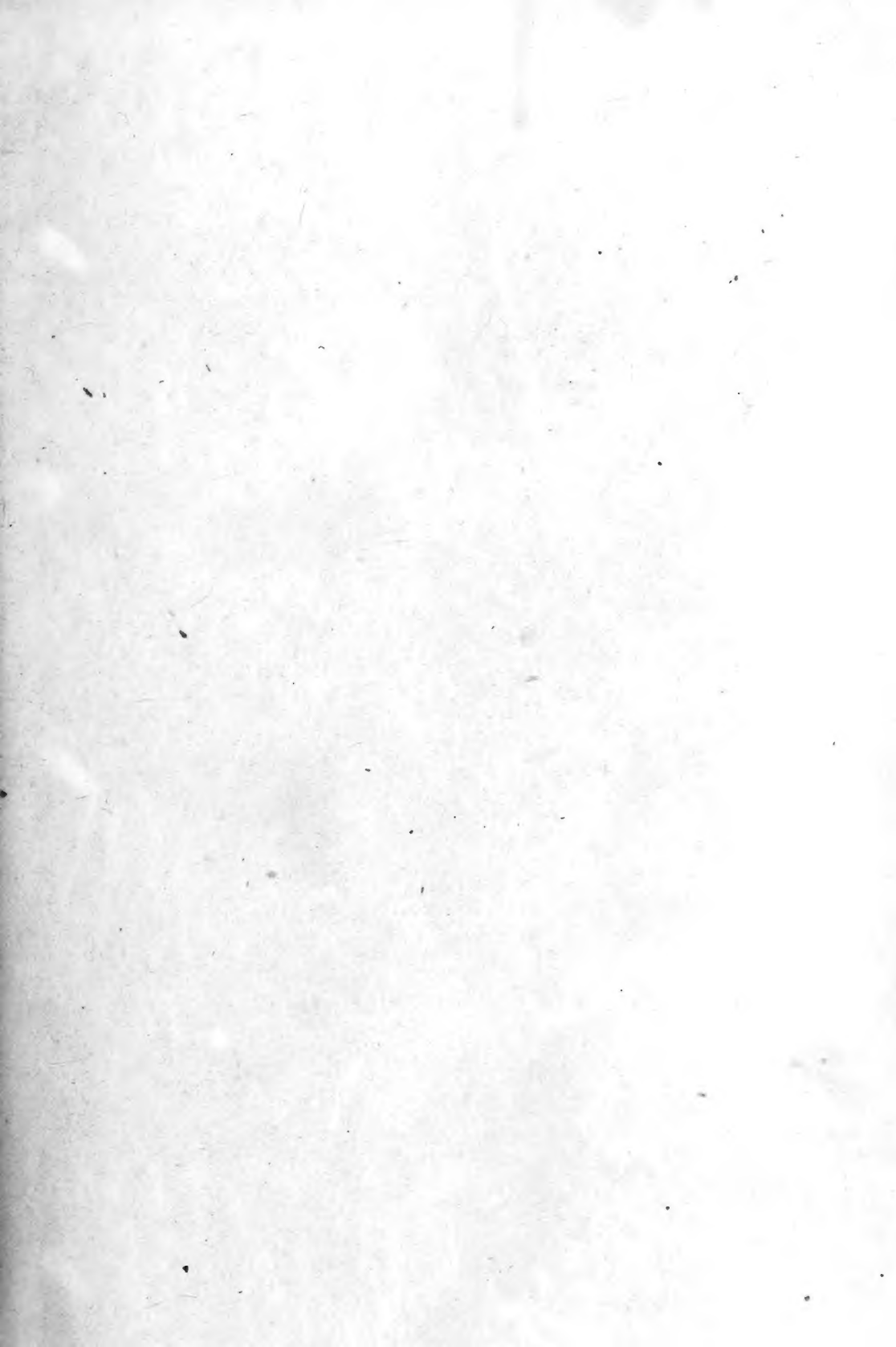
