bottom of the crevice by way of a foundation; upon this was a cup-shaped layer of smaller fibrous roots, and again one of fine roots, intermixed with cow's-hair, upon which was another of similar materials, with the addition of about a third part of hay. Upon this there was a distinct carefully-wrought lining in three layers, the first consisting of pieces of twine and carpet-worsted, the second of a thick mass of cow's-hair, and the third of a large quantity of small feathers. I have often seen the male bird carrying the materials, but usually he flits restlessly hither and thither, watching his more industrious mate, and occasionally rising upon wing to utter his short but cheerful song. I often see these birds in trees, and used to think that this habit was more common with young birds, but I imagine that the greater abundance of the latter led me into error. Both old and

young seem to prefer the topmost twigs. Sometimes the nest is situated in a hole, in the face of a low peat-cutting, never very far back, and sometimes in a crevice upon the sun-dried surface of the peat-moor itself. Often when approaching a nest in the former situation I have seen the sitting bird fly out hurriedly while I was yet many yards distant, and, being on the level ground above, of course out of sight. In these cases it is probable that the vibration caused by my footsteps was the cause of alarm.

Brambling.—On the 2nd of May large numbers of bramblings arrived with a strong S.W. wind.

Purple Sandpiper.—Numerous parties of purple sandpipers are still to be observed among the rocks.

Whimbrel.—Whimbrels have beeome very numerous during the last few weeks, and are to be heard, if not seen, almost everywhere.

Skua and Richardson's Skua.—I am not sure when these birds arrived, but I saw one of each for the first time this season when I visited Burrafirth on the 3rd of May.

Manx Shearwater.—Manx shearwaters were found in their burrows on the 3rd.

Black Guillemot.—Black guillemots in gray or mottled plumage are still numerous.

Lesser Blackbacked Gull.—Lesser blackbacked gulls were in pairs very early in the month.

Golden Plover.—I saw the first four golden plover's eggs on the 4th, but they must have been laid some considerable time previously, as they were nearly ready for hatching.

Raven.—On the 4th a raven's nest in the Keene contained young ones nearly fledged.

Ringed Plover.—Ringed plovers are hatching. Between the 12th and 16th I found several nests, some containing fresh eggs and others eggs within a few hours of hatching. Although all the nests were in perfectly dry situations, there was always water near at hand. It is very difficult indeed to surprise the ringed plover upon its nest, even when the spot has been carefully marked.

Twite.—Twites' eggs were found very early in the month. During the summer there is scarcely the channel of a mountain burn which does not contain at least one nest. These birds commonly sit very closely, so that it would be difficult to find them in the above situation were it not for their inability to resist flying out when they feel the shock of a pair of feet as the intruder jumps across the burn.

JULY, 1865.

Golden Plover and Snipe.—On the evening of the 3rd of July I started from Lerwick on foot, being too much pressed for time to wait for the sailing-packet, and from that time until noon next day golden plovers were never out of hearing, seldom out of sight, except when I was crossing two narrow sounds which lay in my way. All night long the plovers were in full activity, whistling all over the moors and frequently accompanying me for several hundred yards. By imitating their call, I even caused them to alight in the dusty road, and so little fear did they show that when my near approach made them take wing they merely flew for a very short distance, and then ran in front of me as before. But the moment I ceased to answer their whistle and advanced silently, they were sure to rise hurriedly with a peculiar note of alarm, seldom venturing near me again unless I repeated the signal in the same manner as before. A plover dashing past at full speed will often pause and alight on hearing a tolerably accurate imitation of its note, but this seldom takes place when the birds are in flocks or flying high. When I reached Baltasound (about fifty-five miles distant from Lerwick by the road) plovers were still to be seen in every direction, nor did I observe that their number was any greater during the day than in the night. When do plovers sleep? I have been upon the hills at all hours, and at all seasons, and have almost invariably found these wakeful birds upon the alert, not only close at hand, but whistling far away where no human being could have been near them. Since April the weather has been so unusually dry that upon the moors there is scarcely a burn or even a stagnant pool to be seen. I saw no snipe in the day-time, but at night I heard them in many places. When I was aware of the vicinity of a stream I proceeded cautiously, and in most cases with the result of stealing unobserved upon a snipe, feeding near its margin. Occasionally there were several together, and the herbage was so short that their outline was distinctly visible, although the night was cloudy and unusually dark for the time of year. On my first observing them they were always walking slowly, now and then stopping to touch the ground with their bills, but the moment they caught sight of me they stopped abruptly and squatted closely, with the bill sloping downwards and the head usually drawn back.

Curlew, Whimbrel and Common Gull.—Curlews and whimbrels were also upon the alert, having, I suppose, eggs or young in the neighbourhood, otherwise they would have been less bold. Occasionally

they would come dashing over my head, uttering loud cries, wild enough at any time, but sounding most unearthly when mingled with the yelping of the common gull and the mysterious drumming and clicking of the snipe upon the desolate peat-moors at midnight. There were not many common gulls, and, so far as could be ascertained, they were not upon the watch, but only approached me when I happened to intrude in their haunts.

Wild Duck.—Early on the morning of the 4th I came rather suddenly near a female wild duck and two young ones, which were sitting among the stones at the edge of a rather extensive loch. The young ones had apparently been hatched about three weeks or a month, and rushed off into the water, with extraordinary speed, considering the broken nature of the ground. The old bird, fluttering and tumbling into the water, went splashing along with wings and feet quite in a different direction, which happening to be the one in which I was going, I followed at leisure. When the young ones had proceeded about eighty yards from the land they dived, and I saw them no more, but the old bird, after alternately flapping along the surface, and, upon my approach, rising for about a yard and flying steadily for a short distance, suddenly rose for about ten feet, quacked loudly two or three times, and made a wide sweep to the spot from which she had been disturbed.

Wheatear.—Well-fledged young wheatears were very abundant early in July.

Great Northern Diver.—About the end of June, Mr. W. Hamilton. observing three northern divers near the shore at Bressay, concealed himself behind a boat, and, as they neared him, shot two. One was an adult in perfect summer plumage, the other a young one, about six inches less in length. The one which escaped was also evidently a first year's bird.

Land Rails.—Land rails are still to be heard, but chiefly at night. I have just heard of one which was shot in a turnip field last November. In the Catalogue of the Birds of Orkney by Dr. Baikie and Mr. Heddle, this species is mentioned as probably remaining there all the year, several having been dug out of old turf-dykes during winter. On the 14th a mower accidentally laid bare a land rail's nest, containing ten eggs almost ready for hatching, but upon my reaching the spot shortly afterwards the bird was nowhere in sight, although she had been seen there less than half a minute previously. I remained for about five minutes examining the nest and eggs, the man who accompanied me standing all the while upon a handful of hay, which he had thrown

there to mark the place, but to our surprise, the moment he began to move away the bird flew out from between his feet, and went down into the standing grass about twenty yards distant. The nest consisted of a nearly circular hollow, three inches deep in the centre, and carefully lined to an inch in thickness with fragments of weeds and small pieces of moss. The cavity measured seven inches across.

Sky Lark.—Although there are plenty of well-fledged sky larks in the fields, eggs are still to be met with. Two nests, each containing four nearly fresh eggs were found on the 14th. I often watch sky larks on the nest, and with a little care frequently succeed so far in gaining their confidence that they will allow me to stroke them upon the head and back while they are sitting.

Redstart and Swallow.—On the 16th (wind S.S.W.) a redstart, either an old female or a young bird of the year, and two swallows, made their appearance at Halligarth. Both species still remain here, the former keeping well concealed among the bushes, the latter hawking near the house and garden, occasionally, with their gentle notes, reminding one of Old England.

Arctic Tern.—Arctic terns are pretty numerous. Very few have hatched yet, but I saw the first young one, about three days old, on the 22nd. On fine summer evenings whole parties of these beautiful birds may occasionally be seen skimming above the meadows in pursuit of winged insects.

Snipe.—On the 25th, while crossing a piece of damp ground several hundred feet above the sea level, I found the nest of a snipe. It was situated in the heart of a tuft of long coarse grass, and contained one whole egg and some broken shells, which bore distinct marks of having been hatched a few days previously. On opening the whole egg I found, as I expected, a dead, but perfectly formed chick. Having very frequently observed similar instances among the waders, I have been led to imagine that those young ones which are hatched first will sometimes, in their impatience to see the world, entice the parent bird from the nest, thus leaving to perish any eggs which may remain unhatched.

Guillemot.—A young guillemot, caught below the cliffs a few days ago, is fully feathered except upon the top of the head, and is about the size of a little auk. It is already very tame and runs about with great activity. Always when running, and most commonly when standing, it rests upon the toes, not upon the tarsus.

Lesser Blackbacked Gull.—Most of the lesser blackbacked gulls have hatched, but a few still have fresh eggs. The latter are most

likely the property of those birds which have already been robbed, for they usually occur in those situations which are most easily accessible to egg-gatherers.

Twite.—On the 25th I found a twite's nest upon the high top of Vallafiel. The eggs were, to all appearance, within a week of hatching. The nest was very snugly placed between the perpendicular face of a large stone and the tall surrounding heather.

Heron.—Great numbers of herons have lately appeared, but I observe very few adults among them.

Crane.—Two of these rare birds have just been killed here: I will add particulars in a postscript.

HENRY L. SAXBY.

Baltasound, Shetland, July 31, 1865.

Postscript.—In the preceding communication I mentioned the occurrence of the crane (*Grus cinerea*) in the island of Unst, at the same time proposing to give some further particulars in my next. To those of my readers who are acquainted with the crane in its wild state my remarks may perhaps appear trivial, but here I would observe that if the 'Zoologist' is to continue to be what it has been for many years, the most complete record in existence of the habits of birds, not merely a dry list of captures, no fact which contributes even in a small degree to the great end in view can be deemed unworthy of notice. Moreover, it seems only just that he who is instrumental in causing the scarcity of a species should also make the only amends in his power to his brother naturalists, by allowing them to avail themselves to the utmost of every advantage, however slight, which, as a rule, he has gained by accident alone.

One evening about the middle of last June, four large birds, uttering loud cries, which were described as resembling those of the wild swan, were observed flying across Baltasound in a southerly direction, and, slowly descending, they became lost to view against the hills. Some days afterwards a large bird, said to be one of the four, was shot at Haroldswick, in a meadow near the sea, and brought to Mr. Thomas Edmondston, of Buness, where it was identified as a specimen of the crane, and soon afterwards the skin was sent to Edinburgh to be stuffed. No red colour was observed upon the top of the head, but as that fades soon after death it might easily have been overlooked. From all that I can hear, the bird seems to have been in the plumage

of its second year. The measurements, which were taken before skinning, have been given to me as follows:—

Length, from middle claw to tip of bill . .	4 feet 10 inches.
Length, from tail to tip of bill	3 „ 10 „
Expanse of wings	6 „ 9 „
Bill to gape	4½ „

On my return to Shetland, early in July, I was informed that one of these birds was supposed to be still remaining in the island; but nothing further was ascertained until the 12th, when it was observed near the Loch of Cliff, sometimes upon the wing, but more frequently walking about in the corn-fields. The last time it was seen that day it was standing in the little holm, far out of shot from the shore. Next day diligent search was made for it without the smallest success; but a man who lives near the deserted village of Cliff assured us that the bird had of late been almost constantly seen in that neighbourhood, and his description convinced me that it was not a heron—a bird which here, as elsewhere, is often called the crane. He said that it was at least as high as a pony, that it never went very near the water, but preferred the meadows and the fields of young corn, in which it walked about with slow steps, now and then "picking at the ground, for all the world like a hen." On the 17th, as I was crossing the hills above Cliff, the man ran to me in great haste with the news that the crane had just gone down near the loch, upon the steep slope which faces the north. Wishing to make quite sure as to the species before going home for a gun, I crept among the long grass to the top of the hill and peeped over, but as the sun dazzled me, the bird rose before I was aware of its presence. It got up, with a low guttural cry, sailed off with outstretched neck towards the loch, then turned facing the wind, and soon afterwards alighted upon the same slope, some three hundred yards distant from where it had just risen. As it flew, the ends of the quills could be seen widely separated, giving the wings a peculiar fringed-like appearance. Very carefully withdrawing from sight, I hastened to Baltasound, about a couple of miles distant, for a gun; but, as is usual in such cases, a party of visitors had called during my absence, and carried off both guns and ammunition. More than an hour was spent in searching for another, but at last I succeeded in procuring a tremendously heavy old single-barrel, a little loose powder and some rabbit-shot; and thus provided I hurried back. On my arrival the bird was nowhere to be seen, and I was about to leave, when it came sailing back, in a sneaking sort of way, under shelter of

the hill, and went down near the old spot. I got nearer, without being observed, and was just wondering how to proceed next, the last sheltering patch of weeds having been reached, and the bird still far distant, when the latter, which until then had been walking slowly about with neck retracted and shoulders humped,—exactly in the position chosen by Yarrell for his figure of the heron,—suddenly stretched its neck to the full extent, ran several steps, and then took wing, uttering the same peculiar croaking sound as before. I fired instantly, but seeing that no serious effect was produced, threw myself flat among the long grass, and the bird, changing its course, flew directly over me, and so close that I could distinctly see its eye. Then, while I was reloading, it took a long flight, circling about in various directions, sometimes sweeping close to the ground, as if about to alight, and then rising so high in the air as to be almost out of sight. At length it settled upon the opposite side of the loch, whither I followed it, and was nearly within shot, when a sheep-dog caught sight of it and drove it up. Then for upwards of three hours I continued the pursuit, the bird keeping an exceedingly sharp look out, sometimes alighting in corn-fields or moist places, occasionally walking about and feeding, but always flying off for half a mile or more as I approached. Then I lost sight of it for nearly an hour, and was far on my way home, when I caught a momentary glimpse of its wings as it went down near the old place. It remained there for a few minutes, and then went off to a field surrounded by a rough wall, two feet high, where it remained feeding so contentedly that I made sure of success at last. Crawling among the stones and long grass I managed to gain a cross-wall, which would have exactly answered my purpose, but, at the very moment when I was passing the only gap, the bird, raising its long neck, caught sight of me, and was off in an instant. Having watched it fairly out of sight, I went home greatly disappointed.

Next morning, being provided with my own gun, I went again in pursuit, this time accompanied by my brother-in-law, Mr. Thomas Edmondston, jun. Two riders were seen making for the very spot where we expected to find the bird; but, after a smart race, we intercepted them just in time, and, almost breathless with anxiety and haste, we peeped over the brow of the hill, very cautiously indeed, for the extreme wariness of the bird was by that time well known; then we rose to our knees, next to our feet, but not a feather was to be seen. We were about to descend the hill, and had already proceeded some steps, when, catching sight of the bird on a level place at the foot of the hill, and about three hundred yards distant from us, we immediately

dropped behind a friendly hillock, and, making a wide sweep inland, returned to the top of the hill, as nearly as possible above the desired spot. Reckoning that the bird would be far out of shot from the nearest concealment, we agreed that our only chance was to creep along the ground as far as possible, and then run in at once. This we did, and as the bird got up we ventured a very long shot with B B as it flew towards the loch. On receiving the shot it sailed steadily for a few seconds, and then, dropping upon its feet in shallow water, ran for the land so rapidly that we could scarcely overtake it, and even then the furious thrusts which it delivered with its bill rendered its despatch a matter of no small difficulty. It was only then that we became aware that we had both fired, the two shots having occurred so precisely at the same moment that only one report was perceptible. In consequence of the great size of the bird neither of us could carry it alone without injuring it as a specimen; therefore we bound it lengthwise with our handkerchiefs to the longest gun, and thus brought it in triumph home.

During the pursuit on the previous day I noticed that the bird never rose without first running several steps, and that as soon as it became aware of danger it never failed to utter the peculiar guttural cry already mentioned. It rarely circled immediately before alighting, but, with outstretched motionless wings, sailed gradually closer to the ground and dropped rather suddenly. Then it would pause to tuck its large wings comfortably away, very soon afterwards beginning to walk about slowly in the position already described, occasionally stopping to raise its head and look around, or to pick up something from among the grass. On taking wing, and generally when descending previously to alighting, it stretched out the neck in a line with the body; but when rising in full flight it kept the neck retracted and the head withdrawn to the shoulders. When it was high in the air, and seemed bent upon a long flight, the wings were flapped slowly, but at regular intervals, rather longer than I have observed with the heron; at other times the wings were usually kept fully expanded, and only moved occasionally. The flight, though apparently heavy, was nevertheless very rapid, and, as far as I could observe, the bird preferred rising head to wind; indeed, even upon the ground, it nearly always exactly faced the quarter from which the wind was blowing.

On skinning the specimen, it was evident that the contents of both of our barrels had been well directed; one wing was broken, and other wounds were numerous; but I was surprised to find several shot lying loose beneath the skin of the back. Although the bird was evidently

immature the tendons of the wings and legs were exceedingly strong, and in some situations even partly ossified. The stomach, which was large and very muscular, was filled with large black slugs and pieces of stone (principally quartz), some of them of considerable size, measuring about half an inch square. Most of the feathers composing the under wing-coverts presented a very peculiar appearance, large patches upon them being covered with what I take to be the ova of some kind of parasite, but not being certain upon that point I enclose some of the feathers for your opinion. The nature of the food probably accounts for the bird's preference for the north, or shady side of the hills.

Unlike the herons, the crane has a small neck, consequently it is necessary to slit the skin in order to clean the skull.

I append a description of the specimen, not being able to find a similar one elsewhere.

Length, from middle claw to tip of bill	4 feet 8 inches.
Length, from tail to tip of bill	3 „ 8 „
Expanse of wings	6 „ 7 „
Wing, from carpal joint to tip	1 „ 9 „
Bill, from front to tip	$3\frac{7}{8}$ „
Bill to gape	$4\frac{1}{4}$ „
Tarsus	9 „
Middle toe and its claw	$3\frac{7}{8}$ „

Sex male.

Bill horn-colour, tinged with green, slightly darker along the ridge and palest at the tip. (After drying the whole of the bill becomes dark reddish brown.)

Iris rich golden yellow, gradually becoming darker towards the pupil.

Head and Neck.—Crown and fore part of the head dull crimson, with scanty bristle-like feathers of very dark bluish gray; the feathers upon the lore similar in appearance but closely set; from the eye to the occiput an elongated patch of dirty white, the feathers of the occiput itself somewhat lengthened and pointed, dusky bluish gray, with their concealed portion dirty white; chin, throat, and upper two-thirds of front of neck dull lead-gray, the shafts of most of the feathers slightly darker; back of neck rather paler than the front, and very obscurely mottled with light brown; upon the sides of the neck the colours are still paler; lower third of front of neck pale grayish brown, the shaft lines of feathers considerably darker.

Upper surface of body.—Upper scapulars and upper half of back dull lead-gray, each feather with a darker shaft and brownish tip; lower scapulars similar in colour, but darker, especially towards the tips; lower half of the back with less brown than the upper half; upper tail-coverts very dark bluish gray at the tips, their concealed portion brownish gray.

Tail.—Shafts of the feathers white, except at the tips; in other respects these feathers resemble the upper coverts, but the dark colour occupying less space causes a lighter irregular transverse band.

Wings.—Third quill slightly longer than the second and longest in the wing. Lesser coverts lead-gray, tinged in some parts with pale brown, the shaft lines nearly black; greater coverts of a browner hue, much elongated, and with the webs disconnected, the concealed portions of the inner ones brownish black; alulæ and primaries black, the latter brownish at the tips; secondaries and tertials black with white shafts and paler at the base, the innermost of the tertials brownish towards the tips. In the closed wing the tertials are longer than the primaries, and the last feathers of the tertiary coverts are longer than the tertials themselves. The long, drooping "plumes" are formed by the greater coverts alone, especially by those nearest to the body, and not by the tertials.

Under surface of body indistinctly mottled with pale brownish gray and pale lead-gray, the shafts darker; at the upper part of the breast a few dirty white feathers are intermixed.

Feet, tarsi, and bare part of tibiæ brownish black, tinged with olive, the under surface of the feet paler; claws black.

HENRY L. SAXBY.

Baltasound, Shetland, August 21, 1865.

Ornithological Notes from North Lincolnshire.

By JOHN CORDEAUX, Esq.

(Continued from page 9714.)

AUGUST, 1865.

Ringed Dotterell.—August, in Humber Ornithology, may be called the month of the ringed dotterell, as invariably during the first week in this month, or within a few days of that time, the marshes are visited by large flocks of these social and lively little birds, here better known under the provincial name of "black heads," the word "dotterell"

being only used to describe the true dotterell (*Charadrius morinellus*). These flocks of ringed plovers are as regular in their time of arrival in the Humber district as are the gray plovers when on their passage northward during the spring migration, by far the greater portion of these latter birds arriving, no matter how backward the season, during the first week in May. I have for years observed that, on this coast, these two birds are truer to a certain date of arrival than any other of the many species of migratory birds which visit the Humber. Like the blackheaded gulls, the ringed dotterells prefer a level and dry piece of fallow land as a resting-place, never keeping long, however, to one spot, and it is not unusual at this season to see hundreds together on the wing, sweeping across the marshes from one favourite resting-ground to another. When thus changing quarters, they skim along near the ground, rising and falling in their flight, and alternately exhibiting the light and dark shades of their plumage, all the time keeping up a constantly-repeated call-note, which, uttered from so many small throats at once, has an extremely pleasing and musical effect,—a certain sweet and wild melody in keeping with the scene: it is one of those familiar sounds which remind us that summer days are nearly over, and the golden autumn has come. All around in the open marsh are—

> "The thousand waves of wheat,
> That ripple round the lonely grange."

More frequently, however, these yellow fields of grain are laid and tossed about by summer storms into every shape of confusion, bearing no inapt resemblance to a wild and stormy sea: to make the resemblance more perfect still, along the hollows of these storm-tossed waves of grain comes the swift dashing flight and wild musical cry of the little dotterell, or perhaps a group of blackheaded gulls on their way from the distant wolds, slowly beating along, flying dead against the freshening breeze, and almost brushing with their pure white breasts the waving heads of corn. Small flocks of ringed plovers are found on the Humber during the greater part of the year. August, however, is their great month: within a few weeks the greater part of the flocks now in the neighbourhood will have left.

Whimbrel.—On several occasions towards the latter part of the month I have seen flocks of whimbrel pass over this village, generally flying in a south-west direction, and at such an immense height that they looked mere snipe in size. Had it not been for their well-known call-note, constantly repeated as they flew along, it would have been

impossible to identify them. But few of these birds visit the Humber district during the autumn months compared with the larger flocks which for a time take up their abode here during the period of the vernal migration.

Lesser Blackbacked Gull.—These gulls are not infrequent on the Humber coast during the present month. I have so far, however, not observed them on this coast at any other period of the year. I saw several of them to-day (August 23rd), both old and young birds, on the flats; in some cases four or five together, generally young birds, the old full-plumaged gulls keeping in pairs. They never in any weather leave the Humber or its flats for the inland district, as is the case with other gulls. This I have observed to be also the case with the great blackbacked gull; during a residence of many years in this parish I never remember seeing one of them on the land side of the Humber embankments. Both species are strictly marine in their habits.

Heron.—Herons are much more frequently met with in the marshes during the autumn than at any other season: I lately saw as many as nine together. The few which remain the winter appear to be all old birds. A party of herons, five, six and sometimes even more in number, have now for many years haunted a certain retired portion of the marshes, returning regularly year after year in the later summer and autumn to fish in the same drains and pools, occasionally changing their fishing-grounds to the Humber flats, where they follow the retiring tide, as it slowly creeps away down the muddy plain, keeping a sharp look out for any small fish left behind in the little salt-water pools. In the inland drains they catch eels and flat-fish; the latter I have sometimes found on the drain-banks, pierced through with one blow of the heron's sharp bill; but in consequence, I should suppose, of the great width of the fish, they find it impossible to bolt it, and are reluctantly compelled to leave it for the carrion crows.

Snipe.—It is not often that snipe visit us so early as they have done this year. I have on several occasions during the month put them up from the drains near the Humber.

Knot.—Some small flocks of knots were seen on the flats on the 28th of August. My informant, an old gunner, got within a short distance of a dozen of them which were feeding on the fore-shore. This is earlier than I ever remember them to have arrived in any previous season.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
September 1, 1865.

Ornithological Notes from Shropshire. By JOHN ROCKE, Esq.