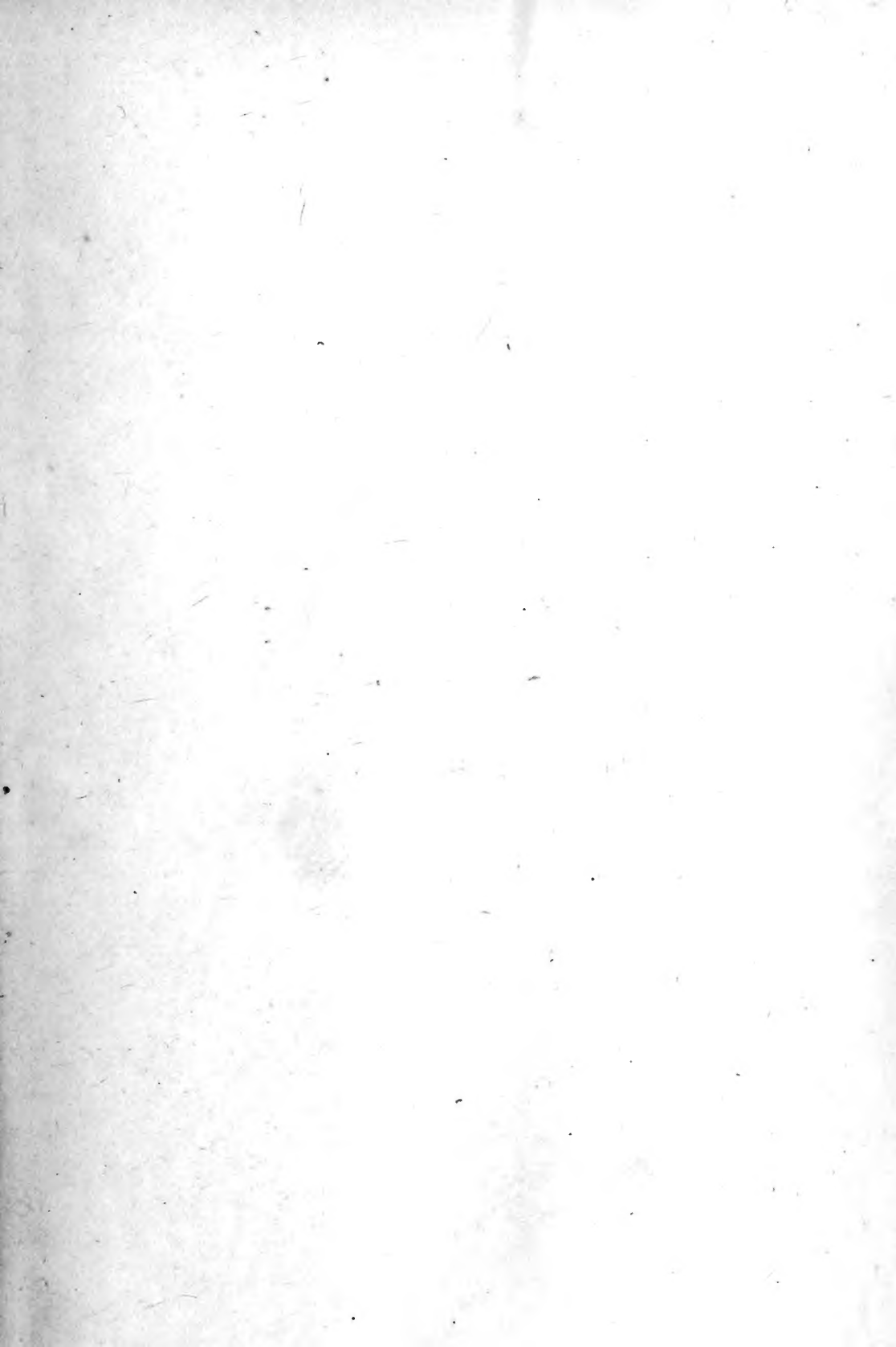