(Continued from p. 9688.)

Great Gray Shrike (Lanius excubitor).—This fine shrike, which stands at the head of the Perchers, or second order of birds, has been frequently met with in this county, generally in the winter, and I am not aware that it has ever been discovered nesting with us. I have a good specimen, killed in Shrewsbury, near the flannel manufactory, and another at Acton Reynold. They differ a good deal in size, as well as in their marking.

Redbacked Shrike (Lanius collurio).—Few of our summer visitants exhibit a more strikingly handsome plumage than the redbacked shrike or butcher bird, and as it is far from uncommon, the same roads and lanes being frequented by the bird almost every season, its beauty is familiar to us. I have known a pair return to the same field, and almost to the same bush, for three or four years in succession, varying little in their dates of arrival. They appear to be more numerous in the neighbourhood of Ludlow than in any other part of the county, and they nest regularly in that district. The eggs are easily obtained; so much so that, as I have not seen any of the parent birds this summer, I fear, as a consequence, they are becoming scarcer.

Spotted Flycatcher (Muscicapa grisola).—This neat and most sociable little bird is common everywhere. The last of our summer migrants, it arrives with a regularity almost inconceivable. Few birds have so little fear of man: the nearer they can approach his dwellings, the greater their confidence appears to be. I have known two broods in succession reared in a summer-house, the nest being placed within two or three inches of the heads of persons who were continually passing in and out.

Pied Flycatcher (Muscicapa atricapilla).—I have seen this pretty little flycatcher several times in the neighbourhood of Downton Castle: the hollow trees by the side of the River Teme seem a favourite locality for their nests, one of which I knew of this summer, and I trust it remained unmolested. The bird has occurred more than once near this place, and a friend of mine took a nest and eggs near Ludlow a few years ago.

Common Dipper (Cinclus aquaticus).—Common on all our rivers and brooks, though, I fear, a heavy persecution has arisen against it, from the mistaken idea that it is a destroyer of the spawn of trout and

grayling. Be that as it may, I consider the cheerful song and interesting habits of this neat little bird would well repay any slight diminution of sport that might be caused on that account. I am happy to say they abound on the river, on whose banks I live, and rear their young in peace and safety. The nest, which is generally placed under a bridge or on the river-bank, looking like a shapeless bundle of moss, is in reality, when closely examined, a most interesting structure.

Missel Thrush (Turdus viscivorus.).—Well known in every part of the county as the "storm cock." It breeds very early in the spring, and at that time, forgetting its usually shy habits, fearlessly approaches the haunts and dwellings of man.

Fieldfare (Turdus pilaris).—Last winter this bird was very numerous, but for three or four preceding seasons it was a subject of general remark how very few had been seen.

Song Thrush (Turdus musicus).—A great many remain with us during the winter, though I have little doubt that numbers migrate to the south. At this time of the year they betake themselves, in large quantities, to the various turnip-fields.

Redwing (Turdus iliacus).—Far more numerous than the fieldfare, and appearing with much greater regularity: I see hundreds every evening coming in to roost in the laurel-bushes round the house. They appear to be very tender birds, as numbers are picked up dead and dying in the roads whenever we have a winter of any unusual severity. In the spring they congregate in large numbers in the high trees, whence they pour forth a pleasing jargon, which, however, I suppose, does not constitute singing.

Blackbird (Turdus merula).—A constant resident, and too common to require any remarks.

Ringed Ouzel (Turdus torquatus).—Most of the high uncultivated grounds in the county produce this bird in tolerable abundance. I have obtained them and their nests on the Black Hill, the Longmynd, the Steperstones, and the Clee Hills. Wherever the mountain ash grows, they will generally be found.

Hedge Accentor (Accentor modularis).—One of the prettiest, as well as the most common, of our native warblers.

Redbreast (Sylvia rubecula).—A general favourite, in spite of its pugnacious disposition. I have a nest of the robin, taken from a ditch-bank, in which the eggs, five in number, are nearly pure white.

Redstart (Phœnicura ruticilla).—A regular spring visitant, though their numbers vary very considerably.

Stonechat (Saxicola rubicola). — Common, and breeds with us every season, though not so numerous as the next and nearly allied species.

Whinchat (Saxicola rubetra).—Common everywhere.

Wheatear (Saxicola œnanthe). — Found chiefly in the higher grounds, though occasionally met with in the meadows by the river-side.

Grasshopper Warbler (Salicaria locustella). — Rather a rare bird, except in the neighbourhood of Shrewsbury, where it is far from uncommon. Being shy and retiring in its habits, I strongly suspect it is often overlooked, more especially by those who are not well acquainted with its singular note.

Sedge Warbler (Salicaria Phragmitis).—I was not at all aware, till within the last few years, how very common this pretty little warbler is in this part of the county. It not only frequents the sides of our streams and ponds, but I often find it in the hedges, far away from water. The song is pleasing, though at times harsh. The nest is most difficult to discover, being generally placed in the thickest rank herbage, a very little way from the ground.

Reed Warbler (Salicaria arundinacea).—Much less common than the last species. They usually live in colonies by the sides of ponds and meres that abound in reeds, to which they attach their beautiful nests. Ormond Park Pool, Crowsmere, near Ellesmere, and Hawkstone Park, are three localities in Shropshire where they breed in considerable numbers.

Nightingale (Philomela luscinia).—I am sorry to say there are, of late, few well-authenticated instances of the occurrence of the nightingale in this county. Coalbrookdale and Bridgenorth can boast of an occasional visit, but even in those genial soils there seems to be something wanting to induce this most interesting songster to stay with us. What constitutes that "mysterious line" over which it is not supposed to pass? There have been instances of its appearance at Kingsland, and in the Quarry Walk in Shrewsbury, but of course on the outskirts of a town the poor bird would have little chance of remaining long unmolested.

Blackcap Warbler (Curruca atricapilla).—The song of this charming little warbler is nearly equal to that of the nightingale, and is no doubt often mistaken for it. It is very common in this part of the county.

Garden Warbler (Curruca hortensis).—Much more local than the

last-mentioned bird, though I do not consider it by any means rare. From its great simliarity to the willow wren, I have no doubt it is often overlooked, and at all times it is a shy bird, pouring forth its song from the thick foliage of some tree or bush, carefully protected from observation.

Common Whitethroat (Curruca cinerea). — Probably the most numerous of all our spring birds: arriving with the greatest regularity they appear to disperse at once over the whole face of the country, and as all localities seem to them to be alike, every bush, copse and hedge is speedily tenanted by them.

Lesser Whitethroat (Curruca sylviella).— This bird was always represented to me as exceedingly rare in these parts; however, by a little careful observation, I am happy to say that such is not at all the case; in fact, in this district I consider it to be very common. In their habits they are even more shy and retiring than the common whitethroat, and are thus easily overlooked, though, when once a person is acquainted with their little harsh note, it is astonishing how frequently you may find them. They nest regularly every season in the shrubberies close to my house.

Wood Warbler (Sylvia sylvicola).—Easily distinguished from the other willow wrens by its superior size and much brighter yellow markings; it also makes its appearance many days later. The eggs are darker and more strongly marked than those of either of its congeners.

Willow Warbler (Sylvia trochilus).—Very common, and most evenly distributed over the whole face of the county.

Chiffchaff (Sylvia rufa). — Punctual almost to a day, this most interesting little warbler appears amongst us as if by magic, its cheerful note of "chiff-chaff" telling us that spring has really commenced. How its tiny little form is wafted with such unvarying regularity over the stormy billows of our Channel will, I trust, ere long, from the attention now paid to that most interesting subject, be cleared from all mystery and doubt.

Golden-crested Regulus (Regulus cristatus).—Constantly resident with us: they seem to delight in plantations of larch or spruce, though the yew-tree is a very favourite resort, especially in the winter. I have found their beautiful nests appended to the under side of the branches of that tree, as well as of the silver and spruce firs.

Firecrested Regulus (Regulus ignicapillus).—Has been met with occasionally in this county. Lord Hill has specimens in his collection, killed at Hawkstone: and more recently I have seen two examples

obtained in a garden in Shrewsbury. I believe Mr. Eyton has also met with the bird at Eyton.

Great Tit (Parus major), *Blue Tit* (P. cæruleus), *Cole Tit* (P. ater), *Marsh Tit* (P. palustris).—I have few remarks to make on these four species of the titmouse. It is sufficient to say that they are all equally common, and I have frequently seen each variety feeding at the same time, on the boughs of a larch-tree near the house.

Longtailed Tit (Parus caudatus).—Quite as numerous as any of the preceding species; but as they are more erratic in their movements and habits, they are perhaps not met with quite so often. They appear to keep together more than the rest of their tribe, and move about in much larger flocks. When we consider that each pair of birds rears from seven to ten, or even more than that number of grotesque little ones, this is not much to be wondered at.

Bohemian Waxwing (Bombycilla garrula).—I have seen several specimens of this beautiful bird, killed in Shropshire, though their occurrence there is most uncertain. I think the last I saw, in the flesh, was obtained in a garden in or near the town of Shrewsbury. I remember my father, the late Rev. John Rocke, shooting four, out of a flock of seven or eight, within half a mile of this house: this occurred in February, 1829. One pair of these birds is at the present time in my collection, and in an excellent state of preservation; the others belong to Mr. Henry Shaw, naturalist, of Shrewsbury, who has retained them as the last birds ever stuffed by his father.

Pied Wagtail (Motacilla Yarrellii).—One of our commonest and most familiar birds. I still hope some day to be able to add the continental white wagtail to our list of visitants, although it has hitherto been unknown, or perhaps overlooked, in this district.

Gray Wagtail (Motacilla boarula).—This fine wagtail is far from uncommon, being found on most of our streams and rivulets. Though not often seen in the full summer plumage, I believe they breed here, their numbers being considerably increased towards autumn.

Ray's Wagtail (Motacilla Rayi). — Tolerably plentiful, though more locally distributed than either of the preceding species.

Tree Pipit (Anthus arboreus). — Exceedingly common. Few birds exhibit greater variety in the colour and markings of their eggs.

Meadow Pipit (Anthus pratensis). — In October last I saw a bird fly up in a turnip-field, amongst five or six pipits or titlarks, which at first I took to be a canary. I shot it, and it turned out to be a very curious *lusus* variety of the pipit, the whole plumage being of a

bright straw-colour, without any dark markings, and the legs and bill white. I have it preserved in my collection.

Sky Lark (Alauda arvensis).—Common everywhere.

Wood Lark (Alauda arborea).—Not nearly so common as the sky lark, though a good many are, at times, to be found distributed over the county.

Shorttoed Lark (Alauda brachydactyla).—Has occurred once to Mr. Henry Shaw, of Shrewsbury.

Lapland Bunting (Plectrophanes lapponica).—There are two good specimens of this rare bunting in Lord Hill's collection, obtained near Shrewsbury. One of them, a young male, was taken in a lark-net.

Snow Bunting (Plectrophanes nivalis).—Occasionally found on the Longmynd, and other high ground, during the winter.

Common Bunting (Emberiza miliaria).—Common in many parts of the county, though I do not often see it in this district.

Blackheaded Bunting (Emberiza schœniclus).—Very common, frequenting the sides of rivers and brooks.

Yellow Bunting (Emberiza citrinella).—Too common to require any remarks.

Cirl Bunting (Emberiza cirlus).—I cannot help thinking this bird must have been overlooked in this county, or mistaken for the yellow bunting, as I have received specimens from Gloucestershire, and am informed that it nests occasionally in Herefordshire.

Chaffinch (Fringilla cœlebs).—Abundant everywhere.

Mountain Finch or Brambling (Fringilla montifringilla).—Found occasionally in the winter, sometimes in large flocks of its own species, but generally in the company of chaffinches, and the other frequenters of our rick-yards.

Tree Sparrow (Passer montanus).—Exceedingly common in this part of the county. At this time of the year they congregate in flocks of twenty or thirty, and frequent the hedge-rows. They are much smaller and neater in shape than the house sparrow, and can be readily distinguished from them, on the wing, by their shrill chirp and more rapid flight.

House Sparrow (Passer domesticus).—Very numerous.

Greenfinch (Coccothraustes chloris).—One of our commonest birds. In winter they congregate in large flocks, mixed up with the chaffinch and yellow bunting.

Hawfinch (Coccothraustes vulgaris).—The beautiful gardens at Hawkstone are a favourite resort of this bird; it occurs there, at times,

in considerable numbers. A large flock also frequented the vicarage-garden at Bishop's Castle a winter or two ago.

Goldfinch (Carduelis elegans).—I much fear this beautiful bird is on the decrease, although at times I still see considerable numbers of them.

Siskin (Carduelis spinus).—A very uncertain visitant, occasionally found on the alder-trees by rivers, associating with the lesser redpole.

Common Linnet (Linota cannabina).—Very numerous.

Mealy Redpole (Linota canescens).—Uncommon, but occasionally met with. I had a good specimen sent to me last spring, killed by Mr. Henry Beckwith, of Eaton Constantine.

Lesser Redpole (Linota linaria).—Very common, and as I often see them about here in the summer I have every reason to believe that they nest with us regularly.

Mountain Linnet (Linota montium).—Nests occasionally on the Longmynd, though far from numerous in any locality. Perhaps it is often overlooked, not being very readily distinguished from the common linnet.

Bullfinch (Pyrrhula vulgaris).—Still common, and nests with us regularly.

Common Crossbill (Loxia curvirostra).—I have not met with this bird for some years. Formerly they appeared in large flocks, and remained for days in the larch plantations. Their movements were most interesting, and they appeared to have very little fear of man.

Parrot Crossbill (Loxia pityopsittacus).—I have only seen two specimens of this bird, obtained near Oswestry.

Common Starling (Sturnus vulgaris).—Abundant.

Rosecoloured Pastor.—(Pastor roseus).—I am informed of the occurrence of this rare bird, in two instances, near Shrewsbury.

Raven (Corvus corax).—This fine bird still exists in considerable numbers on Clun Forest, the Stiperstones, and other high localities. I have myself seen it this summer, when looking for the curlew's nest. Occasionally its wild croak is heard passing over this house, but I fear it has been driven from most of its former breeding-places.

Carrion Crow (Corvus corone).—With scarcely a friend in the world, the old carrion crow still survives, and seems to set the destructive hand of man at defiance.

Hooded Crow (Corvus cornix).—Occasionally met with, but not very common: has been killed here in one instance.

Rook (Corvus frugilegus).—The farmer's true friend, and, I believe, in every instance where its destruction has been completed, the crops have rapidly followed suit.

Jackdaw (Corvus monedula).—Exceedingly numerous in the rocks of Downton, and the ruins of Ludlow Castle, as well as in other localities.

Magpie (Pica caudata).—Wherever the hand of the gamekeeper relaxes this handsome bird is still found in great abundance.

Jay (Garrulus glandarius).—Common in our woods, and nests with us most seasons.

JOHN ROCKE.

Clungunford House, Shropshire,
September 6, 1865.

(To be continued.)

Early Arrival of the Fieldfare.—On Monday, August 21st, whilst driving from Tring to Great Berkhampstead, I was surprised to see a large flock of fieldfares (*Turdus pilaris*), nearly filling the trees for some yards on each side of the road. Before coming close to them I fancied they must be missel thrushes (*Turdus viscivorus*), which are wont to flock at this time of year, but upon pulling up my pony to observe them more closely, I found them to be indubitable fieldfares. So early an arrival of these migratory birds is, I believe, most unusual, and the fact may be worthy of record in the pages of the 'Zoologist.'—*H. Harpur Crewe; The Rectory, Drayton-Beauchamp, Tring, September* 6, 1865.

Shore Lark near London.—I have a living specimen of the shore lark (*Alauda alpestris*), which was caught on Hackney Marshes by a birdcatcher last March: having been caged so long it has now become very tame. Its call is something similar to that of the sky lark.—*Thomas Eedle; 9, Maidstone Place, Goldsmith's Row, Hackney Road, N.E., September*, 1865.

Redwinged Starling near Liphook.—While on a visit near Liphook, in Hampshire, I saw a specimen of this rare species on a beech tree in the shrubbery; he was not more than ten or fifteen yards from me, so I was enabled to watch him distinctly: he was of a glossy black, the shoulders of the wing being red. In his actions he strongly resembled the tits, hanging head downwards continually, apparently searching for insects. This bird was seen by me on the 16th of May, 1865; the family had observed it for about a fortnight previously: it has since left the neighbourhood.—*W. Jesse; Maisonette, Ingatestone, August* 3, 1865.

Roller near the Land's End.—I saw a specimen yesterday of this species, which, on dissection, appeared to be an old female which had been killed a day or two since near the Logan Rock, a locality favourable for this bird, as other specimens (my own amongst the rest) have been procured from there.—*Edward Hearle Rodd; Penzance, September* 16, 1865.

The Villous Coating of a Cuckoo's Stomach.—I have this day (August the 21st) examined the stomach of a cuckoo, a bird of the year, which had been shot yesterday.

The bird is a late straggler, for we generally miss this cheering harbinger of spring nearly a month earlier: it was in beautiful plumage and excellent condition: sex female. The stomach contained twenty larvæ, nineteen of Pieris Napi and one of the common "tiger moth." This last had been just long enough subjected to the processes of digestion to cause the hairs to scale off its integument with the slightest movement or touch; some of these hairs had already become scattered over the mucous lining of the stomach, and were difficult to distinguish in colour, form and size from a second series of hairs, which I found actually adherent to and growing from a certain region or tract of the lining membrane itself. With a fine pair of forceps I drew several of these hairs from their mucous bed, and found them to be perfect hairs, having a bulb or root exactly similar to that of an ordinary hair on the outer surface of the body. Supposing the organ to be *in situ*, along its internal lower concavity I found these hairs most numerous, arranged first in a double brush-like row, parallel on either side of the median line, and equal in size, colour and form. These two rows seemed gradually to be lost as they expanded themselves into a series of larger hairs, scattered irregularly over the interval of space between the termination of the rows and the point where the stomach opens into the duodenum. These larger hairs reminded me of the points on the cylinder of a musical-box, apparently confused, and yet, on closer inspection, evidently arranged with some important ulterior object in view. I should say, after a careful inspection of these hair-like bodies, that they serve a purpose rather mechanical than absorbent, nor do they resemble a true villus in their structure. Their points or extremities all take one direction naturally, and that is towards the cardiac or œsophageal end of the organ. Then why should they be villi at all, whose office is simply to absorb sapid food flowing over their surfaces? Why should the cuckoo require a more rapid and perfect, not to say supplementary, or rather superadded arrangement of digestive apparatus than other insectivorous birds? I cannot see it, because its food is ever plentiful, and it dwells amid the larvæ, &c., to whose retreats instinct guides the bird; moreover, the stomach is in itself a perfectly digesting organ. May not these hair-like processes, set deeply in a highly mobile and muscular layer of the stomach, serve the purpose of retaining within the organ its living contents, which are so often rapidly thrown into it, and which might often, by their own efforts to escape, otherwise interfere with the perfect digestion of a full meal? I am quite certain as to the hairs being of two kinds, *viz.* one set those of the larvæ swallowed and partially digested, and another set, very similar in appearance, belonging to and a distinct arrangement of the organ itself. I discard altogether, I may add, the theory of these hairs being the result of disease. There is far too evident design in their arrangement and position, and besides it is not likely that a vigorous, fleshy, well-fed young bird of the year should be the subject of so considerable a disease of an organ so essential to life and the nutrition of the body as the stomach.—*W. W. Boulton; Beverley, August* 21, 1865.

Hopes of the Black Woodpecker.—I have every hope that I shall be able to send you the particulars of the capture of this species on Dartmoor. I know it was captured there, and had it confirmed the other day by a gentleman who knows the owner, and I have written to him for the date, locality, &c., &c. — *Edward Hearle Rodd; Penzance.*

Quails in Cleveland.—The call-note of the quail has been heard by me this year in the close vicinity of my garden and in the adjoining fields. On the 24th of June, having to go to the village, and the note of the quail sounding continuously from a

corn-field, only not in my direct way, I walked through it in the direction of the sound, and, though scarcely expecting it, I flushed both birds. Their note was subsequently heard in the same vicinity, but only sparingly, and a week after the above date seemed to cease entirely.—*J. C. Atkinson; Danby, Grosmont, York.*

Pure White Gull.—The Rev. M. A. Mathew, in the current number of the 'Zoologist' (Zool. 9734), says, "A large gull, snow-white *all over*, with legs and bill of a uniform green tinged flesh-colour, is somewhat a nondescript, and I should be very glad to hear if any of the readers of the 'Zoologist' have ever met with a similar one, or could give me any light upon the matter." As I have just such a gull in my collection, I beg to offer the following remarks. Possibly Mr. Mathew's bird and mine may prove to be of the same species, but, as he has not given any measurements, I have no guide but colour, coupled with his assertion that it is a large gull. My bird was shot on the Lancashire coast, at Lytham, in February of the present year. Although consorting with other large gulls, it at once attracted attention by its pure white plumage, and many attempts were made to shoot it, but for several days it escaped. At length a friend of mine, observing that it frequented the flats which were left exposed at low water, ran his boat out one morning and waited for the tide to recede. This plan succeeded, for he got a long shot with a cartridge, and killed the bird. As it now stands in my collection, between a great blackbacked gull on one side and a herring gull on the other, it appears intermediate in size between these two. The following are the measurements, although, it should be observed, they can hardly be considered as quite correct, as they were taken after the bird had been stuffed:—

Length of bill from gape	2½ inches.
Entire length from base of bill	25 „
Carpal joint to tip of closed wing	18½ „
Length of tarsus	2¾ „
Middle toe, nearly equal to tarsus, being . . .	2⅝ „

In endeavouring to identify the species, I considered that it could not be an ivory gull, which would be smaller in size, and would have black legs (whereas these are of a brownish flesh-colour), and it also exceeds by measurement the average size of an Iceland gull. Taking into consideration, therefore, the size of the bird, the colour of the plumage, and the length and colour of the tarsus, I came to the conclusion that it must be a very old glaucous gull. I say very old, because, as is well known, that all the gulls when immature are mottled more or less with pale brown; and the adult glaucous gull has the back and wings of a very pale bluish gray colour: it is possible, therefore, that these parts may become white with age. Mr. Mathew's suggestion, that his bird may possibly be an albino, deserves consideration, but, like himself, I have never yet seen or heard of an albino gull of any species. However, whether the birds prove albinos, or very old individuals of a species rare in England, I think we may congratulate ourselves on the possession of a prize not to be obtained every day. I should be glad if Mr. Mathew will favour us with the measurements of his specimen, as further particulars will perhaps decide this interesting question.—*J. Edmund Harting; Kingsbury, Middlesex, September* 19, 1864.

Errata.—In my communication respecting the Birds of the Dorsetshire Coast (Zool. 9665), for "Faroe Isles," read "Farne Isles," and for "Columbia livia," read "Columba livia."—*Id.*

Notices of New Books.

'*Handbook to the Birds of Australia.*' By John Gould, F.R.S., &c. In Two Volumes, royal 8vo. Published by the Author, at No. 26, Charlotte Street, Bloomsbury. 1865.

The author and reviewer are both under a disadvantage in the notice of an incomplete work. The author may fairly object to any criticisms that would apply to the work as a whole; and the reviewer is especially liable to the fallacy of praising or blaming certain peculiarities which would perhaps escape notice when the work was complete. It is desirable, therefore, to state that this is but the first volume of a work that proposes to describe all the birds of Australia, and is intended to be a reprint of Mr. Gould's great work on the Birds of Australia, incorporating all the discoveries which have been made since the completion of that magnificent work, in 1845. The present volume contains 636 pages of letter-press, without illustrations, and describes all the birds of prey, thirty-seven in number; and three hundred and fifty-one of the passerine tribes, which are here, after the English fashion, termed Insessores.

It is almost superfluous to remark that, of all living ornithologists, Mr. Gould is the most competent to accomplish thoroughly this self-imposed task: not only is he familiar with the book and museum phase of his subject,—and to this he has contributed more than any other man,—but he has dwelt among these birds in their Australian homes, has heard their voices, watched their flight, taken their nests, noted their migrations, sketched their living forms, and made himself in every respect at home with their life-histories; so that, possessing in himself the largest amount of Australian bird-lore that was ever amassed, he is without question the best man to complete a Natural History of our Antipodean Birds.

There are certain circumstances which render Australia a country of the highest possible zoological interest. Admitting, as we generally do, that the placental animals are the highest in Nature's scale, it is not a little remarkable that from Australia they are almost entirely absent; there are no beasts of prey, no ruminants, no pachyderms; rodents are represented by a few species of rats, and these, with a few bats, constitute the entire placental fauna: but marsupials, that strangely primitive form of sucklers, abound, although fast fading away, and destined shortly to yield their places to the milch kine and sheep of Britain,—yet too unmistakably registered by Science, ever to be forgotten while the printing-

press remains to us, with its miraculous power of reproducing the effigies and characters of those beings which have once been faithfully portrayed.

But let us hear Mr. Gould, on the birds.

"Although Australia is destitute of many of the great groups of birds inhabiting India and its islands, she possesses many other equally singular forms especially adapted to find their existence among her very remarkable flora, and her equally remarkable insects. Of these her sixty species of parrots, scarcely one of which is found beyond her limits, are unrivalled for size and beauty of plumage; conspicuous also are the extensive group of honey-eaters forming the family Meliphagidæ, the elegant Maluri, the forest-loving bower-birds, and the graceful Menuras: all these, combined, furnish abundant illustration of the remark with which I commenced. The absence of such birds as hornbills from Australia is evidently due to the circumstance of her flora not comprising any of the numerous large fruit-bearing trees which occur in India and Africa, and which are so essential to the existence of these birds; in like manner she is destitute of woodpeckers, because the bark of her trees is not adapted for the shelter of the insects upon which they love to feed; neither do her few berry-bearing shrubs offer attractions to the Eurylaimi or the omnivorous barbets and Trigons. No true wagtail trips over her hard-baked soil in pursuit of Aphides and other minute insects, as in Britain; no Saxicola enlivens with its sprightly actions her sterile wastes; and feebly indeed, among her birds, are represented the melodious notes which are freely poured forth by many of the species inhabiting countries north of the equator, and which render the spring such a joyous period in England. No mavis has she to usher in the morning, and terminate the summer day, with its vigorous note; no Philomel to break the stillness of night with its joyous song: quietude, as regards the voice of birds, reigns supreme; or if there be any exception to this rule, it is the noisy screams of her parrots, the monotonous though liquid notes of some of her honey-eaters, the loud call of the Menura, or the warbling of the reed-birds.

"Some parts of the avifauna of Australia are, however, very similar to that of other countries; eagles, hawks, harriers and owls play their accustomed parts; while swifts, swallows, martins, and flycatchers perform the same offices as with us; the nocturnal group of Caprimulgidæ are not wanting where Phasmidæ and Cicadæ abound; petrels, gulls, terns, and penguins frequent her seas; her rock-bound shores have

their cormorants; the sandy spits of her rivers their pelicans, sandpipers, and plovers; and her swamps and morasses are tenanted by ducks, grebes, gallinules, and rails of the same types as those inhabiting her antipodes. But these, in nearly every case, are distinct species: she possesses no true Anser; but every one knows that she has that '*rara avis in terris*,' the black swan. It is, however, in the interior of the country (adorned with the universally spread Eucalypti, extensive belts of Banksiæ, forests of Xanthorrhœæ, Melalucæ, &c.), and in the heated brushes which clothe its south-eastern portions (where stately palms spread their leaves over the eccaleobion or hatching mound of the Talegalla and the theatreion or playing bower of the Ptilonorhynchus), that we find an avifauna different from that of all other countries.

"Some few genera, such as Graucalus, Artamus, and Halcyon, are represented in the Indian Islands, on the peninsula of India, and even in some portions of the continent of Asia; and many more genera, and in some instances the same species, extend to New Guinea. The productions of this latter country are, in fact, so similar to those of Australia, that, zoologically speaking, they cannot be separated. In writing thus I, of course, include the southern country of Tasmania, but not New Zealand or its satellites, Lord Howe's, Norfolk, and Phillip Islands, and other adjacent specks in the ocean, the culminating points probably of some great sunken continent, where bird-life reigned supreme; for we have no evidence that any mammals, either placental or marsupial, except bats, ever roamed over its surface,—mighty birds taking the place of Mammalia, as is evidenced by the remains of the great Struthiones which are almost daily exhumed from the morasses, alluvial beds and caves of New Zealand.

"Australia, lying as it does between the 10th and 45th degrees of south latitude, is subject to many varieties of climate. The northern portions are visited by monsoons; while the southern have seasons similar to those which occur in countries lying under the same degree of latitude north of the line; in a word, summer and winter are as in England, but of course at reversed periods of the year; as a natural consequence, when the sun retires for a period from any portion of the land, vegetation sleeps and insect-life becomes inert. Bird-life follows the law of Nature, as seen in the northern hemisphere, and is much more rife at one season than at another. The swallow and its congeners come and go as regularly in the southern portion of Australia as they do in England; and so do the cuckoos, of which there are several species, and not only a single one as with us. Besides these, there are many

other birds that are thus influenced; but the extent of their journeying has not been clearly ascertained further than that they generally proceed north when the sun retires, and return when he approaches: that they do not cross the equator is certain, for we should then find these peculiar species northward of the line, which we never do. There are also some non-migratory species which appear to perform a kind of exodus, and entirely forsake the part of the country in which they have been accustomed to dwell, and to betake themselves to some distant region, where they remain for five or ten years, and even for a longer period, and whence they as suddenly disappear as they had arrived. Some remarkable instances of this kind came under my own observation; for instance, the beautiful little warbling grass parakeet (*Melopsittacus undulatus*), which prior to 1838 was so rare in the southern parts of Australia that only a single example had been sent to Europe, arrived in that year in such countless multitudes on the Liverpool Plains that I could have procured any number of specimens, and more than once their delicate bodies formed an excellent article of food for myself and party. The Calopsitta Novæ Hollandiæ forms another case in point, and the beautiful harlequin bronze-winged pigeon a third: this latter bird occurred in such numbers on the plains near the Namoi in 1839, that eight fell to a single discharge of my gun: both the settlers and natives assured me they had suddenly arrived, and had never before been observed in that part of the country. The aborigines who were with me, and of whom I must speak in the highest praise, from the readiness with which they rendered me their assistance, affirmed, upon learning the nature of my pursuits, that they had come to meet me! The Tribonyx ventralis may be cited as another species whose movements are influenced in the same way. This bird visited the colony of Swan River in 1833, and that of South Australia in 1840, in such countless myriads, that whole fields of corn were trodden down and destroyed in a single night; and even the streets and gardens of Adelaide were, according to Captain Sturt, alive with them. Similarly to what occurs in America and on other great masses of land, we find in Australia the law of representation markedly carried out, as it mostly is where the same conditions exist. For instance, the beautiful frill-necked bower-bird of the scrubby plains of New South Wales is represented in north-western Australia by a nearly allied species, which makes its elegant bower in similar situations. The Podargus humeralis, which inhabits the Angophora-flats of New South Wales, is, in like manner, represented by the P. trachypterus in Western Australia, which presents a similar character of country, and so it is with

many other species, both of mammals and birds."—*Introduction*, p. 2, *et seq.*

This long extract seemed necessary to show how completely Mr. Gould has mastered his subject. I must reserve for a future occasion, when the work shall be complete, those further extracts which, relating to individual species, will be read with still more interest. Mr. Gould is one of those who do not rest content with a mere description of beak, feet and feathers; he goes into the life-history of each species, and gives every particular he can collect of the living bird: how many years I have been urging on the attention of my fellow-labourers to direct their studies in this particular direction, the readers of the 'Zoologist' know full well: how much of obloquy and what strange rebuffs it has brought me, they also know. It is one of the rewards of perseverance to see the best and ablest taking the path I have always pointed out as the right path, not, indeed, because I have done so, but because it is, in their own convictions, the only path that leads to a true knowledge of the science they desire to teach. Not a month now passes but we find some life-history of a bird or insect carefully worked out by those who, had they ventured on this course twenty years ago, would have met with the most determined opposition, and probably received solemn reproof from the chair of some learned society. Mr. Gould is now doing this life-history business on a much more extensive scale in a work I shall shortly have occasion to notice more at large, the 'Birds of Britain,' a work highly creditable to the country which produces it, and one to which I heartily wish the most complete and entire success. But I must not allow a mere digression in advocacy of a principle to withdraw my attention from the more immediate subject of this notice, 'The Handbook of the Birds of Australia,' a work which has long been wanting; a work for which I have been repeatedly asked, and one which, when complete, will supply a necessity in the literature of our Australian colonies that has been felt by every naturalist whose interest or inclination has attracted him to that antipodean Britain. On the 2nd of December the second volume is to be issued, and then the work will be complete. It is not only my duty but my pleasure most cordially to recommend it to the readers of the 'Zoologist.'

EDWARD NEWMAN.

Whinchat's Nests in Mowing Grass.—Last week I took two nests of the whinchat, which were mown over here in the centre of two grass meadows. We have no furze or common-land nearer than three-quarters of a mile. Is this not rather unusual?—*W. Jesse; Maisonette, Ingatestone, Essex, August* 3, 1865.

White Eggs of the Greenfinch.—In reference to your note (Zool. 9732) on "White Eggs of the Yellowhammer," will you think the following worth recording? Two seasons since, two of my children, tolerably zealous egg-hunters, brought me an egg of what I hardly know how to describe otherwise than as a "warm shade of white," something like that of an unblown white egg, such as the sand martin's or a thin-shelled dipper's, but the shade more buffy than orange. The description and site of the nest, in connection with such an egg, puzzled me exceedingly, and the end was that I went with them to see it. I saw the parent bird on the nest, and when, after a good look at her, she at last flew off, she still gave me opportunities of personal identification, if I had needed more. The bird was a common greenfinch, and the nest, of the ordinary type, in a thick thorn-hedge, contained three other eggs of the same character as that I had in my hand.—*J. C. Atkinson; Danby, Grosmont, York.*

Miss Van der Meersch's Educated Birds at the Polytechnic.—On the evening when I had the pleasure of seeing this charming young lady and her troupe, the *corps dramatique* consisted of Mademoiselle herself, a Java sparrow, a bramble-finch or brambling, a cardinal bird, and a coral-beak. These birds were in a small oblong cage with four separate divisions, each with a portcullis door, the full width of the division, opening towards the audience. On commencing the performance Mademoiselle placed in front of the cage a very long tray completely filled with large cards, some having printed on them the names of the months, others those of the days of the week, whilst a third set had numerals, a fourth single letters, and a fifth were the facsimiles of an ordinary set of playing-cards. These cards were placed in the tray upon their edges, and were packed so closely together that the upper edges formed a flat surface, on which the birds could walk. Opening the door of the cage containing the Java sparrow, Mlle. Van der Meersch addressed the bird in the most endearing terms, and requested him to come out and tell the number of days in the year, whereupon the bird ran over the edges of the cards and pulled out with his beak that one which had 365 printed on it. In the same manner the cards containing the name of the day of the week and the number of the day of the month were selected. The name of the month and any particular letter were drawn out at the suggestion of any of the audience. Mademoiselle then asked for a name, when that of Marie was suggested by one of the ladies present. She then sorted out the cards having the five letters M-a-r-i-e printed on them, and desired the audience to place them promiscuously along with the others in the long tray. The brambling was then called out and asked to select the letters. He hopped over the cards and pulled out two, when he hopped back into his cage frightened at a slight movement that took place among the audience. The Java sparrow then came out and selected two more, when he retired, and the brambling pulled out the remaining one necessary to complete the name of "Marie." After this a number of cards were chosen by the audience from an ordinary playing-pack held in the hands of Mdlle. Van der Meersch, when the birds selected the corresponding cards from the row in front of the cages. At this time one of the audience left to witness another performance in the building; this movement alarmed the birds, who, with the self-conceit of other public favourites, hopped back into their cages with offended dignity. In estimating rightly the intelligence of the birds, as evidenced by this performance, it is

necessary to separate the actions of the different performers. Mdlle. Van der Meersch is a *spirituelle* little lady, who performed her part with the greatest *naïveté* and tact; but, after eliminating all that could possibly be done by forcing cards on the audience, or by indicating those which the birds are required to select, there is sufficient evidence not only of the high intelligence of the birds, but of the unwearied patience and assiduity of the directress in perfecting their education. That a bird should select from amongst several hundred cards, standing closely packed together on edge, any single one at the will of the directress, no matter how it may be indicated, is in itself a great proof of extraordinary docility, and of a degree of reasoning power greater than is usually attributed to any of the lower animals. The motive power used by Mdlle. Van der Meersch is obviously kindness, and the immediate inducement a series of rewards in the shape of hemp-seed administered to the Java sparrow and brambling, and millet-seed to the coral-beak. That gentleness and love are the influences employed in the training of these feathered bipeds was proved by a little accident that occurred during the performance. Frightened by some movement among the audience, the Java sparrow flew to a distant part of the table. Mademoiselle strewed a few seeds in front of its cage, but it was too alarmed to be allured; so, putting down her little directing wand, Mademoiselle took up the little performer in her hands, and restored him to the cage, first kissing him in such a manner as convinced the spectators that

> "Had the birds been her own children, she
> Could not have loved them more tenderly."

To those who are interested in animals I cannot recommend a more delightful mode of passing half an hour than in a visit to the very pleasing, clever and instructive performance of Mdlle. Van der Meersch and her truly "marvellous birds."—*W. B Tegetmeier.*

Note on the Hooded Crow.—Capt. Hadfield appears (Zool. 9719) to have misunderstood my note on the crows (Zool. 9572), which was perhaps ambiguously expressed: what I meant was that the hooded crow is almost unknown *here*. I am, of course, aware that it is not uncommon in the north; it also breeds near Glasgow, where it constantly pairs with the carrion crow (*Corvus corone*), of which it is perhaps a northern race ('Ibis,' 1865, p. 134). I have also received eggs from Ayrshire.—*Edward R. Alston; Stockbriggs, Lesmahagow, September* 4, 1865.

Supposed Occurrence of the Golden Oriole near Norwich.—I was out boating on St. Martin's River, Norwich, during one cold December day in 1862, when I espied, on one of the meadows, a man employed with his nets catching small birds, such as linnets, goldfinches, redpoles, &c. I rowed the boat ashore, and approaching him made the usual inquiry as to whether he had met with anything unusual lately; he replied that during the morning he had seen what he considered to be a very strange bird: he described it as being about the size of a thrush or blackbird, and of a yellow colour; it passed and repassed over his nets several times, usually alighting on the trees or bushes that bordered the river on one side and the road on the opposite, the meadow lying between. He had had very good opportunities of observing it, as it sometimes passed within a few yards of him in crossing the meadow: he, however, missed it about noon, and had not seen or heard of it since. His description of the bird somewhat answered to that of the golden oriole (*Oriolus galbula*). Is it at all probable that it might have been an individual of that species? Has it ever been

known to visit this country in the winter? I suggested to my informant that it might probably have been a variety of either the thrush or blackbird; but, as he was pretty well acquainted with birds, he seemed perfectly satisfied it was not: it was a new species to him; he had never seen one like it before.—*T. E. Gunn; Norwich.*

Cuckoo swallowing Cord.—In dissecting an example of the cuckoo, a few days since, I was surprised to find in its gizzard, in addition to its usual food, a piece of knotted cord of medium size and about four inches in length. It was doubtless swallowed, in mistake, for a crushed and disfigured larva, to which it bore some resemblance.—*Id.; August* 14, 1865.

Cuckoo in Confinement.—In the 'Zoologist' for 1864 I recorded an instance of the cuckoo being kept in confinement throughout the winter by a person residing in this city (Zool. 9024). I have lately had an opportunity of seeing Mr. Dew, the person referred to, who informed me of its death; he himself had the misfortune to be confined to his bed through illness, and being unable to attend to the wants of his pet as usual, he left it to the care of others, who neglected it, so that it died at the commencement of October, 1864; it thus remained alive in his possession just eighteen months. Since the publication of my previous note, I have seen remarks from a correspondent to another journal, in which he expresses himself disposed to doubt the statement sometimes made of the cuckoo passing the winter with us: it appears he himself and several of his friends have made several unsuccessful attempts to rear this bird through the winter, which of course is no reason why another enterprising rearer should not succeed in attaining his object. The truth of the above and subsequent statement may be implicitly relied on; the facts can be vouched for by several respectable inhabitants of this city, who, like myself, had opportunities of observing this peculiar pet while in Mr. Dew's possession.—*Id.; September*, 1865.

Curious Malformation of a Young Pheasant and a Bantam.—During the month of June last a very curious specimen of a young pheasant was brought to me for preservation. Instead of its eyes being placed in their usual position, it was peculiarly disfigured by having a double one in the centre of its forehead, covering the place where the upper mandible of its bill should be fixed, of which it was minus. A day or two afterwards I saw another malformed curiosity: in this instance it being a young bantam, the upper mandible of the bill of which curved downwards to the left, the lower mandible projecting out straight: it had only one eye, which was situated near the base of the bill at the right side; it was also minus one wing. From the appearance of its head and body, which appeared partly double, it had doubtless been hatched from a double-yolked egg, which are not of uncommon occurrence in this neighbourhood.—*Id.*

Young of the Domestic Fowl hatched by the Partridge.—Your note (Zool. 9732) on "Eggs of Pheasant and Partridge in the same Nest" reminded me of two instances, which I recorded in my own memoranda as occurring here last year. As your editorial note remarks, cases of pheasants' eggs in partridges' nests are very common; and, I may add, others, in which the French partridge lays in the common partridge's nest, are not unusual; but last year, in a field separated only by the road and a very narrow slip of land from this house, a pair of partridges had a chicken, or, as named here, a "young hen-bird," in company with their own proper young, and when disturbed, as they were on two occasions in one day by my neighbour, the owner and occupier of the land in question, they were as careful and fussy over their big, awkward, helpless, chirping fosterling as over their own young; in reality, more so, for, hearing its cry,

and supposing it must be one of his own chickens strayed from its mother, he spent some time in searching for it, and the foster-parents did not leave it till the last extremity. He left it with them, and of its after fate there was no information. This instance was mentioned in my presence to my senior churchwarden, who immediately referred to a case in which, on his own farm, and under his own observation, a hen partridge sat upon five common fowl's eggs laid in her nest, hatched them, and was afterwards repeatedly, with her mate, seen with three of the chickens by my informant himself; but these three seemed to be all the brood, as he never saw any young partridges in company.—*J. C. Atkinson; Danby, Grosmont, York.*

Young Snipes.—In this district, as also on the warrens in Norfolk, snipes breed commonly, not to say numerously. Last year, in June, two of my sons caught a young snipe as they were walking with me over the moors. It was fledged and about two-thirds grown, but the bill only about half the length it would ultimately obtain. Eggs from a different part of the moor were brought me the year before, and this year my boys spent some hours in looking for a nest, which, it was certain, was placed in a rushy meadow near the beck in our valley. The sportsmen on the moors around, it may be added, sometimes kill several couples of young snipes a-day in the earliest part of the grouse season, and a year in which none are then met with *very* rarely occurs. I do not find our northern gamekeepers so ornithologically ignorant as your correspondent (Zool. 9733) seems to do in the district he refers to. With us the "little blue hawk" is strictly limited to the merlin; the kestrel is the "stand-hawk" or "hover-hawk;" the hen harrier has her proper name, and so on; and my chief friend in the "keeper" line is a fair ornithologist, a very shrewd intelligent man, and a good farmer, as well as able in his own department.—*Id.*

[I rather agree with the Rev. M. A. Mathew, that gamekeepers know little or nothing of Ornithology. It is not very long since a nobleman sent me the head, legs and wings of a cuckoo to name; he called my attention to the peculiar conformation of the foot, two toes being directed one way and two the other, and added, "I employ four keepers, neither of whom saw anything of the kind before." I gave, as politely as I could, the name of the bird, and in return lost a subscriber, and was pronounced "an ignorant cockney." I quote this as an extreme case, but nearly similar cases are not uncommon. Who has not seen cuckoos and green woodpeckers nailed to the "keeper's tree" as "vermin."—*Edward Newman.*]

Snipe nesting at Liphook.—I have received two snipe's eggs from Liphook, where they breed regularly, as do also teal.—*W. Jesse; Maisonette, Ingatestone, Essex, August* 3, 1865.

Snipes and Wagtails.—Whilst out walking I put up a pair of snipes, on the borders of a large piece of water: I think this (September 17th) very early for them to occur with us. On the same day, whilst walking along the banks of the Thames, I saw vast numbers of wagtails, I should say young birds of the year; I think I could reasonably say I saw between three and four hundred.—*Charles E. Stubbs; Henley-on-Thames, October* 6, 1865.

Curlew Tringa: Change of Plumage.—This is an interesting period for watching the change of plumage from summer to winter. I saw some curlew Tringa yesterday (females), sent from Scilly, in a very interesting state: the whole of the breast and under parts partook of an equal mixture of white and red, whilst the back and upper plumage had the cinereous feathers cropping out amidst the dark feathers, indicative of the summer plumage. These specimens were evidently old birds, as the young of

the year have the breast and belly white, strongly tinged with buff-yellow.—*Edward Hearle Rodd; Penzance.*

Surf Scoter at Scilly.—A bird of this species, in a very beautiful state of plumage, was captured, a few days since, by a boy at Scilly, in a disabled state, and it has been sent over to-day, in the flesh, for preservation by Mr. Vingoe, who brought it, very civilly, for my inspection immediately on its arrival. I had an opportunity, therefore, of examining it carefully before it was skinned, and before the brilliant hues of its curiously constructed bill had apparently in the least faded. The body was much emaciated, and how the poor bird got down to Scilly is a mystery: from the intense black of its plumage, its strongly developed tubercular enlargements on each side of the posterior part of the upper mandibles, the clearly definite division of white between these and the brilliant Seville-orange coloured anterior portion of the upper mandible, ending in a pearl-gray nail, I should think that it is a very adult bird; the legs are bright red, with the interdigital membranes black.—*Id.; September* 25, 1865.

Birds at Glenarm.—On the 19th of July a nest of the merlin was found by the keeper here, containing two young birds, and two eggs varying much in colour and size; the nest was found amongst the heath, on high ground well stocked with grouse: the young birds were tethered in, so that the old birds might be trapped at a convenient time. The parent birds fed them principally with larks and meadow pipits during that time, which was about a week, the feathers being principally plucked before they were fed. The old hen was trapped and taken without receiving any harm; the male could have been taken, but time would not permit. I placed them in confinement: the old bird is exceedingly tame; she took her food from my hand the first day she was captured. Unfortunately one of the young birds got drowned in a tub of water, where it had gone to take a bath: I observe the young are very fond of bathing when provided with water in a shallow vessel. A pair of hen harriers may be seen daily coursing over the same ground in company with gulls and curlews, which breed on the same ground. On the 4th of June I saw four young falcons (*Falco peregrinus*) taken from a nest from the cliffs near Garron Tower, the seat of the late Marchioness of Londonderry; they were nearly full-feathered. Several pairs of the chough build annually near the same spot.—*T. Brunton; Glenarm Castle, August* 23, 1865.

A List of Birds observed in the Parish of Bishop's Lydeard.

By Cecil Smith Esq.

The parish of Bishop's Lydeard, of the birds of which the following is a list, is situated in the county of Somerset, at the western extremity of the vale of Taunton Dean, and about eight miles east from the nearest part of the Bristol Channel, at the foot of the Quantoch Hills, a part of the parish, indeed, running up the southern slope to the top, and even a short way over the top, of these hills. There are two large ponds, of several acres each, Sandhill and Cotheleston, and other smaller ones; there are also various other old pits, out of which marl had at one time been dug, but which are now full of water,

affording occasional accommodation to water-fowl and waders, as does the brook which flows for about three miles through the parish from west to east.

Osprey.—One specimen shot at the Sandhill Ponds, and is now in the collection of Dr. Woodforde.

Merlin.—As far as I know, only one specimen of this bird has been seen in the parish, and that one was shot by my father many years ago. This specimen is now in my collection.

Kestrel.—Not at all uncommon. I have a tame one, which I shot and winged slightly nearly three years ago; it very soon became quite tame, and will now take birds or mice from my hand; it, however, shows a decided partiality for birds; the only bird I have offered it which it has refused is a starling.

Sparrowhawk.—Also common here, rather more so than the last species, though it is more persecuted by gamekeepers. I tried the same experiment with a female sparrowhawk that I had done with the kestrel, but utterly failed.