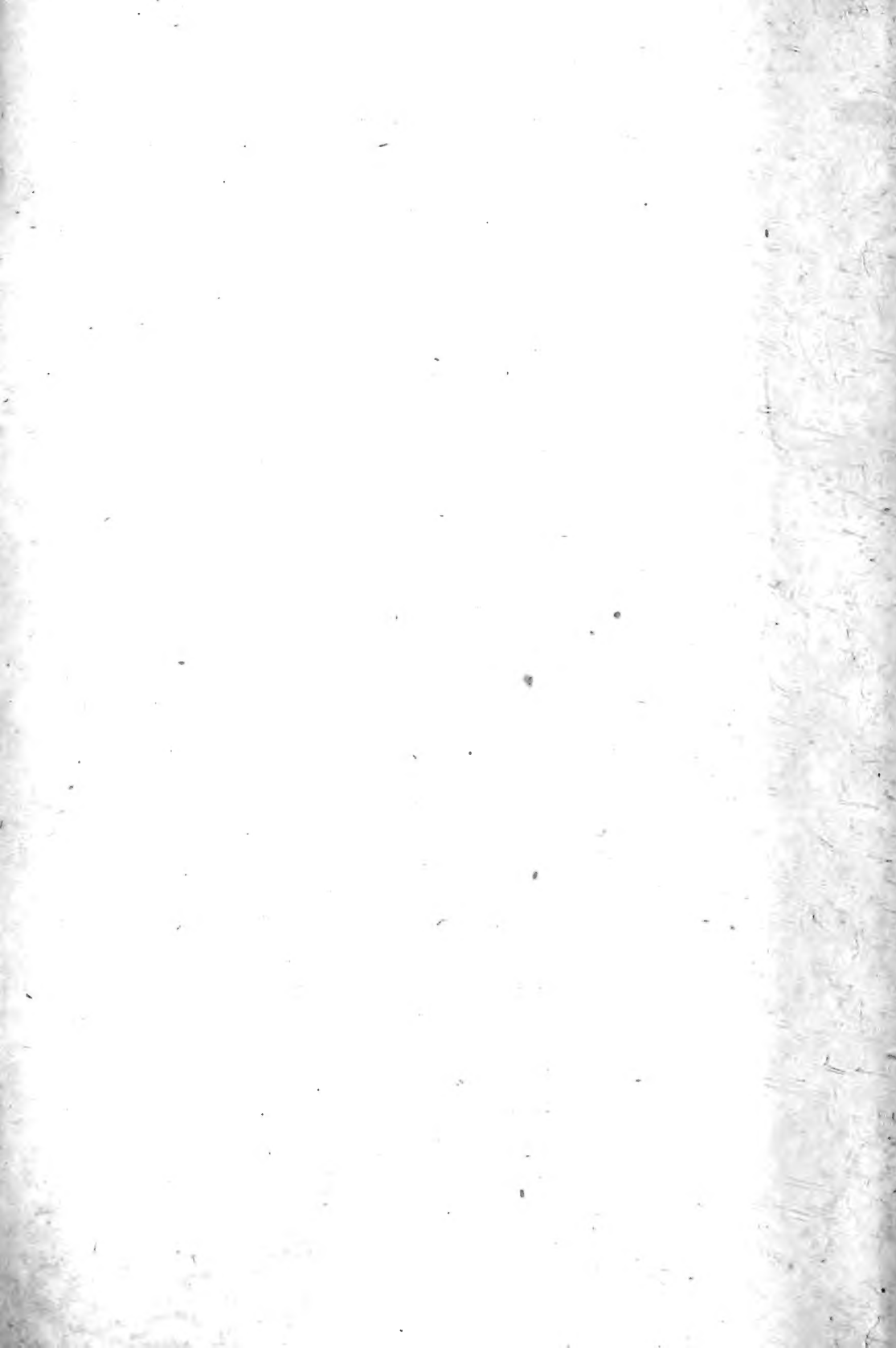
§. 260.