Barn Owl.—Still tolerably common, but I am sorry to say not quite so common as they were a few years ago.

Tawny Owl.—Not uncommon in the copses and plantations.

Redbacked Shrike.—An occasional summer visitor, but rather rare, as I cannot answer for ever having seen more than three or four within the boundaries of the parish.

Spotted Flycatcher.—One of our most numerous summer visitors, though rather late in its arrival, generally from the 5th to the 9th of May.

Dipper.—Common in all the brooks in the neighbourhood. I do not think these birds do much, if any, mischief to the trout, as the brook here is full of trout, and I myself knew of as many as four water ouzel's nests this year within the part of the brook that runs through the parish. They are nearly, if not quite, our earliest nesters; last year I found a nest with four young birds nearly fledged as early as the 21st of April, and this year I found a nest with four eggs, too much sat upon to blow, on the 6th of April, though the weather up to that time had been unusually cold; indeed, during the last week in March there had been heavy snow-storms and severe frosts. This bird is locally known as the "water colley." "Colley" is also the local name of the blackbird.

Missel Thrush.—Very common.

Fieldfare.—Very common in the winter in the water-meadows. The

14th of November is the earliest day I have noted the appearance of the fieldfare, the 29th of April the latest. My tame kestrel, mentioned above, seems particularly fond of these birds, and, to judge by the quantity of remains I find about, the wild hawks must evince the same partiality.

Song Thrush.—Very common.

Redwing.—An equally common winter visitor with the fieldfare, but rather earlier. I have generally first seen it attacking the red berries on the May-bushes, after finishing which it generally retires to the turnip-fields, where it stays, except during a very hard frost, through the winter, not being nearly so numerous in the water-meadows as the fieldfare. I am afraid I cannot throw any light on the disputed point of this bird singing in England; though I have frequently listened to large flocks of them in the apple-trees late in the spring, I have only heard them twittering very much like a flock of starlings; in fact, unless seen, it is very difficult to distinguish one from the other.

Blackbird.—Very common, in spite of the war made against it by the gardeners. I have seen several pied varieties this winter, generally white about the neck and throat.

Hedgesparrow.—Very common; locally known as the "blind dunnoch."

Robin.—Equally common with the last.

Redstart.—A not very common summer visitor. I have usually noted its appearance between the 16th and 19th of April.

Stonechat.—Not at all an uncommon bird here during the greater part of the year, though they always leave during the middle of the winter for the more sheltered valleys on the Quantoch and other neighbouring hills, as I have seen them there at all times of the year, summer and winter; within this particular parish I have never noticed them during the winter, the 5th of March being the earliest date I have of their appearance, and they usually disappear about the middle of November.

Whinchat.—I have never seen any of these birds in this parish until this year, though I have been on the look out for them for some time for my collection. This year I got three male birds, all killed in this parish on the 18th and 19th of April. They were on the low hedges near the brook, perching on the highest twigs in the same conspicuous manner that stonechats do.

Wheatear.—I have only seen two of these birds in this parish. The first was in the spring of 1863, when I shot one in an open

meadow immediately in front of the house. The other I saw on the 15th of April, in this year, in a meadow near the brook.

Sedge Warbler.—Common in the thick alder-bushes on the brook. Their first appearance seems generally to be between the 19th and 22nd of April.

Nightingale.—Rather uncommon and irregular in their appearance. The earliest note I have of their being heard in this neighbourhood is on the 21st of April.

Blackcap.—Tolerably common. The 20th of April is the earliest note I have of its appearance.

Whitethroat.—More common than the last. Considered by the gardeners to be one of their greatest enemies. The 19th of April is the first notice I have of the appearance of the whitethroat. I have always noticed the first appearance of this bird on the same day, and at the same place, as the sedge warbler, namely, among the alders on the banks of the brook.

Lesser Whitethroat.—I have one of these birds in my collection, which I shot in the meadows near the house early in the spring: it is the only one I have ever seen in the parish; had they been at all common I should certainly have noticed them oftener.

Willow Warbler.—Not very common: the one I have in my collection was picked up dead in the green-house. I have not been able to make any notes as to the arrival or departure of these birds, as they are not very common, and, arriving late after the leaves are out, easily escape observation for some time.

Chiffchaff.—Very common, but rather variable in the time of its arrival; in the last three years I have noted its arrival on the 15th of April, the 23rd of March and the 5th of April.

Goldencrested Wren.—Rather common.

Wren.—Very common.

Great Tit.—Pretty common in most of the orchards and gardens, but not so much so as some of the other tits; indeed, I am inclined to think it less numerous than either the cole or marsh tit.

Blue Tit.—By far the most common of all the tits.

Cole Tit.—Very common in most of the orchards and plantations.

Marsh Tit.—About as common, and in the same localities, as the last.

Longtailed Tit.—Rather more common, and as they flock more, they are more generally noticed than the last.

Pied Wagtail.—Very common all through the year. Locally known as the "dish-washer."

Gray Wagtail.—Not quite so common as the last.

Yellow Wagtail.—A rather scarce summer visitor: the earliest note I have of their arrival is April the 21st.

Tree Pipit.—An occasional summer visitor. I have one in my collection, shot in the parish. I have seen one or two others.

Meadow Pipit.—Very common, especially about the sheep-folds in the winter, when the sheep are in turnips.

Sky Lark.—Tolerably common all through the year. In the hard weather last year great flocks of these birds appeared in the allotment-gardens and in the rape-fields, where they did considerable damage, reducing the leaves of rape and any other green thing they could find to perfect skeletons, as if they had been eaten by the caterpillars.

Wood Lark.—Not at all common, only once having come under my observation in this parish, on which occasion I obtained one specimen for my collection.

Reed Bunting.—Very common near the brook and in all the hedges by the water-meadows. In the winter they flock a good deal with the yellowhammers, chaffinches and linnets.

Yellowhammer.—Very common; to be seen in all the hedges in the country, and, in winter especially, about the roads.

Cirl Bunting.—Very uncommon; I have never seen more than three or four of these birds here. Those I have in my collection I shot within the parish, after having been on the look out for some years.

Chaffinch.—The most common of all our birds, except perhaps the house sparrow, but, being more generally spread over the country, I should think it must be rather the more numerous of the two. It is locally known as the "whitefinch."

Brambling.—Not uncommon in the winter, when they are occasionally caught by bird-batters, and perhaps oftener than is supposed, as they are always set down as "whitefinches," and consequently not noticed. When caught in this way I have easily been able to tame them.

House Sparrow.—Very common, of course.

Greenfinch.—Also very common; generally known as the "green linnet."

Goldfinch.—Not so common as the last, but still by no means rare.

Siskin.—An occasional winter visitor to the alder-bushes near the brook.

Linnet.—Pretty common; to be seen more often in the winter

and spring, when they flock, than they are in the summer, when they are dispersed among the thick hedges.

Lesser Redpole.—A more regular winter visitor than the siskin. I got one this year for my collection as late as the 7th of March; the breast was beautifully pink.

Bullfinch.—Rather common, especially in the orchards and gardens, where the gardeners rave against it. Generally known as the "hoot."

Crossbill.—A very rare visitor, having only been seen in this parish once, and that more than twenty years ago, on which occasion they not only visited this particular parish, but were very generally spread over the whole country. I have two in my collection, both of which were shot by my father in a fir-plantation near the house: they are both in their red plumage.

Starling.—There are very great numbers of these birds here. At times they collect in flocks of many hundreds, and at other times they may be seen singly or in small flocks. Their flocking in such large numbers is considered by the farmers to be a sign of rain; certainly I myself have generally noticed the larger flocks either during or immediately before wet weather.

Crow.—Not very numerous, owing to the constant war made against them by the gamekeepers.

Rook.—Very numerous, as we have three large rookeries in the parish, besides others at no great distance. I have little to add to what I said of the food of these birds in the 'Zoologist' (Zool. 8885 and 9043), except that once, very shortly after my last note, namely, on the 27th of March, 1864, I observed some rooks feeding on the carcass of a dead lamb in one of my fields, and during the dry weather this spring they sucked all the eggs in the earlier nests of the wild ducks.

Jackdaw.—Tolerably common.

Magpie.—Rather common, in spite of the gamekeepers.

Jay.—This bird not only suffers from the gamekeeper, like the last, but also from the ladies, who use the wings for feathers for their hats, but in spite of this double war it is still tolerably common.

Green Woodpecker. — Very common, especially in the older orchards.

Lesser Spotted Woodpecker.—Much more rare than the last. I have only seen three or four here.

Wryneck.—Also rare, though perhaps, owing to its not being easily seen, it may be more common than is usually supposed.

Creeper.—Very common in all the orchards and plantations.

Nuthatch.—Not quite so common as the last, but still by no means rare in the same localities.

Cuckoo.—Tolerably common. The earliest note I have of their appearance is the 14th of April.

Kingfisher.—I am glad to say this beautiful bird is tolerably common near the brook, though not so common as the water ouzel.

Swallow.—Very numerous. For the last three years I have noted their appearance here on the same day of the year, the 12th of April.

Martin.—Nearly as numerous as the swallow, but by no means so regular in their appearance, my notes varying from the 23rd to the 29th of April.

Sand Martin.—Not quite so common as the two last. The earliest note I have of their appearance is the 20th of April; this year they were very late, for though I was watching for them I did not see any till the 2nd of May.

Swift.—Also very common. The earliest note I have of their appearance is the 28th of April.

Ring Dove or Wood Pigeon.—Very common; in fact, rather too much so, as they are undoubtedly very mischievous, both to corn and turnips, and that without the compensating good done by rooks and most other birds. I found a wood pigeon's nest, with young birds nearly ready to fly, last year, as late as the 11th of October, and I see there is one still later mentioned in the 'Zoologist' (Zool. 9361).

Stock Dove.—Rather rare. I have one in my collection, which was shot by my keeper while roosting in a wood pigeon's nest. I also have one in my aviary, which was picked up wounded, but has now quite recovered and is tolerably tame.

Turtle Dove.—Not sufficiently common for me to have noted with much accuracy the time of its arrival or departure; there are, however, a few nests of these birds here every year.

Pheasant.—Pretty common, there being one or two rather strict game-preservers in the neighbourhood.

Black Grouse.—A few in that part of the parish which runs up on the Quantoch Hills.

Partridge.—Generally common all over the parish.

Golden Plover.—An occasional winter visitor. Last winter there were considerable flocks of them in the water-meadows, where they remained till late in the spring, indeed as late as the 30th of March,

which was the last I saw of them. I had one brought me that had been shot by one of the farmers about the 20th of March; it had nearly acquired its black breast.

Peewit.—A constant winter visitor, but irregular both in the time of its appearance and in its numbers. This winter they were very numerous, and stayed as late as the 1st of April.

Heron.—Not at all uncommon about the brook and the different ponds; indeed I have seen as many as five walking about at one time by the part of the brook which runs through the fields in front of my house.

Green Sandpiper.—Occasionally to be seen about the pits in the lower parts of the parish. I saw a few last September for the first time for some years, and this year, on the 8th of August, I had two brought to me by one of the farmers, who had shot them near the same place I had seen them in last year: they are now in my collection.

Common Sandpiper.—A regular summer visitor, though not a numerous one. April the 17th is the earliest appearance of the common sandpiper that I have been able to note.

Woodcock.—Tolerably common, but varying much as to number in different years.

Snipe.—A pretty numerous winter visitor. Last winter, I suppose owing to the dryness of their feeding-grounds, these birds were extremely scarce. About the middle of October snipes generally make their first appearance, and the 1st of April is the latest I have noted.

Jack Snipe.—Generally much less common than the last; but this winter the usual order of things was reversed, and the jack snipe was the more numerous of the two.

Land Rail.—Tolerably numerous, though varying much in different years. This year they were very late; I did not hear them till the 2nd of June, though they are usually to be heard by the end of April.

Spotted Crake.—As far as I know, only one specimen of this bird has been obtained in this parish; it was shot in a rushy meadow near the eastern extremity of the parish.

Moorhen.—Very common by the brook, and in all the pits and ponds in the parish. There is one young one just out of the nest in my pond now, as late as August the 10th.

Bald Coot.—Common in the two large ponds at Sandhill and Cotheleston all through the year. When these ponds freeze the coots

occasionally pay me a visit, as my pond does not freeze so easily, but they never stay here long.

Wild Swan.—One specimen was shot by my father on this pond on the 30th of December, 1829; there was another with it, which escaped.

Mute Swan.—There are some kept both at the Sandhill and Cotheleston Ponds, where they breed. They occasionally pay me a visit, but I always have to drive them away, as they bully all the other wild-fowl on the pond; I should otherwise encourage them, as it is a very pretty sight to see several of them flying over together.

Wild Duck.—Tolerably common through the winter in the ponds and pits, and occasionally in the brook; last winter both teal and wild ducks were very scarce, as all the ponds and pits froze.

Teal.—Nearly as common as the last, in the same localities.

Pochard.—An occasional winter visitor.

Tufted Duck.—Rather more common than the last, but still only an occasional winter visitor.

Goldeneye.—One or two specimens, young birds, have occurred on the Sandhill Ponds.

Smew.—One specimen, a female, was shot by my father on the Sandhill Ponds on the 20th of January, 1840; it is now in my collection.

Sclavonian Grebe.—One specimen was shot by Mr. Esdaile, on his pond at Cotheleston, and is now in his possession.

Herring Gull.—On the legal maxim, "Cujus est solum ejus est usque ad cælum," I may number this and the following species as belonging to this parish, for they are often seen flying over, especially in rough weather.

Common Gull.—Occasionally seen flying over, like the last. This ends, at present, the list of birds to be found in this parish.

CECIL SMITH.

September, 1865.

Ornithological Notes from North Lincolnshire.

By JOHN CORDEAUX, Esq.

(Continued from page 9774.)

SEPTEMBER, 1865.

Blackheaded Gulls.—It is not unusual to see these gulls, like swallows, busily hawking for moths and flies. In some days in the early part of this month I frequently observed them thus employed,

flying with light and buoyant motion backwards and forwards over the marshes and the fore-shore of the Humber, and certainly in this extraordinary insect year they would have but little difficulty in procuring an ample meal. As far as I could ascertain, the particular object of their pursuit was confined to one species of fly, the common crane-fly (the "daddy long-legs" of our young days). I never before remember having seen such myriads of these long-legged pests as for a time swarmed on the grass-lands in these marshes: it was almost impossible to place one's foot on the ground without treading on some, and in every direction, and as far up as it was possible to discern, the air literally swarmed with them: from their slow and ungainly flight they fell an easy prey to the gulls, which certainly made good use of the opportunity thus afforded them of obtaining a livelihood. Although not able to compete with the easy, graceful sweeps and rapid turnings of the swallow, they exhibited an uncommon aptitude for this pursuit: sometimes a gull would remain poised for a moment, like a tern, and then descend rapidly for a few feet; now one would as suddenly dash upwards, and often in endeavouring to take a sharp turn, to capture some passing fly, would for a moment lose its balance and topple half over in the act of grasping its prey. These flies continued in the neighbourhood about ten days, when they gradually decreased in number and finally disappeared. Millions were daily driven over the banks by the land breeze, to be for ever extinguished in the mud-flats of the Humber.

Late Partridges.—I knew of a nest of young partridges which came out of the shell on the Ist of September, and got safely away to the shelter of a strong piece of wheat stubble, where I hope at some future time again to make their acquaintance.

Terns.—Large flocks of terns were seen in the Humber during the first week in September. It is seldom we see them in any great number far up the river, unless driven in by stress of weather. Previous to high winds and rain I have known hundreds assemble about the mouth of the Humber. This large collection of terns, as far as I could ascertain, consisted of but two species, the common and lesser terns, in about the proportion of twenty of the former to one of the latter species: two which I procured were the so-called common species. It is a most unusual circumstance in this neighbourhood to see so many together at one time.

House Sparrow.—It is extraordinary what a small hole these troublesome birds contrive to insert themselves into for the purpose of nesting. This habit is not, however, in all cases unattended with danger

to the intruder. In this district, where nearly all the houses and buildings are covered with tiles, sparrows frequently contrive to get under the tiles, by the small space left by chipping off the corner of the tile to make it fit in with the succeeding tile. I lately observed on the roof of a barn the carcasses of five sparrows hanging by the neck from these small holes: the birds had evidently inserted their heads underneath the tiles in their endeavours to force a passage, and in drawing them back again had been securely trapped in the angle between the two tiles, and had thus perished miserably.

Cormorant.—These birds do not altogether confine themselves to a marine diet, but where fresh-water fish abound will go far inland to procure them. They are commonly seen on some of the Welsh lakes: Lake Cwellyn, famous for its trout, is a favourite haunt of the cormorant, where, when not employed in fishing, they take their station on the large boulders near the margin of the llyn; some of these stones are quite white with the droppings of these harpies. During a recent visit to this lovely lake I heard, late in the evening, the cry of the cormorants echoing through the mountains, and early the next morning, when rowing across the llyn, put one up from the chaos of boulders near the foot of the Mynydd Mawr: it turned out one of the common species.

Gray Wagtail.—This bird is never seen in Lincolnshire during the breeding-season, although it is common enough during the winter months. They appear to resort, during the summer more especially, to the mountainous districts of England, and I observed them to be common everywhere through North Wales, enlivening the banks of the mountain-streams and the shores of the lonely llyns, probably retiring to the lowlands on the approach of winter.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
October 2, 1865.

Ornithological Notes from Norfolk, during August and September.

By HENRY STEVENSON, Esq.

(Continued from page 9577.)

A FINE pair of Montagu's harrier, with a nestling still retaining much down amongst its young feathers, were sent to a bird-preserver in this city, about the middle of July, having been killed on the river near Brandon, where they had evidently bred this summer.

August 4. An immature bird of the great spotted woodpecker, shot at Framingham Earl, near Norwich, where I have reason to believe they nest every year.

August 5. Two specimens of the little stint (*Tringa minuta*) were sent to me from Salthouse, where a small flock had been seen on the beach. The appearance of these birds, which had lost but little of their summer plumage, shows how early some species of this class commence their southward migration.

August 6. A young ornithological friend, who is accustomed to dissect and stuff such birds as fall to his own gun, informs me that, on the above date, he killed a female nightjar, which was flying in company with some eight or ten others, and, strange to say, on clearing out the cranium, he discovered not less than twenty-four white worms, from half an inch to an inch long, perfectly lively, in the interior of the head and the soft inner portions of the eyes.

August 23. Wednesday, the 23rd of this month, was remarkable for the extraordinary number of birds, which, from about nine o'clock in the evening until three or four o'clock the next morning, were heard almost incessantly over the city, attracted no doubt by the glare of the gas-lamps. The night was extremely dark, and the close sultry air foretold the storm, which, about 2 A. M., culminated in one terrific flash of lightning, accompanied by a deafening peal of thunder and a perfect deluge of rain, for nearly an hour. I first heard the cries of these birds myself about ten o'clock, and listened to them for more than an hour in my garden, without being able, even with the aid of adjacent gas-lamps, to distinguish anything. By their notes the main body seemed to consist of golden plovers, their plaintive whistle sounding most melodiously in the still night air, and with these I fancy I detected a few peewits, and now and then the cry of the redshank, or at longer intervals, as if detached from the others, the note of some species of tern. As usual, on such occasions, the flocks seemed to pass backwards and forwards, calling incessantly to keep their numbers together; now apparently just overhead, and so low down that a shot from a fowling-piece must inevitably have done execution amongst them; now dying away in the distance, only to return again; and thus throughout the night they kept hovering round, and were heard as noisy as ever both before and after the storm. So great was the uproar occasioned by their unusual numbers that many persons were awakened by them, and this strange evidence of nocturnal migration became a general topic of conversation for some days. All kinds of stories were, of course, in circulation as to the species

composing this autumnal flight. Owls had been heard to hoot by the road-side; large white birds, *as big as wild geese*, had been seen dashing round the lamp-posts; and one man was reported, on the *best authority*, to have fired up at the noisy throng, and to have found two or three golden plovers dead in his garden next morning. Unfortunately, however, for this apparently convincing statement, I found, on making inquiries of the individual himself, that he had merely said, "*if* he had fired his gun he must have killed some of them, they flew so low." Thus much, then for mere rumours, but although the cries of such birds over the city, at certain periods in the autumn, is not an uncommon circumstance, the numbers and amount of vociferation on this particular occasion were very remarkable, the latter induced no doubt by the coming rain, the term "pluvialis" being applied to the golden plover, from its restless nature during unsettled weather. As far as I could learn, they were heard for several miles around the city, and in every direction; but I cannot ascertain that any were seen on the following morning, as might have been expected, resting in the fields or meadows in the surrounding neighbourhood. On referring to my note-books for the last fifteen years, I find records of several similar instances, under the following dates:—1850, November 29th, December 1st; 1851, October 21st; 1856, August 20th; 1857, October 13th; 1860, August 14th. In every case I have noted that the nights were very dark (and hence the attraction of the city lights would be much greater), and on the 20th of August, 1856, the weather had suddenly changed to wet with incessant rain for twenty-four hours, causing a moist harvest time, as in the present year. As a proof that the golden plover and other allied species commenced their southward movements as early as the middle of August, though for the most part passing us unheeded on their nocturnal course, I may also add that in the same week of August, 1856, I was shown two young golden plovers, quite fresh, which had been picked up dead under the telegraph-wires on the Yarmouth line.

In connection also with the occurrence of these birds in Norfolk, I must also direct the attention of your readers to a note in the 'Field' of September 9th, in which a correspondent signing himself "Philornis" writes of an extensive "flock of wild-fowl," as passing over the town of Leicester about eleven o'clock on the very same evening (September 23rd). "Attracted by their loud notes," he says, "I opened the door and stepped out, and saw the dark outline of a flock of birds going in a south-westerly direction. There was not light enough in the sky by which to make out the colour, size, or exact species of

them; but they appeared to be a straggling flight of Brent geese, accompanied, however, by birds of smaller size. This I gathered from the different notes they uttered. The majority were unquestionably geese of some kind or other, and their attendants were, I think, of the plover species. A friend of mine who heard them fancied he could detect the note of an owl among the rest."

August 27. A small flock of turnstones seen at Blakeney already; a young bird of the year was shown me to-day.

September 3. I never remember to have seen any notice of the partiality shown by our common hedgesparrow for our turnip-fields in the early part of the autumn. I have frequently noticed, whilst partridge-shooting, the number of these little creatures that rise singly here and there amongst the swedes or "whites," flying a short distance only to settle again, or shuffling along between the ridges, more like mice than birds. They are not confined, also at these times, to the vicinity of the hedges, but are scattered generally over the fields, finding probably some favourite grub or insect on the leaves or roots of the turnip.

September 12. Mr. J. H. Gurney, jun., informs me that a pigmy curlew was killed at Blakeney on the above date, and on the same day he observed a flock of turnstones and a skua gull. The pigmy curlew is not unfrequently met with in that locality, but occurs for the most part singly, or associating with a flock of dunlins. In the 'Field' of the 16th of September, Mr. F. Hele, of Aldborough, Suffolk, states that no less than fifteen of these rare sandpipers had been killed at Thorpe and other neighbouring localities, in August and the beginning of September, with three or four little stints and two Temminck's stints.

September 13. Some five or six couples of bartailed godwits were exposed for sale in our fish-market, in every state of change from summer to winter dress, one, however, still retaining its full breeding plumage.

September 16. The present season would appear to be somewhat prolific in rare Tringæ, as a fine specimen of the pectoral sandpiper was killed on the above date, at Caistor, near Yarmouth, and was sent, in the flesh, to a Norwich bird-stuffer for preservation. Unfortunately a shot had rendered the sex undistinguishable by dissection, but the bird is somewhat smaller than some I have seen, and has still much trace of the summer plumage on the head and back. This is the third example known to have occurred in Norfolk. The first, a female (as also the first known British specimen), was shot on Breydon muds on the 17th of October, 1830, and came into the possession of the late

Mr. J. D. Hoy. The second, in Mr. J. H. Gurney's collection, was also procured near Yarmouth, on the 30th of September, 1853.

September 24. A fine adult gannet, killed on Breydon,—a rather unusual event, as, except in stormy weather, these birds keep out in the "Roads," more particularly the old ones.

On the 23rd a fine young common buzzard was shot at Beeston, near Norwich.

H. Stevenson.

Norwich, September 30, 1865.

Ornithological Notes from West Sussex.

By W. Jeffery, jun., Esq.

(Continued from p. 9718.)

August, 1865.

Blackheaded Gull.—Saw a bird of this species on the 6th, which to all appearances had not commenced the autumnal moult.

Tree Pipit and Ray's Wagtail.—These birds have been more frequently heard than seen, passing over (generally in a southerly direction) since about the end of the first week in August, not in flock, but usually two or three together. About the 22nd, however, the wagtails seemed to be rather more numerous for a day or two, as many as from ten to twenty being seen together. I shot four on the 22nd, all very different in appearance from the richly coloured males which pass this way in the spring of the year. I think at least three of these were birds of the year, the fourth may have been an old female.

Pied Wagtail—During the latter part of the month (from about the 14th) pied wagtails have been very numerous on pastures, road-side commons, and other such places where cattle are to be found. They do not stay long in one place, but keep passing on. As a rule they are not so shy, nor do they fly so high, nor so far at a time, as the Ray's wagtail and tree pipit, merely passing from one meadow to the next, and so on. I have not as yet been able to detect a single specimen of the white wagtail amongst the numbers of the common species which pass this way every spring and autumn, though Captain Knox, in his 'Systematic Catalogue,' tells us that it has occasionally been obtained in Sussex.

Wood Sandpiper.—One killed in or near Pagham Harbour, on the 15th, is now in my collection. This is a rare bird in Sussex; Captain

Knox mentions four having been obtained near Worthing, in September, 1851. This, however, is the only specimen that I have known to be killed in this neighbourhood.

Swift.—Saw about thirty on the 20th, flying in a southerly direction, in the evening; none seen since this. On the 17th I shot a very light-coloured, nearly white, specimen.

Redshank.—Has been observed on the coast throughout the month, tolerably numerous. Greenshank seen about the middle of the month: turnstone rather earlier. The gizzard of a redshank dissected contained some small winged insects.

Blacktailed Godwit.—A bird of this species was shot at Pagham Harbour about the 26th. Five were seen, but only this one obtained; I believe it to have been a young female. The measurements, taken before skinning, were as follows:—length 14 inches; extent of wing 29 inches, from carpal joint to tip of longest primary $8\frac{3}{4}$ inches; bill along ridge $3\frac{1}{4}$ inches. The contents of the stomach consisted of small gravels and marine shells. The two specimens that I have before obtained, both in the month of August (see Zool. 9289), were killed near fresh water.

Ruff.—A specimen killed at Pagham on the 26th. I have obtained the ruff on two or three former occasions in the autumn; and in April, 1861, one was killed at Fishbourne, which had partially resumed the long feathers which form the ruff in the adult bird.

White Stork and Gray Wagtail.—On the 14th I saw a fine specimen of each of these rare British birds at Mr. Pratt's, Ship Street, Brighton. The stork had recently been killed near Hailsham, and sent to him for preservation, and the wagtail was shot by his son near Shoreham in the spring of the present year.

SEPTEMBER, 1865.

Gray Wagtail.—This species is pretty regular in its autumnal migration, usually making its appearance during the first week in September; I first saw it this autumn on the 3rd. The gray wagtail is solitary in its habits, and is never, while in the south, seen in flocks, as are the others (pied and Ray's); indeed, if two happen to meet, one is certain to chase the other away. Very frequently during these chases they utter a pleasing little song, and I believe this is the only time that they are heard to sing while with us.

Green Sandpiper.—Has been very scarce of late; one seen on the 5th in the forenoon, flying northward.

Tree Pipit and Ray's Wagtail.—A few heard passing over as late as the middle of the month.

Pied Wagtail.—Pied wagtails have not been quite so numerous this month as last, although considerable flocks have at times been observed, and some as late as the 30th. On the 24th I saw about fifty together; this was towards sunset.

Chiffchaff.—I have heard one of these birds, probably the same one, from the 1st to about the 13th. Willow warbler heard at the end of the month. Sedge warbler occasionally seen.

Meadow Pipit.—During the last fortnight meadow pipits have been very abundant. Some few of these birds breed about here, but, strange to say, so far as my experience goes, they prefer either the downs or the vicinity of the sea to the land lying between the two, during the breeding-season; since about the 17th, however, they have been numerous everywhere.

Missel Thrush.—Missel thrushes congregate now; saw a large flock on the downs on the 10th, but no ring ouzels seen yet.

Wryneck.—Shot one on the 25th. This must be much after the usual time of its departure from this country. The stomach of this bird was filled with remains of the small yellow ant.

Kingfisher.—Can any reader of the 'Zoologist' say where the great part of the kingfishers breed? It is unusual to see a kingfisher about here in the breeding-season, and still more so to find a nest of that bird, and yet every autumn we see numbers of them, both old birds and young. They are first seen about the latter end of July, and by the first week in August are constantly seen and heard. Is there a general migration (southwards or otherwise) of the kingfisher at this season? I think we do not see so much of them in the winter as just now; they then frequent salt water more. I am not aware that any kind of food is more abundant about here just now than at other times.

W. Jeffery, Jun.

Ratham, Chichester, October 7, 1865.

Record of a Day in Kaffraria. By Capt. G. E. Bulger, H.M. 10th Regiment.

(Communicated by P. H. Gosse, Esq., F.R.S., &c.)

Windvogelberg, Thursday, October 8, 1863.—The early morning was quite cold, but soon after the sun rose the air began to get warm, and the day subsequently proved exceedingly hot. About 8 A.M.

B——, S——, H—— and I, having provided ourselves with all the necessaries for an abundant luncheon, started in Mr. Ferreira's buck-wagon for the Kei Poort,* that is to say the place where the Zwarte Kei† runs through a pass in the hills. Our vehicle, drawn by ten oxen, was one of the ordinary tilted wagons of the colony, though a good specimen of its kind, and the only representative of a seat was a sort of frame-work, upon which, I believe, during long journeys it is the custom to stretch a mattrass and bedding.

Our route lay over the nek‡ of the Windvogelberg, just above the Post, and thence along the Tylden road to the valley of the Kei. The descent, after we had crossed the nek, was steep and sudden, and the track much broken by ruts and large stones, which rendered the jolting and shaking something positively painful, exceeding my worst anticipations and all my previous experience in land travelling.

After about three hours of such journeying, through a country covered with coarse grass and a thin growth of mimosa trees (*Acacia horrida*), we reached our destination, and outspanned§ within two hundred yards of the river. The distance between the Post at Windvogelberg and the Poort is said to be eight or nine miles, and we supposed that the estimate was nearly correct, judging by the time the journey occupied, and the rate at which the oxen travelled.

Before we commenced the descent I have spoken of, S—— saw a paauw‖ (*Otis*) of some kind fly across the road in advance of us, and he immediately gave chase, in the hope of getting a shot; but fortune did not so favour him, and the bird continued its flight for a very long distance, finally disappearing on the tops of some hills upon our right. Just as S—— got back to the wagon, a huge green snake was espied crossing the road, and an immediate onslaught was made upon it: the creature was speedily despatched by the aid of the long wagon-whip, and its carcase deposited in the vehicle, to be taken home with us and preserved. Unfortunately the heat of the day defeated our intentions in this respect, and, on our return to the Post in the evening, decom-

* The literal meaning of "poort" is gate: the expression is applied at the Cape to most of the passes through the hills.

† "Zwarte Kei," the Black Kei. It rises in the Great Winterberg Mountain, about 7000 feet above the sea. It is the main branch of the Great Kei.

‡ "Nek" means literally a neck. It is applied to the dips in the hills over which the roads generally run.

§ The colonial phrase for unharnessing and taking out horses or oxen from a vehicle.

‖ Literally "peacock:" the larger bustards are so called by the Cape colonists.

position had already set in, and so the snake had to be thrown away: it was a small specimen of the Bucephalus viridis of Smith.

The Kei, so far as my observation extended, appears to follow a very winding course, and, on the whole, may be considered handsome, for the water, though thick and muddy-looking, is broken by little rapids in many places, and the banks are alternations of high krantzes * and low, reedy and grassy land, which is decked with weeping willows (*Salix gariepina*) of considerable size and much beauty. The average width of the stream is perhaps somewhere about fifteen or twenty yards, but it varies so constantly in this particular that anything like a correct estimate is next to impossible.

Immediately after our arrival we sallied forth from the wagon in different directions, in search of ornithological and botanical novelties, B—— and H—— going up the stream, whilst S—— took an opposite course, in which I speedily followed him. Everywhere gorgeous flowers were in bloom, rendering the country gay with their bright corollas, and relieving the dark hues of the krantzes with stars of scarlet, white and rose-colour. The strange but handsome Cotyledon orbiculata was very plentiful, and its bright red bell-like flowers appeared in every little nook or cranny of the rocks. Scarlet and rose-coloured Gladiolus, too, were growing abundantly, with a number of other kinds of ornamental herbs; but, conspicuous above all for its splendid beauty, was a little amaryllidaceous plant, displaying blooms of pendant trumpet-shaped corollas of the most intense and lustrous scarlet-crimson, which, only a few inches above the surface of the earth, contrasted strikingly with the bright green of the grass around them. This superb little plant I take to be that which Backhouse mentions in his 'Travels' as Cyrtanthus angustifolius, though Paxton, in his 'Botanical Dictionary,' describes angustifolius as orange, while he gives collinus and odorus as the specific designations of the only crimson kinds.

About one o'clock we reassembled for luncheon, and compared notes. We had all found the heat exceedingly great, and none of us had seen anything very new; indeed there were no birds with which we were not familiar at Windvogelberg, and almost the same may be said of the plants. S—— had got a shot at a pair of hadada (*Ibis sylvatica?*), but they were too far off to suffer much from his charge of small shot: he had followed the course of the stream for some distance along the edge of the water, returning over the crest of a high krantz, which extends, on the right bank of the river, from just

* Rocky precipices.

below the drift,* where we had outspanned, for perhaps a mile or so. This krantz had been the scene of my explorations, but it produced me scarcely anything. I observed a long-winged hawk of some description, probably the rock kestrel (*Tinnunculus rupicola*), flying about the face of the cliff, here of considerable height, and running sheer up from the water's edge, where there were also numbers of the common swallows of the country, Hirundo capensis. A small wooded island close to the foot of the aforesaid krantz was equally unproductive, and, at the time of my visit, it appeared literally uninhabited. On the summit of the cliffs I met S—— returning, and, whilst we were sitting on a rock to enjoy the cooler air of the high land, a beautiful little dove, Turtur cambayensis, dashed past us, and shot down to the trees in the valley of the river. Here we got some bulbs of the splendid scarlet-crimson Cyrtanthus I have spoken of, and S—— had already secured those of another beautiful species of the same family, Cyrtanthus uniflorus, which has blossoms elegantly striped with purple.

B——'s chief anxiety was to secure specimens of a very lovely scarlet reed-bird (*Loxia oryx*), of which he had seen hundreds in this place some two or three months ago, and also of the beautiful green spreeuw † (*Lamprotornis Burchellii*), one of the handsomest birds in the colony, its blue-green plumage possessing that wonderful metallic lustre, which varies in the different lights and flashes like polished steel; but the doctor was doomed to disappointment; not a scarlet finch was visible, and the few spreeuws which he met with were very wary, and kept out of reach of his gun.

H—— killed a good specimen of the common dove of these parts, Turtur semitorquatus, as also one of those curious but handsome birds which, I believe, are called "monkey-birds" in the colony, and sometimes "monkey spreeuws;" but they belong to quite a different tribe to that of the Lamprotornis, and are more nearly related to the hoopoes: Promerops erythrorhynchus is the scientific designation of the one I allude to, and it has glossy black plumage, with a long scarlet curved bill (which looks as if it were made of red sealing-wax) and scarlet feet.

After luncheon we started again for another short ramble previously to returning home, but, like the former one, it was not characterized by the discovery of anything very new. To the left of our camping-place, on the river-margin, is a patch of high rank grass and reeds,

* A ford. † "Spreeuw" is Dutch for starling.

and, as I wound my way through this place towards the water, I knocked up a hare* (*Lepus rupestris*), which I might have shot if I had been careful, but, before I could get my gun ready, he was out of range. After this I obtained a pair of beautiful little sandpipers (*Charadrius zonatus*), which were feeding on the gravelly edge of a little tributary of the Kei. In this neighbourhood I also saw one of those most lovely birds, the longtailed Kaffir finch (*Loxia Kaffir*), but he made off when I approached, and disappeared amongst some fields. A few more doves—which, by the way, make an excellent pie—completed our list of trophies for the day, and we left the Kei at 4 P. M., arriving at Windvogelberg some four hours afterwards.

G. E. Bulger.

Frogs eaten by a Cat.—One of our cats has lately taken to catching frogs. A few days ago I saw her and her kitten playing with a mutilated frog, which she had brought into the kitchen and partly eaten, and our cook says this has been done several times recently.—*George Maw; Benthall Hall, Broseley.*

Sword-fish and Tunny off Penzance.—A large sword-fish has been seen in this bay repeatedly within the last three days. We were fishing yesterday off Lamorna, in about eight fathoms of water, and close in shore, when our attention was attracted by a noise in the water near us. It was caused by a large shoal of gerricks scudding very rapidly on the surface of the water. The appearance was as though the fish were actually swimming on the surface, with the larger portion of their bodies in the air, but this was probably an optical delusion, caused by the constant succession of fish coming to the surface. They passed close by us, less than five fathoms from the bows of our boat, and as they passed we saw in chase of them certainly one, and probably more than one, large tunny ("albacores," as they call them here). The tunnies were dashing about after their prey, almost on the surface of the water, and removed all doubt as to their identity by more than once springing clean out of water close by us.—*Thomas Cornish; Penzance, September* 13, 1865.

Life-History of Melitæa Artemis.—The eggs, which are somewhat flattened on the crown, are laid on the under side of the leaf of Scabiosa succisa (devil's-bit scabious), those leaves nearest the ground being selected for this purpose; the usual period of

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* My friend Mr. E. L. Layard, the curator of the Museum at Cape Town, informs me that this hare, though usually confounded with Lepus rupestris, is, in fact, a different species, unnamed as yet, I believe.

oviposition is from the beginning to the middle of June. In about a fortnight, that is, from the middle to the end of June, the young larvæ emerge; they have then black heads and ochre-coloured bodies: almost immediately after emergence they begin drawing together two or three leaves of the scabious or of the neighbouring herbage, and spin a slight gauzy veil over the interstices; enclosed in this domicile, they devour, in company, the under side of a scabious leaf, leaving only the epidermis, which very soon becomes brown in blotches: as soon as the little community has extracted all the nutriment from the leaf or leaves included within the first enclosure, it moves to other leaves, and by united labours the larvæ construct a much larger dwelling, sometimes even extending over the leading stem and enclosing the flowering stem with its apical flower-bud. Towards the end of summer the larvæ, then scarcely half-grown, become sluggish, and, ceasing to eat, they descend low down among the herbage, where they again spin a silken domicile, beneath the shelter of which they pass the winter: as soon as the plant begins to grow in the spring, these larvæ break up their winter establishment, and each seeks its own provisions, independently of the others, and without the protection of a web; indeed they seem quite fearless of exposure, often indulging in a noon-day siesta in bright sunshine on a dried leaf, or in any other exposed situation; this continues until the end of April, when, being full fed, the larval existence terminates: at this period the larva rests in a straight position, but falls off its food-plant when touched or disturbed, and forms a lax ring, the head tucked in and the anal extremity protruding. Head scarcely narrower than the 2nd segment, semiporrect, emitting stiff bristles: body obese, incisions of the segments well marked; 2nd segment with two short bristly obtuse spines on each side below the spiracles; the 3rd and 4th segments have each eight spines; the 5th and succeeding segments have each nine spines, the additional spine being mediodorsal, and the aggregate of these forming a mediodorsal series; all the spines are short, obtuse, scabrous, and furnished with bristles. Colour of the head black: body velvety black, irrorated with circular white dots, which are irregularly ranged in three principal but ill-defined series; one mediodorsal, the others spiracular; each white dot emits a black bristle from its centre; legs black; claspers pale smoke-coloured. It is worthy of remark that in the supply of this larva under my notice nine out of every ten were infested by ichneumonideous parasites; these emerged from the lepidopterous larvæ in the larva state, and spinning little silken cocoons outside the larva, fastened down the wretchedly atrophied but still living larva of the butterfly, and, fixing it immovably, left it to perish miserably: the number of these parasites in each larva varied from ten to twenty-six; the cocoons which they spun were of a pale sulphur colour, and were elongate-oval in shape: the majority of them emerged between the 18th and 25th of May, and proved to be a species of Microgaster. It would appear that but a small proportion of the larvæ of Melitæa Artemis escape this formidable parasite. The full-fed larva of Artemis generally selects some curled leaf or mass of tangled herbage, and thus concealed spins a slight silken coating over the surface of the object selected, and suspending itself by the anal claspers, changes to a pupa, which hangs in the same way. The pupa is short and obese, the head being transversely produced in front and broadly truncate; the base of each wing-case is slightly produced: the abdomen is very convex, its anal extremity bent under towards the extremity of the wing-cases, and the dorsal outline being almost semicircular; the caudal extremity is attached by the cremastræ to a slight web spun about the margin of the scabious leaf. Colour creamy white (changing, as the time of metamorphosis approaches, to a deep

orange), variegated with black and orange markings; the cases of the legs have black markings only, but those of the antennæ are black and orange alternately, the latter colour in very small dots; the dorsum of the thorax has two conspicuous black lunate marks, each having a yellow dot behind it: the eight abdominal segments have each a transverse series of lunate black markings, and behind each of these, and partially enclosed by it, is a bright yellow spot with a nipple-shaped excrescence in the middle; the wing-cases are adorned with black markings. Prior to the final change the pupa assumes a darker and richer hue, approaching to dull orange, and exhibiting beneath the wing-cases the colours of the butterfly. The butterfly makes its appearance in about fourteen days; this period, however, depends in some measure on the temperature, a cold April delaying their final change for a few days: if the spring is warm and vegetation forward, the larvæ have a better chance of feeding up early, and the male butterflies begin to appear the second week in May, most of the females emerging some days later: this butterfly has a slow and gentle flight, and is very easily captured; it delights in damp meadows, and is fond of resting in the sunshine on leaves and flowers with expanded wings, and apparently enjoying the warmth: in cloudy weather it will allow itself to be taken by the hand from a flower on which it is resting, and at no time does it fly to any considerable distance from its birth-place: in the damp meadows near Leominster it occurs year after year in the same spot, and may be met with from the middle to the end of May with the greatest certainty. Copulation takes place in June, and oviposition commences soon afterwards. I am indebted to Mr. Merrin, of Gloucester, for a liberal supply of this very imperfectly-known larva: the same gentleman has most kindly furnished me with materials for compiling its history.—*Edward Newman.*

Proceedings of Societies.

Entomological Society.

October 2, 1865.—F. P. Pascoe, Esq., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'The Journal of the Royal Agricultural Society of England,' 2nd Series, Vol. i. part 2; presented by the Society. 'Proceedings of the Royal Society,' No. 77; by the Society. 'The Transactions of the Entomological Society of New South Wales,' Vol. i. part 3; by the Society. 'Hübner (Jacob), Verzeichniss bekaunter Schmetterlinge;' by W. F. Kirby, Esq. 'Exotic Butterflies,' Part 56; by W. W. Saunders, Esq. 'Revision of the hitherto-known Species of the Genus Chionobas in North America,' by Samuel H. Scudder; by the Author. 'The Zoologist' for October; by the Editor. 'The Entomologist's Monthly Magazine' for October; by the Editors.

Exhibitions, &c.

Mr. W. F. Kirby exhibited a female specimen of Sterrha sacraria captured by his brother near Brighton, on the 18th of July last.

Mr. J. J. Weir exhibited three specimens of Xylina petrificata, one of which bore great resemblance in colour to X. semibrunnea.

Mr. W. F. Evans exhibited two malformed specimens of Vanessa Atalanta; one of which, caught near Bradford, Yorkshire, in 1864, had the left antenna only half the length of the right; notwithstanding that it possessed the usual number of joints; the other, bred from the larva at Herne Bay, in August, 1865, had the wings on one side considerably larger than on the other.

Dr. Alexander Wallace mentioned that a specimen of Argynnis Lathonia had been seen, but not captured, by Mr. Harwood, at Colchester, during the previous week, a rather unusual time for its appearance.

Mr. Bond exhibited dried larvæ of Acherontia Atropos, Sphinx Ligustri and Macroglossa Stellatarum, preserved by Mr. Baker, of Cambridge, and retaining their colour as in life.

Mr. S. Stevens exhibited a box of butterflies, collected in Labuan by Lieut. de Crespigny.

Mr. M'Lachlan exhibited specimens of two species of Stenophylax, which had been sent to him by the Rev. G. T. Browne, St. Catherine's College, Cambridge, and which, together with an Ichneumon of the genus Paniscus, had been found in an ice-cave in the Swiss Alps. In reply to Mr. Browne's enquiry how the insects came to be in such a situation, he (Mr. M'L.) had been unable to give any explanation which was applicable to the Ichneumon, but with respect to the caddis-flies he had suggested that the cave might be connected with the outer world by some subterranean passage or stream, up the course of which the larvæ had travelled. This had drawn from Mr. Browne the following:—"There was no communication with the outer air. These flies were found at a very considerable depth in the earth, down a rock-fissure, a good hundred feet below our point of entrance, which was itself low down in a face of rock. At the bottom of this we came to a chamber, one corner of which was shut up by a curtain of ice—hermetically sealed up. We hewed a hole through it—all was utterly dark—and found only ice within, with a narrow low passage, about two feet each way, leading lower still into the earth; stones sent down gave the sound of water. The ice-roof of the ice-trough was thickly studded with these flies, standing still, but running swiftly when disturbed. I caught two, lying flat on my back and lowered by a rope. The other two were found on my dress and beard when I was dragged up again. The three that are alike [the Trichoptera] I have found in other ice-caves; the fourth, something like a huge flying ant [the Ichneumon] I have not found in such situations. Every one's idea must have been, What *could* they want with eyes?"

Mr. W. W. Saunders exhibited the bulb of an Orchid from New Grenada, which was covered with and had been destroyed by two species of Coccus: the insects fixed themselves on the bulb, which soon became wizened and withered, and the plant died under their suction. Both species were of the kind known to gardeners as "limpet-scales," one of them being about twice as long as broad, whilst the other was round and expansive, and looked like the half of a little bivalve shell; the young ones might be killed by washing the plant with a mixture of water and spirits of wine, but when they grew older and had a hard case over them this ceased to be effectual; and if poisons were applied to kill them they reached the root and killed the plant likewise. There seemed to be a continual development of these pests, and an entire absence of periodicity in their appearance; young ones were produced continually, and, though search had been made both by day and night, not a single male had been observed.

Mr. S. S. Saunders exhibited numerous specimens, preserved in spirit, illustrative of the transformations of the Strepsipterous insect, Hylechthrus Rubi: amongst them were the apod larva in a Hylæus nymph, another exposed by removal of the last segments of the Hylæus, and one extracted entire; a male nymph in the pupa-case, the operculum apart; a male imago with its wings erect, the pupa-case and operculum apart; females on their first protrusion, and another extracted entire on the second day. Also a parasite on Polistes Gallica, with the larvæ of each.

Mr. J. J. Weir enquired the use of the anal appendages of the earwig; there was no doubt that Staphylinidæ used their appendages for the purpose of closing or pressing in the wings after flight, and he believed it was mentioned in Kirby and Spence that earwigs occasionally used theirs in opening their wings; he had observed the small earwig (*Labia minor*) perform in this manner; the wings were partially protruded, and then pulled out by means of the appendages, and he had come to the conclusion that this was the natural function, or at all events one of the functions, of those organs, and doubted whether the wings could be expanded without the use of the appendages.

Prof. Westwood was inclined to think that the appendages were more ornamental than useful, and that their use, if any, was rather for the purpose of defence.