94.













*Yours most truly*  
*Edward Newman*



THE  
ZOOLOGIST:  
A  
POPULAR MISCELLANY  
OF  
NATURAL HISTORY.

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SECOND SERIES.—VOLUME THE ELEVENTH.

(OR THIRTY-FOURTH FROM THE COMMENCEMENT.)



LONDON:  
JOHN VAN VOORST, 1, PATERNOSTER ROW.

M.DCCC.LXXVI.

“ To me be Nature's volume broad displayed ;  
And to peruse its all-instructing page,  
Or, haply catching inspiration thence,  
Some easy passage, raptured, to translate,  
My sole delight.”

THOMSON.

“ Full Nature swarms with life ; one wondrous mass  
Of animals or atoms organized,  
Waiting the vital breath, when Parent-Heaven  
Shall bid his spirit blow.”

*Id.*

“ Reader, our companionship ends here. Should the author have persuaded thee to follow in his footsteps, to tread the paths which he has trodden, to gaze with an inquiring and delighted eye on those things which he has gazed on,—it is enough. He bids thee affectionately—farewell!”

EDWARD NEWMAN, in ‘*Grammar of Entomology.*’

## PREFACE.

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It has been the custom in Prefaces to the 'Zoologist' for the Editor briefly to summarise the principal work in Natural History recorded in the pages of the volume; but the author of those pleasant words, after long and faithful service, has at length been called away to his eternal rest. There can be no more appropriate Preface to this, the Thirty-fourth volume, and the last with which he was connected, than some record of a long life heartily devoted to the cause of Nature.

EDWARD NEWMAN was born at Hampstead on the 13th of May, 1801. His ancestors became members of the Society of Friends at the rise of that sect in 1646, and several of them suffered imprisonment on account of their faith, yet they have always remained stedfast to their tenets. His parents, George and Ann Newman, had four children, all sons, of whom Edward was the eldest. Both father and mother had a taste for Natural History, and early inculcated it in their children. One of his brothers writes:—"Edward's love for Natural History was born with him, and this natural taste was fostered by both parents. Our father encouraged us by daily conversation to observe all natural objects: he knew the notes of all the birds of the district, and imparted the knowledge to his children. I well remember him telling us at the breakfast-table that that morning he had heard the chiffchaff for the first time that year, or seen the whitethroat; and we used to record such events in our little note-books. White's 'Natural History of Selborne' was the beloved book of the family; that and 'Bewick's Birds' were referred to almost daily. Our mother taught us the names of all the wild-plants as they came into blossom, and encouraged us to collect and study them." To these books may be added 'Bingley's Quadrupeds,' which was also a great favourite. He himself writes:—"I had a very, very early predilection for butterflies; I may say even from my nurse's arms." And

evidence of early work in Natural History appears in a minute memorandum-book, inscribed in large capitals on the first page:—"Botany. E. Newman," without date, but written in pencil; at so early an age that each letter is formed separately, and occasional pages are devoted to "pothooks and hangers." The following is an extract:—"Of the geranium. The class is Monadelphia. The colour is various, being sometimes white, in others scarlet; its leaf is round, but ragged; there are peppermint-scented and pencil-blossom. There are many other geraniums, but I do not know their names." Then follows a list of the Linnean divisions:—"Dodecandria, Icosandria, Polyandria (many), Didynamia (4), Tetrodynamia (6)," &c.

In the year 1812 he was sent to a boarding-school at Painswick, in Gloucestershire, of which Oade Roberts, a member of the Society of Friends, was master, where, in addition to being initiated into classical studies, his love for Natural History was developed. On "10th mo. 29, 1813," he writes home to his mother:—"I take great pleasure in botanizing, but there are not so many flowers as there were when I first came here to school; but still I find some. I shall have great pleasure in showing thee my botanical copy-books when I am at home." This is written in a small neat hand, very different from that in the memorandum-book mentioned above. On "2nd month 3rd, 1815," he is still at Painswick, and writes to a relative:—"I could not give Helen much information with respect to lichens and mosses, as I have only yet studied the first classes; but I am now beginning to study the class Cryptogamia, though the snow has been on the ground ever since I returned." One of his schoolfellows, a cousin, writes:—"We were both initiated into a love for Natural History, which continued to interest us in after years; in his case eminently so. \* \* \* What particularly impressed itself on my mind was the neatness and accuracy of Edward's drawing of a beetle,—so superior to what any of the rest of us could accomplish."

On leaving school, in the year 1817, he went to Godalming, in Surrey,—his mother's birthplace,—to which rural town his father, formerly in business in London as a manufacturer of morocco-leather, had removed on his retirement. The family house is just outside the town, at the corner of the lane

leading to Hatch. The father, however, seems to have been by no means tired of commercial life, for he again entered into business—this time at Godalming—as a wool stapler. This step was probably taken by the good man solely for the sake of his son, in order that on leaving school he might begin a commercial career under parental supervision. For ten years father and son continued in the wool trade; but the study of Nature—for which the neighbourhood of Godalming offered great opportunity—proved a strong counter-attraction to the younger man. He was not energetic in the routine of business, and it is to be feared that his absence from duty was frequent; nevertheless, he was far from idle. Indeed, idleness was foreign to his nature; not only at this period, but throughout life, idleness was in his opinion a positive crime. He held that no man need ever be without work. He knew scarcely any rest: if when he came home there were an interval of only a few minutes before a meal, out would come books, papers, and insect-boxes, and he would at once be deep in scientific work. He was generally in bed by ten o'clock at night, but up again in the very early morning; until his later years he was seldom in bed after six o'clock, and in summer-time he would often be up and at work by five, four, and even three o'clock. After 1840 the greater part of his writing was done before breakfast; he would also write from about seven to nine in the evening; but the greater part of the work was done in the uninterrupted quiet of the early morning.