Mr. S. H. Scudder, Soc. Nat. Hist. of Boston, U. S. A. (who was present as a visitor), exhibited two fossil specimens (one the reverse of the other) of a gigantic Ephemera, which must have measured five inches in expanse of wings. This with some other fossil insects had been found by Mr. Hartt in the Devonian series of North America, in a ledge of rock which ran out to sea, so that they could be examined only at low tide; and respecting them Mr. Scudder read the following note:—

"*On the Devonian Insects of New Brunswick.*—There are in all ten specimens in Mr. Hartt's most interesting collection of the fossil remains of insect-wings from Lancaster, eight of which are reverses of one another, thus reducing the number to six individuals; of these, one, a mere fragment, belongs, I think, to the same species as another of which the more important parts of the wing are preserved, so that we have five species represented among these Devonian insects, and these remains are all, I suspect, composed of portions of the anterior wing alone. The data being thus fragmentary, the conclusions cannot be quite so satisfactorily determined as we could wish, but we can still discover enough to prove that they are of unwonted interest. Besides the peculiar interest which attaches to them as the earliest known traces of insect life on the globe, there is very much in themselves to attract and merit our closest attention. One of them is a gigantic representative of the family of Ephemerina among Neuroptera, some three or four times the size of the largest species now living, with which I am acquainted. Another borrows some striking points of the peculiar wing-structure of the Neuropterous family Odonata, and combines with them those of families remote from that, and even belonging to a distinct section of the Neuroptera, exhibiting to our view a synthetic type which combines in one the Pseudo-neuroptera and the Neuroptera, and represents a family distinct from any hitherto known. Other fossil insects, found in carboniferous concretions in Illinois, and described in 'Silliman's Journal' (N. S. xxxvii. 34), which Prof. Dana has kindly allowed me to examine, also belong to hitherto unrecognized families, exhibiting similar relations to these in-our-day-disconnected sections of Neuropterous insects; and a third species of Mr. Hartt's is a member of still another family of

Neuroptera, which finds its natural relations between the two described by Prof. Dana. A fourth, of which only an unimportant fragment was found, would seem to belong to the Neuroptera; but by some peculiarities of the minuter cross-veins, thrown off in the middle of the outer edge of the wing, in a most irregular and unusual manner, suggests no intimate relations with any known family, but must have belonged to a group of large and weak-winged insects. The fifth and last to be mentioned is of very striking interest, because, while it exhibits the peculiar venation which forms the well-known tympanum or stridulating apparatus of the male, in the Orthopterous family Locustariæ (though differing somewhat from that), it also most resembles the Neuroptera in all or nearly all the other peculiarities of its structure, and suggests the presence in the insect-faunæ of those ancient times of a synthetic type, which united the characteristics of the Orthoptera and Neuroptera, in themselves closely allied: this point, however, requires patient and severe investigation, and only my earliest impressions are here recorded,—made, however, immediately after a close examination into the relations of other fossil insects. I earnestly hope that this locality, from which these remains were disinterred, may receive a most careful and thorough examination. Hitherto the study of fossil insects has been mainly confined to those of much more recent date, and has resulted in shedding comparatively little light upon geological and palæontological questions; but these few remains, coupled with the pair of insects found in Illinois, induce us ardently to anticipate that the future study of fossil insects, drawn from such ancient strata as these, may lead to as brilliant and important results, in the elucidation of geological problems still open, in widening the range of our palæontological horizon, and in our general knowledge of the history of life on our globe in all its bearings, as have been reached by the study of the remains of animals of a more substantial structure, but which have hitherto been denied to the student of fossil Entomology."

Prof. Westwood mentioned that at the recent Meeting of the British Association, Prof. Grube had exhibited a fossil spider from the coal measures, which was perhaps identical with one figured in Petiver's 'Gazophylacium.'

Mr. Scudder mentioned that in the Brodie collection were fossil forms very much resembling some American spiders.

Mr. C. A. Wilson, of Adelaide, communicated another instalment of his notes "On the Buprestidæ of South Australia."

Prof. Westwood directed attention to M. Henri Deyrolle's recent work, 'Description des Buprestides de la Malaisie, recueilles par M. Wallace'; Mr. A. R. Wallace's collection of Buprestidæ had become the property of Count Mniszech, and M. H. Deyrolle had described no less than 355 species of that family.

The Secretary read the following account, with which he had been furnished, of the recent

Paris Exhibition of Insects.—"This curious exhibition has attracted the attention of men of science and agriculturists, but most particularly of those who are interested in the rearing of bees and silk-worms, which naturally occupy the chief places. The collection of bee-hives, some shown in operation, and of other matters connected with the rearing and management of these interesting insects, is considerable, and presents forms, in some instances, strange to English eyes. In addition to the bees themselves are specimens of their products and of the articles into which they enter, such as honey, wax, mead or hydromel, sweetmeats and confectionary. The largest portion

of the exhibition, however, was occupied by matters connected with the production of silk. An admirably arranged collection was shown by M. Jules Rieu, of Valréas, in the department of Vaucluse, including the white and yellow cocoons of the Japanese silk-worms, introduced into France in 1863, and extensively bred by M. Rieu; green cocoons also from Japan, introduced in the present year; silk spun from these various cocoons; models of the frames and other materials used in the silk cultivation; and specimens of the insects themselves in the various stages of their existence. M. Guerin-Méneville, M. H. Givelet and others exhibited numbers of the Bombyx Cynthia, and of other worms produced by the crossing of the former with the Bombyx arrindia, feeding on the leaves of the Ailanthus, and also several chambers containing cocoons and hundreds of enormous moths depositing their eggs. Others show products, preparations and sketches of the Bombyx yamamai, a very large green worm that feeds on the oak, and of many other new and curious species. But the Ailanthus worm seems to have attracted the greatest attention, and its cultivation is rapidly extending. M. Givelet, who published a report on the subject not long since, read a paper at the exhibition, and promises a more complete account of the best method of bringing this worm into cultivation on a large scale during the coming winter. This gentleman commenced planting the Ailanthus at the Chateau of Flamboin in 1860, and, after some misfortunes and disappointments, completely succeeded in the breeding and rearing of the worms. He reports that during the present season he has collected about twenty thousand cocoons, and that about three times that number are now on the trees in his plantation. The long continuance of hot weather had greatly favoured the experiments made in the rearing of Bombyx Cynthia. In the enclosure within the Jardin d'Acclimatation, in the Bois de Boulogne, may be seen at the present moment a large number of these worms of the third generation of this season, feeding in the open air on the Ailanthus, or spinning their cocoons. The creatures are of great size, and seem to be in perfectly healthy condition. The cocoons are generally formed at the extreme end of the branches, or rather of the leaves, for the Ailanthus has long compound leaves, with many leaflets, like the ash, where no bird, however light, could rest and make a meal of the occupant, and the worms take the curious precaution, before commencing the cocoon, to attach several threads of their web to the leaf-stalk as high as the third or fourth leaflet, so that, if that on which the cocoon is fixed were to be broken from its stalk, it would still be held pendant by these stay-threads. The Museum of Natural History at the Jardin des Plantes, contributed a fine collection of insects, with specimens of timber and other substances which have suffered from their ravages; also some remarkably large specimens of lobsters and crayfish from American waters. Another remarkable collection of insects is from Mr. T. Glover, the entomologist attached to the Department of Agriculture at Washington. M. E. Mocquerys, of Evreux, has an admirable exhibition of coleopterous and other insects which feed on the vine, cereals and other industrial plants. Dr. Eugène Robert contributed a series of sections of trees ravaged by xylophagous insects, together with illustrations of the methods which have been adopted by the authorities of Paris and other places, under his superintendence, for their destruction. There were other collections of more or less importance, and, amongst the curiosities of the exhibition, a landscape produced entirely by the arrangement of various coloured beetles. Apparatus and powders for getting rid of certain classes of noxious insects were numerous in the exhibition, amongst which, judging from the number of medals and awards granted to the discoverer, the powder

produced from the flowers of the Pyrethrum Willemoti seems to hold the highest place. It appears that the flowers of various plants of this family are extensively used in Persia, Armenia and other countries for like purposes. The Persian powder is said to be composed chiefly of the flowers of the Pyrethrum carneum, while the Armenians prefer the Pyrethrum roseum."

Dr. Alexander Wallace exhibited living specimens of Bombyx Cynthia in all its stages,—eggs, larvæ in four successive stages, cocoons and imago,—bred by him during the present year; also a branch of the Ailanthus glandulosa, having attached it to a paper cot containing eggs, to illustrate the mode in which the eggs were placed on the living tree out of doors the evening before hatching out. He also exhibited the mode of keeping the cocoons during the winter, strung up in chaplets of fifty each; the perforated zinc cylinders in which the moths were retained for copulation and the laying of eggs; the method of gathering and hatching out the eggs; and specimens of the silken thread which the larva before spinning the cocoon wove from the foundation of the cocoon along the leaf-stalk to the bough, so that though the leaf-stalk in winter became detached from the bough the cocoon would still remain suspended instead of falling to the ground. Specimens of the silk obtained both by carding and winding were also shown, and several hundreds of the cocoon and imago were distributed amongst the Members present. Dr. Wallace believed he was the first person in England who had attempted to rear the Bombyx Cynthia on an extended scale out of doors without any protection; Lady Dorothy Nevill was the first in this country to rear the species successfully, but this was done under the protection of nets; he was under great obligation to Lady Dorothy for having in the first instance supplied him with eggs, and with specimens of the Ailanthus; he had, in March, 1864, planted out by the side of a railway (see Zool. 9143) 3000 Ailanthus trees, which were then two years old; some died owing to the prolonged drought in spring, and during that year their growth was scanty; but in 1865 their growth had been very rapid, shoots six feet long and an inch in diameter having been put forth by May: the soil was a close loam. He had made another small plantation in his garden for the purpose of observation and to serve as a nursery; on this he had placed 18,678 eggs, which were laid between the 1st and 22nd of July; they were laid in the interstices or perforations of the zinc cages, rubbed off upon blotting-paper, and a glass placed over them; the paper could be moistened if necessary; in twelve or fourteen days, according to the greater or less heat, the eggs hatched, prior to which, however, batches of them were pinned in paper cots or bags on the trees in the nursery: once established on the trees, they grew continuously, and when the larvæ were about half-grown they were transferred to the trees in the larger plantation, and distributed over them; from these he had, in September last, harvested 5318 cocoons, very few of which were ichneumonized. No larvæ were observed to be eaten by birds, though sparrows were abundant, and were seen to pick off the Aphides from cabbages growing under the Ailanthus trees; he had lost about 200 by disease; but the greatest destruction was in the nursery during the first two changes, when spiders, lady-birds, earwigs and Carabi thinned their numbers to some extent; in 1864 wasps were observed to carry off the young larvæ, and likewise ants; there appeared also to be a parasitic fly (Tachina), and tom-tits were destructive to the larvæ. The growth of the tree was most surprising, and after the leaves had been entirely consumed by the silkworms, another growth of foliage was emitted sufficient to nourish a second brood of

worms. Of his first brood, 563 moths hatched between the 22nd of May and the 27th of July; of these 230 fertile pairs were obtained; their eggs were laid from the 24th of May to the 26th of July, and were 37,000 in number; the first larva from these hatched on the 11th of June, spun up on the 15th of July, and emerged on the 20th of August. Of another batch of larvæ, the eggs of which were laid on the 6th and 7th of June, the first hatched out on the 23rd of June, spun up on the 20th of July, and emerged as a moth on the 23rd of August,—an interval of thirty-four days,—which spoken of in France as a very short period for the egg to develope into a cocoon, whereas in this instance the change took place in twenty-eight days. Of his second brood, 101 moths hatched between the 21st of August and the 21st of September; thirty-six fertile pairs were obtained; their eggs were laid from the 23rd of August to the 7th of September, and were 3438 in number; the first larva from these hatched on the 7th of September, the last on the 19th of September, and the first would in two or three days from that time be undergoing the last moult prior to spinning. Thus, owing to the extraordinary warmth of the season, a second brood would be obtained, and, by commencing earlier in the year than he had done, this might be made more certain; indeed Lady Dorothy Nevill had her second brood spun up in cocoon in September. The silk was for the first forty-eight hours quite white; it then became moist, especially at the lower end of the cocoon (perhaps from some emission of the caterpillar), and the colour changed to dirty gray. The larvæ, cocoons and moths all seemed to be finer in this country than in France, as if the soil and climate were more suitable; and all that was now required was machinery to wind the silk, which had not yet been done in this country, though it had in France and Italy. Dr. Wallace considered the experiment a great success, and thought the possibility of cultivating the silk-worm in this country was proved; ailanthiculture had one great advantage over the culture of the mulberry silk-worm, inasmuch as a crop of silk might be obtained from the Ailanthus tree in its third or fourth year, and in its tenth year it would be in full bearing, whereas it took from twenty to twenty-five years to establish a plantation of mulberry-trees. It might be roughly calculated that the trees might be planted at the rate of one to every square yard, and one tree would yield fifty cocoons; 1000 cocoons would produce 1 lb. of silk, which might be estimated to be worth £1 when spun: on the other hand, one boy could attend to an acre of silk-worms, and all the manipulation of the worms might be done by women and children of ten years old, so that the expenses would be trifling.

Mr. Scudder mentioned that in America use had been made of the larvæ of Bombyx Cynthia to make from the silken matter contained within them the fine lines by which fish-hooks were fastened. He also referred to the success of M. Trouvelot in cultivating the oak-feeding Bombyx Polyphemus (see Zool. 9620), of which he had brought over some cocoons for M. Guérin-Méneville. M. Trouvelot had found the birds to be his greatest enemies.

Mr. W. W. Saunders said the Ailanthus would grow almost anywhere, and seemed to prefer a stiff soil; he had it growing on clay, and it had flowered, fruited and seeded. With reference to Prof. Westwood's statement, at the previous Meeting, as to the comparative density and tenacity of Ailanthus, oak and elm, he remarked that the qualities which made wood useful as timber were strength, elasticity and durability, and that Ailanthus was a poor and insignificant wood, and, like all quick-growing woods, would be useless as timber.

The Rev. Hamlet Clark drew attention to a letter signed "S. G. O." in 'The Times' of the 30th of September, on the subject of the prevailing disease amongst cattle, in which the author suggested a connexion between the extraordinary atmospheric condition of the present season and the cholera, rinderpest, and other epidemics which were rife. The following is an extract:—

"Some particular atmospheric action, acting *per se* or in combination with existing matters, whatever they may be, is at work pestilentially affecting animal life. If we had the same opportunities for observation, and an equal interest in using them, I have no doubt that we should find there is disease in the insect world, probably in all living creatures, or at least in very many classes of them. * * * * It is reasonable to assume that any atmospheric condition which seriously affects one class of animal life shall more or less act on all such life. * * * * Able writers have propounded theories founded on the direct action of insect life as, under certain circumstances, likely to produce disease. * * * * It is quite true that the ova of certain insects may exist for years unhatched; that then, from some peculiar cause, they at once become living things, propagating with a rapidity almost beyond belief. * * * * I have long since arrived at the conclusion, that as the first bricks of the structure of all animals, all vegetation—the cells from which all alike commence—are, so far as Science has ascertained, not only similar in apparent structure, but can be affected in the same way by the same preparation,—that of cochineal used for microscopic investigation,—we have much of our life in common with all life around us. I do not believe there could be an ox-murrain, or pig or sheep disease, extensive sudden destruction of any one crop growing on a large scale, mortality or excessive vitality of any class of insect life, without some causes at work liable to produce disease in man and beast, herb, every creeping and flying thing, directly connected with life on our common soil. * * * * Corrupt animal or vegetable matters beget—I choose that term—vibrionic life, insect life, fungoid life; it is more than probable that this class of living products, or products ready to become alive, partake of the nature of that from which they are bred; it is, to me, quite possible they may require the same atmospheric action to give them active life that caused the death of the beast from which they proceed. * * * * I believe the principles which apply to men, with a certain subordination to the peculiar difference in some portions of the economy of life of animals, hold good. I am incredulous as to new diseases. When I am shown a man or beast of novel construction, I shall expect to hear of new complications in their organism—diseases of derangement of functions as new to us as the functions themselves. In cholera and in malignant typhus, we have morbid action and disorganization in excess—a destructive excess; in a less degree the animal economy shows the same morbid tendency under many other complaints."

Mr. Clark remarked that this theory, that the diseases affecting different classes of animal life were due to the same cause, namely, the atmospheric conditions to which those animals were exposed, seemed not improbable; and it would be interesting to know whether any unusual amount of death or disease, any absence of life, or rather any inferior vitality, in insects had been generally observed during the present season; the almost complete disappearance of wasps seemed to be a case in point.

Mr. J. J. Weir thought the year was remarkable for the abundance of insect life; and even as regarded wasps, he had, both at Tunbridge Wells and in Somersetshire, noticed a considerable (though not a large) number.

Dr. Alexander Wallace said that, as above mentioned, he had lost a number of his Ailanthus silk-worms by disease; it was during a period of three weeks in the wet month of August, when many of the larvæ were observed to delay their last change of skin, to become pale, then livid and sanious, and to fall to the ground; this was coincident with the prevalence of the potato disease. He had planted potatoes between the rows of Ailanthus trees and in some other interspaces, and when the disease first showed itself, the potato-stems were pulled up and laid in heaps: the caterpillars in the vicinity of the decomposing heaps died in greater numbers than those which fed at a greater distance; when fine weather returned the mortality among the worms ceased entirely. With respect to wasps, there had scarcely been a specimen visible at Colchester; plums and other fruit were rotting on the ground, and were consumed by earwigs, bees, &c., but not a single wasp.

The President remarked that swarms of black flies (an Aphis) were commonly regarded in France and Spain as precursors of cholera.

Prof. Westwood observed that, if wasps had been absent, all the common species of domestic flies had been unusually abundant, and so far from exhibiting any depressed vitality, had been excessively active and troublesome.

Papers read.

Mr. F. Walker communicated a paper entitled "Characters of a new Genus and Species of Chalcidites;" the insect in question was from Northern Australia, and bore a striking resemblance to some of the ant-tribe; it was described under the name of Myrmecopsis nigricans.

Mr. M'Lachlan read descriptions of some new British Trichoptera, supplementary to, and intended to be incorporated with, his Monograph of the British Caddis-flies.

Mr. M'Lachlan also read a paper entitled "Descriptions of new or little-known Genera and Species of Exotic Trichoptera; with Observations on certain Species described by Mr. F. Walker." The greater part of the species described were collected by Mr. A. R. Wallace in the Malayan Archipelago; others were from India, Australia and New Zealand. The new species were seventeen in number, the new genera nine.

New Part of 'Transactions.'

Trans. Ent. Soc., Third Series, Vol. ii. Part 5, being the fourth Part published during 1865, was on the table.—*J. W. D.*

Deilephila lineata near Biggleswade.—A fine specimen of Deilephila lineata (or D. Livornica) was caught here on the 10th of September, hovering over geranium and other garden plants.—*J. W. Whitaker; Henlow, Biggleswade, Bedfordshire, October* 17, 1865.

Note on Wasps.—Early in the spring I was much surprised by the number of female wasps that were flying about. On a south wall, among some trained pear, nectarine and apricot trees, I saw as many as seven at one time. From the number of females seen, we naturally supposed that the number of wasps in 1865 would be as great as in 1864, when they swarmed; but, contrary to expectation, I have never seen them so scarce in this neighbourhood. Last year, in our village alone, they destroyed and rendered marketless bushels of plums and apples.—*John Ranson; York.*

Life-Histories of British Insects. By Edward Newman.

Pyrameis Cardui (Painted Lady).

The egg is laid singly on Carduus arvensis (field thistle), generally towards the end of June, and generally also low down on the plant, and the young larva emerges therefrom in eight or nine days: it soon draws together the points of the thistle-leaves with a very slight web, more like that of a spider than the usual webs concealing Lepidoptera, and thus, very imperfectly concealed, it feeds with great voracity, and grows so rapidly as frequently to be full-fed in fourteen days, when it rests in a straight position, but falls from its food-plant, forming a compact ring if annoyed. As the larva increases in size it ascends towards the flower-head, leaving its prior domicile, so that half-a-dozen of these dwellings may sometimes be found on one plant, but two larvæ rarely, if ever: the needles or spines of the thistle-leaves, always rejected as food, are suspended in the web; the excrement of the larva is also found abundantly in the web, showing that, in a sanitary point of view, Pyrameis Cardui stands rather low. Head fully as wide as the 2nd segment, scabrous, the crown bilobed, each lobe emitting several warts and numerous bristles. Body with the segmental divisions clearly marked, and having a lateral skinfold not very strongly pronounced; 2nd segment with numerous short dorsal spines, each of which emits a terminal bristle; 3rd and 4th segments each with two longer lateral spines emitting lateral branches; 5th to 12th, both inclusive, have seven branched spines, one of them mediodorsal and slightly in advance of the rest, the third on each side is on the skinfold: below the skinfold and above each clasper is a conspicuous sesquialterous wart emitting curved bristles: the 13th segment has four spines placed in a quadrangle, the posterior pair larger and more conspicuous than the anterior pair; all parts of the body emit scattered hairs. Colour of the head dull black; dorsal surface of the body black, the spines paler with black tips and branches; the hairs white; the skinfold separating the dorsal and ventral surface yellow; ventral surface, legs and claspers pitchy red; spiracles above the skinfold pale in the middle; then surrounded with black, then again with paler. In many individuals the dorsal surface is irrorated with yellowish white dots, which are most conspicuously collected in a double series along the back, interrupted by a narrow mediodorsal stripe intensely black; in these examples the bulbous root of each spine is pitchy red. When full fed the larva spins a small but dense patch of silk on the surface of any object

within reach, and, suspending itself therefrom by means of its anal claspers, changes to a pupa, which has the head broadly truncate, but not eared; the dorsum of thorax produced into a median point, and having a point on each side in advance of the median point, and two more prominent points on each side on the margin of the wing-cases; the abdomen has three series of obtuse points, the mediodorsal series consisting of six points, the lateral series of eight points, the anal extremity produced into a slightly curved beak-like process, which is terminated with a fringe of minute hooks, by which it is suspended. The colour is ochreous-gray, striped with dingy brown, and adorned with gold reflections; the dorsal points are golden metallic-yellow; there is a hastate black mark between the tips of the wing-cases, apparently covering the extremity of the maxillæ; the cases of the antennæ have a double series of black dots; the anal beak has on each side a conspicuous black stripe, and various parts of the wing-cases and abdomen have distinct black dots. The pupa-state lasts about fourteen days, and the butterfly appears about the 4th of August: the sexes appear to take little notice of each other, but may frequently be seen frequenting gardens or settled on thistles, teazles, &c., by the road-side, until the end of October, when it retires to its winter-quarters, again to appear in April, May and June: copulation then takes place, and oviposition follows during eight or ten succeeding days. I am indebted to Mr. Huckett (1863) and Mr. Pristo (1865) for a supply of the larvæ of this beautiful species.

Odonestis potatoria (The Drinker).

The eggs are laid in July and August on Triticum repens and other grasses which abound in our hedge-rows; they are of an oblong form, depressed on the top, and having a median dot or spot surrounded by a black line; they are covered with an adhesive fluid, by which they instantly become attached to any object they may touch: in confinement six or eight of these eggs are deposited in close proximity, often in contact. The young larva emerges in August or September, and feeds on grasses, but makes but little progress in growth before winter: it seems to have a great love of rest, and throughout October I have frequently observed it on the extremity of a flowering culm of some grass from which the seed has fallen, and which it seems to have ascended for the sole purpose of enjoying the warmth of the sun's rays. It rests in a nearly straight position, with the head somewhat tucked in and the 3rd and 4th segments slightly elevated: when annoyed it rolls itself in a compact ring and falls from its food-plant

among the stems and blades of grass, and is then extremely difficult to find. Head slightly narrower than the body, the 2nd segment having a conspicuous and almost spherical tubercal on each side, the effect of which is greatly to increase the apparent breadth of this segment, making it appear much broader than the head; these tubercles emit long projecting hairs: the 3rd and 12th segments have each a mediodorsal erect compressed tuft of hairs, that on the 3rd segment is double and erect, that on the 12th single and inclining backwards. Colour of the head gray, with longitudinal black stripes, which approach on the crown but recede from each other on the face; 2nd and 3rd segments orange on the back, the double dorsal tuft on the 3rd having the anterior portion black, the posterior portion orange, the remaining segments with a mediodorsal series of blue-gray spots, each irrorated with minute black specks and alternating with pairs of black spots, the narrow interstice between each pair being bright orange: exterior to the mediodorsal blue series is a series of orange spots, and exterior to this a mixed series, blue-gray, black and orange, the arrangement of the colours in indistinct oblique lines; the spots below this are orange: ventral surface, including the claspers, orange, with a medio-ventral series of black markings: legs nearly black. After having hybernated at the roots of grasses during the whole of the inclement season, the larva may again be seen in the spring sunning itself on the culms, but remaining during the day in less exalted situations, prefering those ditches so often without water by the side of hedge-rows, yet abounding with dew-drops, to which these larvæ may often be observed to apply their mouth and imbibe the transparent fluid slowly, sedately and with evident enjoyment, a practice whence probably originate the names of "drinker" and "potatoria:" this propensity to indulge in drink may readily be tested in the breeding-cage by dropping water near the creature's head, when it will turn to the seductive beverage, and enjoy it exactly as when at liberty. The larva is full fed during the first and second weeks in June; it is then more than two inches and a half in length, and thick in proportion: when annoyed it rolls itself in a most compact ring and falls amongst the grass, where, however, it is scarcely likely to escape observation on account of its large size. Head not so wide as the 2nd segment, which is dilated on each side laterally by the presence of two tubercles, of which the upper is the more preminent, the lower broader and less conspicuous; body very convex above, rather flattened beneath; it has a mediodorsal tuft of long converging hairs on the 3rd and another on the 12th segment; the first of these is erect, the second obliquely directed backwards; on

each side of the back is a series of short erect dense fascicles of hair; in each series are twenty-four of these fascicles, that is, one on the 4th segment, two on the 5th, three each on the 6th, 7th, 8th, 9th, 10th and 11th, two on the 12th, and one much smaller on the 13th: besides these there is on the 9th, 10th and 11th segments a smaller fascicle of similar hairs very slightly inclined forwards; on each side on a line with the spiracles is another series of less conspicuous tufts; every part of the body emits in addition long silky hairs, which, however, are so slender, weak and scattered as not in any degree to conceal the tufts already described. Colour of the head dingy gray-brown, with curved black stripes, which approach on the crown, and recede in curves from each other on the face; these stripes are composed of exquisitely fine dots and lines: dorsal surface of the body purplish black, the anterior mediodorsal tuft brown, the posterior black, the dorsal series of short tufts black, the lateral series white; the long silky hairs over the whole body brown; outside each dorsal series of black tufts is a broad stripe-like series of minute polymorphous orange markings: the lateral surface of the body is intensely black, variegated with vivid orange and white markings, dispersed in oblique but irregular order: spiracles long, narrow and almost white; ventral surface black, adorned with two yellowish lateral markings at each junction of segments and two longitudinal stripe-like series of scattered markings: these commence at the 5th and are continued to the 12th segment; legs brown, with paler tarsi; ventral claspers black, with four longitudinal pale lines on each; anal claspers almost black, with one such pale line on each. Towards the middle of June it spins a tough leathery shuttle-shaped cocoon, composed of yellowish silk largely interspersed with its own hairs; this cocoon is attached longitudinally to the flowering stem of a grass, and is generally placed in some exposed situation: within this cocoon it changes to an oblong brown pupa, very blunt at both extremities, from which the moth makes its escape in July.

EDWARD NEWMAN.

Life-History of Phorodesma bajularia.—Eggs laid by captured female in pill-box, June 23rd, 1864, large in proportion to the size of the insect, oval, brownish, finely reticulated: hatched July 11th. Food, oak. Larva at first brownish, mottled, hairy; four bunches of green and white atoms along each subdorsal line, and a bunch on anal segment, the gnawings of oak. Until I had ascertained, by watching a young larva emerge from the egg, that it came out naked, I could scarcely believe that these ornaments were not part of itself, as every individual was so adorned, though apparently only just hatched. The one of whose birth I was an eye-witness was

immediately removed to a separate box, and supplied with the petal of a rose, from which, in a few minutes, it made up nine rosy "favours," and fastened them one by one, with perfect regularity, upon its back. I then restored the rosy-favoured to its green-and-white-favoured companions, and it very soon joined them in gnawing away at the oak-leaves, for nourishment now, having first satisfied the (shall I not say?) natural craving for dress. They fed on slowly till the cold weather began, when they fixed themselves to the under side of the oak-twigs, in a doubled-up posture, and looked like little round tufts of vegetable *débris*. I kept them through the winter in an arbour open to the air, and did not lose one. In April I put into their flower-pot some fresh twigs of oak, and split some of the buds. April 18th, they began to bore round holes in the buds that had *not* been split, and to clean out the inside, seeming quite to despise my rough endeavours to help them. When they were nearly full fed, I made the following description of one of them, having stripped off the tufts on one side for the purpose:—Body flattened, attenuated towards head, which is of the same colour as the body, reddish brown. Dorsal line and wavy subdorsal line fuscous, a row of dark fuscous spots underneath the spiracles. On each segment, from five to nine (both inclusive), is a pair of dark brown papillæ, one outside each subdorsal line, with a dark spot on the apex, furnished with a single hooked bristle (easily seen through a good glass), and also a pair on the twelfth segment, to which the gnawings are attached with silk. Being very curious to know how this was done, I put the half-undressed individual just described into a box covered with glass, together with an oak-bud, just bursting into leaf. After surveying his new abode, previous to eating, he firmly fixed himself by his claspers (anal pro-legs) to the bottom of the bud, took hold of one of the brown scales encasing the bud by the top with his jaws, and drew it with some force towards him, with the intention of pulling it off, if loose (as some which he afterwards tried were); but as it was still firmly fixed at its base, after two or three strong pulls, he began to gnaw it off at the base; having effected which, he took it between his legs, turned it invariably with the convex side towards him, which he overlaid with silk, and then, taking it in his jaws, turned back his head and fixed it by the convex side to one of the naked papillæ, not contented with hooking it on, but winding silk about it at the point of connection. After putting on two or three pieces, he refreshed himself by eating for a few minutes. The new piece was not always put on a vacant papilla, but sometimes fastened with silk to another piece on a papilla already covered. The larva, at this stage of its existence, used almost exclusively the brown scales of the buds, probably as being so easily detached, but did not seem to care whether they were long or short, rounded or pointed; consequently the *tout ensemble* had certainly a ragged and untidy appearance, compared with the neatly-cut and symmetrically-arranged habiliments of earlier life. The time, too, taken by the full-grown larva over dressing was much greater than that required by the active infant. Although it only had one side to dress, it took some hours about it. I began my experiment about 6 P.M., and the dressing was not over at 10; but next morning I found all the papillæ covered. Every time the larva changed its skin the dress of course was changed with it; and when, on May 25th, it changed to pupa (of the same colour as the larva) it was enclosed in a very loose network, formed of the bits that covered it as a larva, fastened together with silk, and attached to the under side of a twig. The first imago came out on June 20th.—*Rev. E. Horton* (*Powick, near Worcester, July*, 1865) *in the* '*Entomologist's Monthly Magazine*,' ii. 91.

[I am indebted to Mr. Horton for a supply of these most interesting larvæ, as well as for particulars of their economy, in order that I might write the life-history of the species: this was readily done, but a delay in publication was unavoidable. My friend has now relieved me of the duty, by publishing the preceding particulars from his abler pen: I am sure no one will regret a delay which has led to so gratifying and instructive a result. It is impossible to estimate too highly the advantages accruing from the labours of Mr. Hellins, Mr. Buckler and Mr. Horton in this branch of our Science, and I can scarcely find words to express my high appreciation of their services. How long was I alone in the task of thus working out these life-histories—a task which, single-handed, would never have been accomplished by me.—*Edward Newman.*]

Life-Histories of Sawflies. Translated from the Dutch of M. Snellen van Vollenhoven, by J. W. May, Esq.

(Continued from page 9754).

Selandria pusilla, *Klug.*

For the imago:—*Dr. F. Klug, Die Blattwespen nach ihren Gattungen und Arten in Schriften der naturforsch: Freunde zu Berlin. Tenthr.* Fam. II. A. Nos. 50 & 62. *Hartig, Blatt- und Holzwespen,* p. 267, No. 2.

Larva undescribed.

Selandria nigra, nitida, alis infuscatis, cellula lanceolata pedunculata, nulla cellula media in alis posterioribus, genubus, tibiis, tarsisque dilute brunneo-flavis.

This insect is much less known than the preceding. I do not find it mentioned by any other authors than Klug and Hartig, while the larva is entirely undescribed.

It is, probably, a very local insect, being only here and there met with in any numbers; its small size may also have had some share in withholding entomologists from a more general acquaintance with it. However, if it is as common in other places as it was in my garden at Leyden, its small size would certainly not have protected it from observation, the singularity of its habits being sure to betray it. Every year, in the month of May, the rose-bushes in the garden are beset with little shining black sawflies. In the sunshine in the middle of the day the males are particularly lively, the females somewhat less active. In the evening the males are no longer to be seen, and the females are resting without motion among the yet unfolded leaves.

Some days after these little creatures were first seen the females were observed to be laying their eggs. They make a longitudinal opening with the saw in a young leaf close to the margin, and then deposit the egg between the two surfaces of the leaf; the wound thus made is almost invisible, the egg quite so, the only indication of the place being a slight swelling. I was not able to extract an egg from the leaf, but from the abdomen of a female, which I cut open, I obtained an egg-mass containing nine elliptical eggs, opaque-white, and without markings.

In a short time the leaves are seen to curl up underneath from the margin inwards, so that at last the whole leaf looks like a midrib with a curl at each side; fig. 7 represents a twig with leaves in this state, seen from below, at *a* is a female half concealed by the border of the leaf. It seems to me to be probable that after depositing the egg the female proceeds to make little incisions in the under side of the leaf, beginning at the margin, by which means the growth in the epidermis of that part of the leaf is retarded; but as the growth of the uninjured upper surface continues in the regular way, the margin extending itself only on that surface must necessarily be bent round underneath, and thus the leaf becomes rolled up.

I have met with females of this species on the under sides of leaves until late in the month of May.

On the last of that month I carefully examined one of the curled-up leaves, and found therein a very small caterpillar, not more than three millimetres long (fig. 1). This little creature was yellowish white, nearly transparent, with a trace of green. The globular head was somewhat grayish, the eyes being black, the trophi ferruginous; with a strong glass some hairs could be seen on the body. I over and over again counted twenty-two legs; this appeared to me remarkable, as Selandria æthiops, belonging to the same division of the genus, has only twenty legs in the larva. The terminal legs were not applied to the surface, as shewn in fig. 1.

On the 8th of June I again examined some leaves, and found larvæ of more than twice the above-mentioned size, namely, 8 millimetres (may we from this draw the conclusion that these larvæ grow remarkably fast?). The latter larvæ were rather more strongly coloured, the anterior part of the body being brownish yellow, the posterior greenish (fig. 2). On examination with a lens, it was seen that each segment of the body was divided into five folds, of which the first two bore six little knobs, on each of which were two little stiff hairs, the last two folds were smooth (fig. 5). The head was now distinctly greenish

brown as far as the little antennæ, the remainder yellowish white; the margin of the clypeus and the lower part of the frontal suture were also of this colour. The head was rough anteriorly, and, for so far as the brown colouring extended, thinly covered with pale brown hairs. The eyes were seated in round black spots; the upper jaws were yellow at the base, pale brown further on.

A short time after this I found no more larvæ on the rose-leaves, nor could I perceive any pupæ: I thus came to the conclusion that the larvæ had descended from the leaves and gone into the earth, for the purpose of passing through the pupa state in that situation. I had placed in a glass some rose-twigs having curled-up leaves; at the bottom of the glass I had put a layer of earth, and in this I found some cocoons: they were very strongly made, being spun inside, and consisting of grains of sand on the exterior; I have figured one at fig. 5. I subsequently, however, failed to find any imagos in the glass in question, getting nothing but parasites.

It will now be objected that this life-history is incomplete, and I am ready to acknowledge that much is wanting. I have no certain proof that the larva above described is the larva of this insect: there is always the possibility that the larva of Selandria pusilla is totally different in habits and appearance: true, but I have found the probability of identity so great that I cannot but regard it as almost amounting in value to direct proof. Not a single one, but a hundred and more imagos of the same species make incisions in the rose-leaves, which, in consequence, curl up; in the curled-up portion are found not one, but more than a hundred larvæ, all resembling each other; must we not conclude that the larvæ so produced are the brood of the imagos in question?

The imago (fig. 6) is shining black. Head broad, with very dark brown eyes; antennæ black, but little longer than head and thorax together; palpi obscure yellow. The back and sides of the thorax are smooth shining black, as is also the abdomen, the ventral surface only having some silky pubescence. The wings are blackish, as if smoked, the posterior pair being somewhat paler. The costal nervure and the stigma are broad and black; the course of the nervures, as is sometimes the case with the smaller species of Selandria, is rather inconstant. All the coxæ are black; the anterior femora black half-way, obscure yellow further on (fig. 8); the intermediate femora are two-thirds black, and obscure yellow for the remaining third; those of the posterior pair are black, having the knees obscure yellow. The remaining parts of the legs of the first and second pairs are obscure yellow;

those of the posterior pair being more blackish, especially at the tarsi. The length of the insect hardly reaches 5 millimetres.

Fig. 9 represents the very simple saw and ovipositor.

On being touched these insects do not generally fly away, but draw in the antennæ and legs against the ventral surface, and, rolling along the leaf, allow themselves to drop to the ground, where they remain still for a few moments, until they think the danger has passed.

The parasite, which I obtained from the cocoon, was an undescribed species of Ichneumon, belonging to Gravenhorst's first section, having the scutellum and abdomen entirely black.

Cladius uncinatus, *Klug.*

Imago:—*Hartig, Blatt-und Holzwespen*, p. 176, No. 3.

Cladius ater subnitidus, pedibus rufo-flavis, exceptis coxis, apophysis omnibus, nec non parte antica femorum anteriorum, quæ nigra sunt, articulis tarsorum ultimis et alis nigricantibus.

As long ago as 1844 I published a description of the larva of this species in the 'Tijdschrift voor natuurlijke geschiedenis en physiologie' (vol. xi. part 2). Since that time I have nearly every year met with the insect in the month of September, and observed some varieties of the larva; but I have not as yet been able to find the larva in its earliest stage, all those which I have seen being full grown. I imagine the young larvæ live at the tops of old elm-trees, and that only at a late period of their lives do they descend the stems: if this be so it is only by some chance that we can become acquainted with the earliest stage of the larva.

The full-grown larvæ are to be met with in the month of September on the stems of the elm, where they spin up in the crevices of the bark. They are also frequently to be met with on stone posts standing among elm-trees: thus I find them every year in some numbers on the stone posts along the sides of the road between Leyden and Leijderdorp. Plate 4, fig. 1, represents a larva, magnified. They are yellowish clear green; 1.5 centimetre long, and rather broad in proportion to their length. Head very pale green, with a brown or black square spot on the vertex; this spot is divided into two equal parts by a fine pale green line. The eyes are black, and placed in round black or brownish spots; on the clypeus is generally found a small blackish irregular mark; the trophi are brown, varying in tint; the upper surface of the head is thinly hirsute (fig. 3). The whole body is flatter and broader than is generally the case with sawfly larvæ. Along the

back is a dark line caused by the dorsal vessel being seen through the skin. Along the sides of the body on each segment are two projecting elevations, of which the anterior is the larger; both have a few long white hairs (fig. 2). There are altogether twenty legs, the anterior being glassy green, and, as shown in fig. 4, consisting of five joints. The first joint is round and thick and proceeds in a vertical direction, the rest are more or less horizontal; on the under side of the second are four setæ; the third has a thick fleshy knob in the same situation; the fourth is cylindrical; the fifth consists of a little knob having a pretty large horny claw of a brown colour. On the superior surface of the leg are five setæ. The abdomen is furnished with six pairs of green membraneous legs, and there are two anal legs on the last segment. Above the anus is often, but not invariably, found a brown spot. The varieties of the larva are of a reddish or grayish colour, with darker heads.

As before stated, they spin up in cracks or crevices of the stem: the cocoons are double, the outer case being of a loose texture, greenish or yellow, and having something of the appearance of dried sputa, the interior one being thicker and of a pale reddish colour (figs. 5 and 5 *a*). The larvæ remain concealed in these habitations through the whole winter, and, disengaging themselves of the thin outer skin, change in spring into little shining glassy pupæ, from which the imagos appear in the beginning of May, or sometimes as early as April, and may be seen, during sunshine, flying about the stems of the elm-trees. From this we may conclude the larva in question feeds on the leaves of the elm: I do not know whether there is more than one brood in the year.

Both sexes of the imago are black; the thorax sparsely covered with short gray hairs; palpi pale red; legs reddish, having, however, all the coxæ, the apophyses, and the bases of the four anterior femora black; the last two joints of the tarsi are blackish. In the male the wings are also blackish, paler in the female, with the costa and stigma gray. The length of the male is 6 millimetres, and of the female 7 millimetres. A further distinction between the sexes is found in the structure of the antennæ, those of the female being simply setaceous and barely perceptibly hirsute (fig. 7); in the male the third joint is prolonged underneath into a hairy protuberance, and the succeeding joints are furnished on the lower and inner sides with black projecting hairs.

The ovipositor (fig. 10) in this species is short and compressed, thick, and curved like a pruning-knife; the saw (fig. 9) is a little

shorter, and composed of flattened segments, which are notched at the sides, where they move one over the other, and have each, on the under side, a little knob and a tooth.

The eggs, which I took from the abdomen of the female, were deep yellow, long and reniform.

It seems to me that this species is more especially peculiar to this country, as I find it mentioned in Hartig's work only, and he states that he had seen but two examples. It is, however, very possible that it is abundant in England, and is one of the species named, but not described, by Stephens (see Curtis, Brit. Ent. No. 457).

Campoplex argentatus, *Grav.*, has appeared with me as a parasite on this insect.

Note on Earwigs.—I have never known these pests of the garden more numerous or more destructive than they have been this season; nothing seems to have come amiss to them. Apricots, a plentiful crop, have been especially favoured by their attentions. A small hole was generally drilled from the top of the fruit down to the stone, and down this small hole, just large enough to admit of their passage, the happy pair passed into the interior of the fruit to revel in plenty. Unless carefully examined it is impossible to detect the injury until the apricot begins to rot, which it does rapidly after the insects have eaten the pulp round the stone. Behind some of the fruit a complete colony could be found, being, I suppose, the parents and their brood. I found behind a nectarine a colony consisting of twenty. The cast-off skins of the young were often found in the apricots. Double hollyhock-flowers are favourite resorts of the earwigs, amongst the petals of which they lie hid, and I have little doubt that they prey upon Hymenopterous insects that come to seek food in the flowers, for I have frequently found such insects stuck in the flowers, minus the head, and I never found them so stuck but I found two or more earwigs in the same flower. I have paid great attention to earwigs for the last four years, and I believe them to be very loving and attentive to their young, who follow their parents about as chickens follow a hen, and they keep together, unless forcibly broken up, from their birth until the next spring.—*John Ranson; York.*

The Greater Horse-shoe Bat (Rhinolophus ferrum-equinum) *in Dorsetshire.*—Our knowledge of the distribution of the British Cheiroptera is so imperfect that it seems worth while to record any new station where the several species are observed. While on a visit to a relative at Tomson Manor House, in Dorsetshire, at the end of September, I found a large bat flying round my bed-room one night when I went to bed. The room, a fine Elizabethan chamber, was sufficiently large to observe its character of flight. From the size of the bat I at first thought it a Noctule, which I have repeatedly shot on Tomson Manor; but its flight was feeble and slow in comparison with that of the latter bat. Without much difficulty the bat was secured: it proved to be a large male "greater horse-shoe." The measurements exceeded those

given by Bell, as the span from tip to tip of the wings was 14⅓ inches. The fur was of a slaty-gray, darker above than beneath, and altogether destitute of the reddish colour described in books. I could discover no trace of the inguinal mammæ said to exist in this species. The individual being a male, they would of course be very diminutive; but I could find no indication of their presence. On a subsequent evening I saw several bats of about the same size flying round the house: they were probably the same species; they flew comparatively slowly, feebly and in short courses, and about fifteen feet from the ground. Tomson House is an old Tudor structure, which, with its many out-buildings, is admirably adapted for bat haunts; indeed, I know few places where bats are so numerous.—*James Salter; 1, Plowdon Buildings, Temple.*

Notes on the Nesting of Birds in the Flat-lands of Essex.

By Vincent Legge, Lieut. R.A.

Redstart. — This bird is very plentiful about here, frequenting particularly those parts where the pollard-willows most abound. Fond as they are of nesting in old stumps and trees, they have a special predilection for the pollards, which, full of holes and cavities, afford a capital situation for breeding. I never saw them so plentiful in any part of England, and most probably it is on account of the numbers of these trees, which line the ditches in the marshy districts, that they are so common here. They prefer a cavity with a good sized entrance, and place their nest in the back of it: these vary very much in construction, according to the nature of the hole, some having a great deal of foundation and body, others being very slightly made, with not much more material than one finds in the nest of an oxeye: it is of shallow form, and in most instances rather loosely put together. The body and foundation are made of dried grass, small fibres and roots, and the interior of wool, lined with horse-hair; a few feathers were intermixed with the hair in one or two nests. The prevailing number of eggs in a great number I found was five; in some there were six, and in others four: they are 8½ lines long by six broad; and, though generally of a delicate green, some are nearly of as dark a colour as those of the hedgesparrow; they were laid this year, for the most part, by the last week in April.

Pied and Yellow Wagtails.—Great numbers of both these wagtails frequent the low cultivated and marsh-lands of this coast. They may be seen darting about, and following the course of, the ditches in search of insects, or hovering over them in the vicinity of their nests. They both, especially the yellow wagtail, nest in the sod-banks of the water-courses, and on the approach of an intruder, circle round his

head, uttering their note incessantly, endeavouring to their utmost to draw his attention away. The nest of the latter is consequently rather difficult to find. The nest of a pied wagtail, containing six eggs, was found near here, situated in an indention in the trunk of an ivy-clad tree, at a height of ten feet from the ground; and the nest was made of the same materials employed in its construction when built in a hole in a wall or in the ground. One egg is $9\frac{1}{2}$ lines long by 7 lines broad.

Wheatear.—This handsome bird is very plentiful, frequenting the flat wastes and uncultivated lands. They build here in the holes between dry sods or in deserted rabbit-burrows. The young birds of the year are very plentiful on the marshes in August, and may be seen in all directions, perched on some stone or clod, bowing and cocking their tails in their quaint manner. They leave about the second week in September. I found one nest, at some height from the ground, placed in a hole between the frame-work of a door-way and the sods of an earth-work; on approaching the hole the young would leave the nest and hide themselves in the interstices of the sods. The eggs, which are five and six in number, do not vary much in size; they are 9 lines long by 7 broad, and are laid about the middle of May.

Sedge Warbler.—This is one of the commonest of our warblers here, frequenting the reedy ditches of the low-lands, and situations where there are bushes, brambles and sedge, in the vicinity of water. They resort particularly to dykes which are lined with the wild sloe, which grows in great abundance in Canvey Island and other flat lands in the vicinity. They build in the sloe, in preference to any other bush. In its curious little warble it imitates, in quick succession, the sparrow, the lark and the swallow, but seems to have a decided preference to the twitter of the first-named bird: at the first and second week in May they begin to build, and though the nest is generally close to the water, I have found it at a distance of forty or fifty yards from the edge, where there have been willows or other suitable herbage. Out of about two dozen nests, found in the course of a few days, seven of them were built in almost exactly the same manner and position as those of the reed warbler (*Sylvia arundinacea*). I noticed this material difference, however, in the position chosen by the two species in question, *viz.*, that, whereas the reed warbler invariably builds in the reeds some distance from the edge of the water, the sedge warbler resorts to those at the side, where there is always an abundance of dead grass to afford a little cover. Those formed in this position were among the dead reeds and tangled grass which line

the banks of the dykes in the spring. There was generally a little tuft of this material overhanging the nest, so as to screen it from sight, and sometimes a little underneath to form a foundation, but the outer edge of the nest was wound round the reeds, exactly in the same manner as that of S. arundinacea: these nests were built of dry grass, put together in rather a frail manner, and were quite different from those built in young willows or low bushes, which generally contained a good deal of moss, were much shallower and far more bulky. I mention these few facts because the difference in construction was remarkable, and because some people assert that S. salicaria does not build in reeds. The prevailing number of eggs is five, and these vary much in size, some I have $8\frac{3}{4}$ lines long by $6\frac{1}{2}$ lines broad, while others are $7\frac{3}{4}$ lines by 6 lines. Though they vary a little in colour they all have the little dark streak at the larger end. A nest found near here was accidentally cut down by a boy who was thinning an osier-bed; he placed it in a young willow, some distance off, and the next day I found the old bird sitting as closely as if the nest had never been disturbed.

Reed Warbler.—Great numbers of this lively little bird frequent the reeds, which grow in great profusion in the dykes intersecting the marshes in the vicinity of this coast. They are very plentiful in Canvey Island, and thread their way among the reed-beds, hopping from one stalk to another with great rapidity. About the 15th of May they begin to build. It would not perhaps be superfluous to say a few words about the beautifully constructed nest of this clever little architect: it is suspended in the reeds, fixed generally to two or three of them, at a height of eighteen inches or two feet from the water, and, as far as my experience goes, is always placed over the centre of the ditch—that is, three or four feet from the edge. I have found half-a-dozen in a space of a few hundred yards, and I observed that this rule was never departed from. The structure is very deep for its width, the interior measuring $2\frac{1}{2}$ inches deep by $1\frac{1}{2}$ inch in breadth; this precaution being taken to prevent the eggs rolling out when the reeds are swayed to and fro by the wind. The materials used are fine dead grasses, mixed with a little wool, which is used mostly to finish off the top of the nest, the whole being woven together very compactly. The bottom of the nest extends downwards to a considerable depth, giving the whole an oblong form. A few of the outer blades of grass in the structure are twined round three or four reeds in such a manner that, though these form ample support for the nest, they fall out when gently pulled after it is cut down. One nest was found in a flowering thorn, fixed by two thick arms of grass beautifully wound round two

small branches which hung over the water, about eighteen inches from its surface. This was a much more solidly built nest than any other I found. It is almost impossible to find the parent bird sitting on the nest, for on the approach of any intruder they spring, something after the manner of a mouse, from it, hop from reed to reed till they arrive at some distance, and then break forth into a little warble. The eggs vary sometimes from the usual greenish white to a brownish white ground, and some have not the black irregular spots which are generally to be found at the larger end: they are from three to four in number; in a few instances, five.

Sky Lark.—The stubble-lands and low-lying fields literally swarm with larks at this season of the year, and they are just as plentiful at spring time. They resort very much to the "saltings" (land covered with rank herbage lying between the embankments and the shore, and covered at spring tides), roosting there at nights. They may also constantly be seen at some distance from the shore, picking up sand-worms on the fore-shore after the tide has left it. I have never seen Alauda arvensis resort so much to the sea-coast as it does here. They build here, as at all other places, late in the season, and though their nests are so numerous they are yet somewhat difficult to find. On frightening the female from her nest, she flies along the ground for some distance before she mounts into the air. One morning I started a lark from beneath a coltsfoot-leaf, and on examining the spot found an egg deposited in a hole scratched in the earth, the nest not having been begun; a few days afterwards it was finished, and contained three or four eggs. Some eggs are of a very light ground-colour, lightly and sparingly spotted, after the manner of a sparrow's egg, while others are as dark as those of the titlark, with sometimes a faint streak at the larger end.

Titlark.—Very plentiful, particularly near the shore, although they are as much at home on the mountain-top as they are in the meadow. They nest here in the grassy banks or on the side of any eminence, if it be covered with thick herbage. They build the first week in May, and lay from three to five eggs.

Reed Bunting.—Common in the marshes, and builds in the banks of the dykes, as also on the ground in wet places; the nest is placed under a tuft of grass: when in the latter-named situation the foundation is very thick and compactly put together to keep out the moisture: a good deal of hair is used in the lining.

Linnet.—Next to the lark, there is hardly any bird so common on this coast: they frequent the sandy ground near the shore, feeding on

the seeds of the rank herbage which grows on the "saltings." They nest here in great numbers, and build sometimes within half-a-dozen yards of the shore, in the brambles growing on the sea-walls. Their nests may occasionally be found at a considerable height from the ground.

VINCENT LEGGE.

South Shoebury, October 25, 1865.

Ornithological Notes from the Isle of Wight.

By Capt. HENRY HADFIELD.

(Continued from page 9726).

AUGUST, 1865.

Swift.—August 4. A pair of swifts seen about the lofty spire of our new church, but whether nesting there I have not ascertained: I never knew them breed in this neighbourhood.

Martin.—August 5. The young must have flown either yesterday or to-day, as three heads were seen peering out on the 3rd. Though twenty pages are devoted by Macgillivray to the description of this species, he says nothing of the number of days taken in laying and incubating, but tells us that the construction of the nest occupies from six to ten days; however, that must be under peculiarly favourable circumstances, my observations leading me to believe that about double that time is spent. On this occasion the nests, though half-finished when first observed on the 7th of June, were not completed till the 14th, if then, for I was doubtful of their being lined.

Gray Flycatcher.—August 5. Observed a number of these flycatchers collected in a sheltered nook on the northern side of the down, chiefly on the lower limbs of the ash.

Tree Sparrow.—August 5. Observing several sparrows nests among the matted branches of some lofty old fir-trees near Wroxall Farm, I watched the birds, and feel pretty confident that a handsome old cock bird seen was a tree sparrow, a species that I have never met with in the under-cliff.

Nightingale.—In my July notes (Zool. 9725), an instance of the longevity of a caged nightingale was recorded; but I purposely omitted to state that it had learned to talk, as too wonderful for general belief, though I had faith in it, my informant being a highly respectable and trustworthy person, a resident in the place, and one who could have no object in deceiving me. I am now emboldened to

speak out, seeing that Buffon (vol. ix. p. 135), thus refers to a talking nightingale, "Enfin ils apprendront à parler quelle langue on voudra," &c. My neighbour's bird knew and welcomed its owner, and had learned, from a parrot, to say "Pretty Polly," "Kiss me, Polly," and other endearing expressions. I also find my remarks on the perching of the American snipe indirectly confirmed by Buffon, who says (vol. viii. p. 281), "La plupart des oiseaux qui ne se perchent point en Europe, et qui demeurent toujours à terre, * * * se perchent en Amérique, et même les oiseaux d'eau a pieds palmés que nous n'avons jamais vu dans nos climats se percher sur les arbres, s'y posent communément."

Kestrel.—August 7. Four of these hawks observed together on our downs, seemingly all of one family.

Chiffchaff.—August 8. A chiffchaff or two seen. None before observed since April.

Goldfinch.—August 8. Saw a flock of goldfinches: they were mostly young birds, yellow on the wings, but with no red visible on the head.

Yellow Wagtail.—August 21. Both to-day and on the 18th some fifteen or twenty young wagtails were observed in a pasture-field, following the horses; though I could not venture to shoot any I have no doubt of their being birds of this species: their small size and the yellowish gray colour of the sides and under parts prove them to be so. A pied and a gray-backed bird or two having alighted among them enabled me to judge of their relative size, and they were quite dwarfed by it, proving, too, that they could not be the young of the gray wagtail, which is not only larger but differs in plumage, and is a species not generally met with at this season in the island. The flight of the yellow wagtail is more undulating and graceful than that of the pied and white species. Though there were several cows in an adjoining meadow the yellow wagtails never left the horses, but followed them closely; now squatting among the grass, then running to and fro beneath the horses, taking the flies from between their legs and from off their noses, and darting after those disturbed by the trampling of the animals, which are seemingly aware of the service rendered them, for they never, by switch of the tail or toss of the head, drive away the wagtails, but allow them to crowd about their noses and legs, so that they appear in danger of being injured or trampled under foot. One of the gray-backed birds first alighted on a tree, then in a hedge.

White Wagtail.—Though I might have shot the adult light-coloured birds when nesting, there is now a difficulty in procuring specimens, there being so many young gray-backed wagtails; but one shot on the 3rd of August differs from the rest, and the bill is shorter, proportionally, slighter and straighter, though the first distinction is not always to be relied on, "birds bills, like men's noses, varying in length," as I once was facetiously told by a northerner. The tail-feathers are remarkably narrow, and the third has no white margin, as in the pied species. Both primary and secondary quills are externally margined with white, the inner ones broadly. The measurements are not given, the bird not being full grown. This may or may not be the young of the white wagtail, but I feel confident that the adults observed in June were not of the pied species, unless they breed in the immature gray plumage. We are not always happy in our nomenclature, and the wagtails are perhaps the most absurdly named of all; for instance, "dish-washer," "oat-seed bird," &c.; and then the gray-backed bird is called the *white* wagtail, and a yellow wagtail the *gray*, but why I never knew, till seeing it explained by Buffon as a "dénomination peu exacte, et qui vient originairement de Willughby, qui reconnoit lui-même n'avoir décrit que la femelle."

Willow Wren.—August 22. The yellow wren, though but lately returned, is to-day swarming in our gardens, so that the trees seem alive with them: they are, I believe, mostly birds of the season, being duller in plumage and shorter in the tail than the adult. This species usually congregates here before the autumnal migration, but its stay in the under-cliff, on its arrival in the spring, is of short duration.

Robin.—August 25. Robins are beginning to return to the gardens in and around the town.

Brown Buzzard.—August 30. When strolling in my garden this morning I was astonished at seeing two large rapacious birds, at a great height, in the distance, and whose soaring and wheeling flight reminded me of the kite and the roughlegged buzzard, both species well known to me, but on their nearer approach, though still at a considerable altitude, I found, on examining them through a glass, that they were neither kites nor roughlegged buzzards, but brown buzzards. The larger bird (or female) was of a dark brown, both above and beneath; the smaller one of a light brown on the back, whitish beneath the body and wings, the latter appearing barred and mottled, but the central part white. So much do they differ, both in colour and size, that they might readily be taken, in the distance, for birds of different species.

Green Woodpecker.—I find (Zool. 9720) that Mr. Newman is still sceptical as to the woodpecker having been seen in the island, though I can have no doubt of it, after the circumstantial statements I received at the time as to size, colour, manner, &c., but I will endeavour to get further information. Nor do I see why its crossing the sea should be thought so improbable, considering that the Solent, at its narrowest part, is less than two miles across, a distance some of us islanders could readily swim.

SEPTEMBER.

Swallow.—September 2. At 6 P.M. saw a flock of swallows at Luccombe; they were mostly young and immature birds, only two or three being observed with forked tails. They were taking their evening's repast from off the flies collected about a clump of trees at the top of the Chine, in which they were doubtless about to roost, as their habit is at this season. It is worthy of remark that this assembling of young swallows has taken place at the same period, within three or four days, as last season. 17th. On going into the garden at 8.30. A.M. found innumerable swallows in rapid flight to the eastward, against a head wind, accompanied by comparatively few martins, though the young short-tailed swallows might, by the casual observer, be readily taken for them; their flight, too, being less rapid and buoyant than that of the adult, and not unlike the wavering course of the martin. So hurried was the flight that little time was allowed for hawking; but, strangely enough, a feather floating in mid-air was caught up, in mere sport I think, by three or four birds in succession, and no sooner released by one than it was snapped up by another. This migratory stream was but two or three hundred yards in width, and following the coast-line. The flight of the swallows is so low, that in passing over the ridges of the broken and undulating surface they would skim the ground. Together with swallows and martins occasional flocks of small birds would appear, though quickly distanced by them; but the flight of some was very rapid, perhaps none more so than that of the willow wren. The white wagtail was of the number; the wheatear, too, I believe, and other birds; but it was difficult to identify any, on account of the confused and rapid flight under a bright sunshine. Towards 11 o'clock I noticed, near Bonchurch, a number of swallows alighting on the elms, the upper leafless boughs being preferred: they were mostly birds of the season, and apparently fatigued, having probably been on the wing from an early hour. That it is not cold that causes the general move, or migration, I have only to state

that the thermometer this morning at 8 o'clock was 68°, and at mid-day 74°. That this gathering is preparatory to their migration there can be no reasonable doubt; but they may linger for a while on the southern coast, should the weather prove favourable. 18th, 9 A. M. Swallows and martins are again passing, but in greatly diminished numbers, the former exceeding the latter in the proportion of about ten to one: the flight of the martin is less rapid and direct, and that of the young somewhat laboured. 21st. Only a few swallows seen, but a large flock of martins passed over the town this morning in an easterly direction, flying very high, and hawking by the way, seemingly enjoying the slight shower. The thermometer was 66° yesterday at 9 A. M.; this morning but 55°, and it would appear that this sudden change of temperature was anticipated. Though yesterday was one of the finest and hottest days of this the hottest of seasons, I observed towards sunset a small white misty cloud gathering on our downs, leading me to expect a change; but the instinct of birds is something wonderful and incomprehensible. 23rd. Some swallows and a few martins seen this morning in rapid flight to the eastward; wind still easterly: thermometer, at 9 A. M, 58°. 25th. Some swallows and martins have passed to the eastward to-day, and several of the former were seen yesterday, resting for a time on the leafless branches of the trees. 30th. A few swallows and martins continue flying to the eastward. Although it may be thought somewhat strange and inconsistent in one who has so often recorded the presence of swallows and martins in the island in November, and even December, I must nevertheless say, after an experience of many years, that I have come to the conclusion that the first migration of both species takes place in September, which I will endeavour to prove by extracts from some of my journals. But it may be questioned whether these flights are really migrating. I would answer this by other questions,—What becomes of these flocks? where do they—where can they—halt? If anywhere, it must be on the coast of Sussex; so possibly your correspondent, Mr. Jeffery, who is in the line of flight, may enlighten us. Besides, if not migrating, how comes it that these autumnal flights are invariably to the eastward? *Notes.*—"1852, September 10th. There are to-day some hundreds of swallows congregated in our garden. 24th. Remarked that hundreds of swallows had collected on the roofs of the houses on the edge of the cliffs, where I have observed them annually assemble." A few days later numbers were seen near Gosport, crowding the telegraph-wires. "1853, September 17th (the same date as this year). Observed that hundreds of swallows had

assembled on the houses near the cliffs, not only the roofs of which were covered, but the chimneys too, and scaffolding." "1855, September 10th. Saw innumerable swallows and martins; and at about ten o'clock a great number of swallows assembled on the roofs and chimneys of the houses on the cliffs (their usual resort)." "1863, September 6th. Swallows commenced congregating on our coast." "1864. A considerable flock of swallows had appeared here by the 29th of August." In remarking (Zool. 9434), "Swallows and martins remained in the under-cliff fully a month later than in the neighbourhood of York," I did not mean that the first migration is so much later; for, with regard to that, there is seemingly little difference, as your York correspondent, writing on the 1st October, says (Zool. 9328), "I have not seen one for above a week;" this date corresponding with that of the first migratory move along the southern coast.

Martin.—September 4. Though the first brood of martins did not leave the nest till the 4th or 5th of August, I find that the old birds are rearing another progeny, having watched them to-day feeding their young, which can be but lately hatched, as they have to creep into the nest to feed them. There is another nest of young martins under the same eaves, and a third on a neighbouring house. Macgillivray says that two broods are "sometimes raised;" but here is an instance of three pairs rearing two broods each, though the first did not fly till the first week in August—a pretty good proof that two broods are generally reared in the south. A contributor to Macgillivray's work (p. 589, vol. iii.), says, "The second brood is generally abroad by the middle of June;" but this I believe is rather the exception than the rule, even in the south of England. However, this species was unusually late in breeding this season, and the three pairs under observation had nests to build as well as furnish. 27th. The last of the young martins has taken wing: I was prepared for this, having yesterday afternoon observed the old birds endeavouring to entice them out by flying round and about the nest; occasionally making a feint, as if about to feed them, and after soaring at the opening suddenly disappearing. One is not surprised at the young hesitating to take the plunge, their powers of flight yet untried. I find to-day both the old and young birds flying about the neighbourhood, and one of the latter entered the nest. The young were easily distinguished by their smaller size, greater whiteness and peculiar flight, not darting and wheeling about like the adults, but soaring in narrow circles around the building. 28th. Neither the young nor the old birds have been seen about the nest to-day. 30th. Though I have been

daily on the watch, neither the young birds nor the old have been again seen near the nest, nor do they resort to it to roost.

Nightjar.—September 9. One seen on the sea-cliffs near Luccombe, about 7 P. M.

Bluethroated Warbler.—September 18. Observed, at 6 P. M., near Bonchurch, the bluethroated warbler taking a bath in the road-side brook; it stood knee-deep in the stream, where it continued to dip and splash about the water till disturbed by the passing carriages, but always returning to renew its ablutions, though constantly interrupted by foot-passengers, too, not one of whom as much as noticed it. A robin having alighted by the stream, a fight ensued, when the latter was speedily discomfited and driven away. After its bath, perched on a birch overhanging the brook, it was for some time engaged in preening its feathers. It was found to-day within twenty yards of the spot where originally seen, and from what I hear it seldom wanders far from the pond: that it is the same bird there can be no doubt. Though its song was occasionally heard, it was not so prolonged as in the spring. In a former note I remarked its comparatively small size, and still think it fully a third less than the redbreast, and a much more active and restless bird. The tail, which has been renewed, is now perfect. It is much to be regretted that it has no partner; but as to its pairing with the common robin, that seems hopeless, as they are for ever fighting. Could a female be found I should have little doubt as to their breeding or becoming naturalized.

Brown Linnet.—September 23. About sunset a flock of some hundreds of linnets rose from a withy-bed, where I have lately observed them alight to roost; but to-day the flocks had united, and when disturbed continued their aërial manœuvres till they succeeded in regaining the cover. This early flocking together is somewhat remarkable. A wheatear seen on the cliffs.

Yellow Wagtail.—September 25. A small migratory party of these elegant birds was seen flying to the eastward. Several had previously been observed taking the same course.

HENRY HADFIELD.

Ventnor, Isle of Wight, September 30, 1865.

The Lesser Kestrel at Cambridge.—I learn from a correspondent at Cambridge that a specimen of the lesser kestrel (*Falco cenchris*, Naum.) has been placed in the hands of that well-known naturalist, Mr. Baker, for preservation: I hope Mr. Newton will examine the bird and report: it is the first instance of which I am cognizant of the occurrence of this species in Great Britain.—*Edward Newman.*

Osprey near Exeter.—A fine specimen of the osprey was shot in the estuary of the Exe by Mr. John Seward, poulterer, Exeter, on Wednesday. It measures from tip to tip of the wings 5 feet 6 inches. It is in the possession of Mr. James Truscott, naturalist, 2, Bartholomew Street, to be preserved, where it can be seen.—*Exeter and Plymouth Gazette, October* 6, 1865. [Communicated by the Rev. M. A. Mathew.]

The Great Black Woodpecker.—I have long known that a specimen of the black woodpecker came into the possession of the late Mr. Newton, of Mellaton House, near Okehampton, Devon, and I have been informed from time to time that it was obtained from the immediate neighbourhood which borders on the north outline of Dartmoor. Mr. Newton brought together a very large collection of British birds, and he used to communicate everything of interest to the late Dr. E. Moore, of Plymouth, who published a Fauna of Devonshire Birds, for various societies. The Rev. Mr. Rowe, of Crediton, when he published his work on Dartmoor, obtained from Dr. Moore several particulars of the Natural History of Dartmoor, and the following remark appears respecting the specimen alluded to:—"Great Black Woodpecker (*Picus martius*): a specimen is in Mr. Newton's collection, which was shot near Crediton." Mr. Newton's son, Mr. J. G. Newton, has obligingly communicated these particulars to me, and he concludes his letter by saying, "I may remark that my bird is a female, having the crimson colour only at the back of the head."—*Edward Hearle Rodd; Penzance, October* 24, 1865.

Note on Hybrid Doves.—Two years since I bred in an aviary four hybrids between two males of our wild turtle dove and two female collared doves (*Risoria*); they were fine handsome birds, larger than their parents, but unfortunately all four turned out males. Last year I paired off a wild male with a female of the pure white dove, which I take to be only an albino variety of the Risoria. The result was a pair of hybrids slightly lighter in colour, but otherwise similar to the four of the last season. This year I paired a male of these last birds with a white female, breeding back again towards the tame species; the young obtained were again like both former sorts of hybrids, only with a still lighter tint of plumage. In the two first pairings the wild male bird took no part whatever in incubation; in the third and last the male hybrid took his share in both nesting and feeding. I will only add that these birds, old and young, are exposed to external air throughout the winter, and I have never yet lost a bird through illness or disease.—*Robert Mitford; Hampstead.*

Note on Lord Clermont's Enquiry respecting the "Sedge Warbler or Reed Wren at Twickenham."—I saw, in the September number of the 'Zoologist' (Zool. 9729). that Lord Clermont asks for information regarding a warbler, with a song like the reed warbler, living away from water and breeding in and frequenting lilac and other shrubs in gardens. If Lord Clermont will look back to the July number of the 'Zoologist' for 1864 (Zool. 9109) he will find a description of the habits and nesting of this bird in my own garden. I was very unwilling to destroy these poor birds, although very curious to determine the question of species. I let them rear their young, and then all depart in peace. But this year, in July, finding two pairs inhabiting a nursery plantation of young lilacs, I obtained permission and shot the two male birds, both in the act of singing. The females I did not see, as the top of the shrub was such a dense and close mass of foliage that, but for the song of the males, I should not have discovered even them. I afterwards succeeded in finding two nests, similar in structure and similarly situated to those of the previous year in

my garden, from both of which the young had evidently flown only a few days previously. The birds were not in good order, but just beginning their summer moult. I so arranged the matter that at the time I shot these birds I received from Romney Marsh fresh-killed specimens of the true reed warbler, shot in the reeds of the fen-ditches, and, on comparing the two birds in the flesh together, I have little hesitation in saying that the inland warbler is not our reed warbler. I will not enter into the chief points of difference at present, as I hope next May to get a specimen or two in fine plumage.—*Robert Mitford; Hampstead.*

The Ruff on the Northam Burrows, North Devon.—On the 11th of September I saw a ruff shot on the Northam Burrows. It was a bird of the year.—*Murray A. Mathew; Weston-super-Mare, October* 9, 1865.

Curlew Sandpiper at Kingsbury Reservoir.—On the 2nd of September last, at Kingsbury, my brother and I found a pair of these somewhat rare visitors to the Reservoir: one was killed by my brother without any difficulty; but the second joined company with a ringed plover, and together they led us up and down the water many times, till at length the sandpiper passed me within range, and was bagged. These birds were in the transitional plumage, and still retained, in some degree, the russet throat and breast of their summer dress.—*W. H. Power; Queen Square, Bloomsbury.*

Temminck's Stint near Rainham, Kent.—Two specimens of this species of stint were obtained by my brother and myself on the marshes between Rainham and Otterham, on the 9th of September last: we were sitting upon the sea-wall, when, hearing them utter their cry as they swept up the creek, we had just time to secure one each as they passed.—*Id.*

Crane at Stallford.—I have received from Mr. Haddon the following particulars of a crane, which was shot by him on Tuesday, the 17th of October, at Stallford, near the Bristol Channel. It measured 4 feet 11 inches in length from the toes to the tip of the bill, and 6 feet 10 inches from tip to tip of the extended wing: the weight was 7¾ lbs. It is evidently a young bird of the year.—*Cecil Smith; Lydeard House, October* 21, 1865.

Sacculina Carcini, Rathke, *on the Devonshire Coast.*—I have much pleasure in adding this remarkable and interesting parasite to the Devonshire Fauna. Several specimens of the female only I met with on the only vulnerable part of Carcinus Mænas, *viz.* under the tail, and I only found them on the males. I examined the contents of the ova sac under a one-eighth objective, but could not resolve the contents into anything but oil-globules (incipient eggs?). I find, however, by examining a specimen preserved in spirits, so that the tissues had become a little hardened, that the eggs have apparently a double coat. I find also amongst the eggs certain sacs containing several eggs in different stages of development. The eggs are perfectly round, and are filled with a pale yellowish semipellucid mass. Sacculina Carcini has been found attached to C. mænas at Bohuslän, as well as on the coast of Norway: the Rev. A. M. Norman has also dredged it off Berwick attached to the pleon of Portunus holsatus (see 'Record of Zoology,' 1864, p. 310.)—*Edward Parfitt; Devon and Exeter Institution, Exeter, October* 27, 1865.

LONDON: EDWARD NEWMAN, PRINTER, 9, DEVONSHIRE STREET, BISHOPSGATE, N.E.