It was in this spirit of industry that he wandered away from business at Godalming, and sought more congenial pursuits in the lanes and fields, the woods and commons, of the beautiful county of Surrey. Whether shooting blackcock on Hindhead, climbing old hollow trees for owlets, or wandering about the lanes with an insect-net, the mere present pleasure of the occupation was not the principal charm. “When the lengthening days give the first impulse to the feathered tribes to bend their course northward for the breeding season, it is here that I listen for the first notes of the chiffchaff; here I watch for the blackcap, the nightingale, the willow wrens, the garden warblers, the whitethroat; here, hour after hour, have I hunted for their nests,—my object not being plunder, but information. Often

have I covered my hand with scratches, from the prickles of briars and brambles, in my attempts to gain a satisfactory view of a nest and its contents, without causing any disarrangement, well knowing how great was the risk of desertion if the parent birds should discover anything amiss; and, when deserted, if I knew not the builders, a nest was valueless. How well was I repaid for bleeding hands, if I discovered but one point in the history of a species. Eggs strung on bents are rife in all country places; old nests are easy to be seen when the leaves are gone; birds are plentiful in every hedge-row, and their song is the burthen of the passing breeze: but to connect with certainty each bird with its mate; to assign it the proper nest and proper eggs; to learn the exact time of its arrival and its departure;—all this is a study, a labour, rarely undertaken, and affords a pleasure akin to that which must be felt by a traveller exploring countries where man has not before trodden." Let the reader turn to the first chapter of the 'Letters of Rusticus,' from which the foregoing extract is taken, and observe with what microscopic, yet loving and living, detail the natural features of the neighbourhood of Godalming are pourtrayed. No words can give so true an account of these ten years spent at Godalming as the 'Letters of Rusticus.' Extract after extract might be quoted, all to the point, and of exceeding interest; but the short space which can be allowed to this brief memoir does not permit.

It will be noticed that 'Rusticus' is here spoken of as the actual work of Mr. Newman. This brings forward the once-vexed question of the authorship of those charming 'Letters.' To few besides the author's near relatives has the secret been divulged; even Edward Doubleday, his nearest friend and second self, was kept in ignorance of the actual fact, although he, in common with most naturalists, had a shrewd suspicion. When the 'Letters' appeared in the 'Magazine of Natural History' and the 'Entomological Magazine' they caused quite a sensation in Godalming. Written by one who knew Godalming so well, who was so able a writer, as well as so skilled a naturalist; yet no one was able to discover the author. After much discussion they were finally attributed to the late Mr. J. D. Salmon. The veil may now be withdrawn,

revealing Mr. Newman as the author of the whole. Much of the information on the birds and mammals of Godalming was, however, gleaned from his kind friend and frequent companion Waring Kidd, who, now in his eighty-eighth year, still lives at Godalming; and modesty prevented Mr. Newman from assuming the authorship when the facts were not all his own. The 'Letters' having been once begun under a *nom de plume* ('Magazine of Natural History,' 1832, vol. v. p. 601) it was convenient to continue the pleasant fiction. It has probably escaped the notice of many that the last of these 'Letters' were published in 'Chambers' Journal' in 1850, and were on the house sparrow; mice, rats, weasels and stoats; feathered mousers; and squirrels. In one branch of his "Observations," *viz.*, the life-histories of insects injurious to agriculture, Rusticus was a pioneer: no such work had previously been attempted; and, great as is its value, few besides Mr. Newman and the late John Curtis have ever ventured upon it. These chapters on Economic Entomology were continued at irregular intervals in the 'Entomologist,' the 'Zoologist,' and the 'Field,' until towards the close of his life.

In the year 1826 the wool business at Godalming was abandoned. It had never been a very profitable concern; and the parent, now past middle life, was desirous of freedom from commercial occupation. The son had never taken to it kindly.

In the same year Mr. Newman came up to London, and entered into a rope business at Deptford. To a nature such as his—delighting in all the charms of a life in the country—the change to Deptford would have been most distasteful, had it not opened out further opportunities for the cultivation of friendships and society among men of his own tastes. The rope business was to a great extent managed by the foreman, who had held the same post in the wool business at Godalming. It was not allowed to become a drudgery, although to him commerce was never congenial. Only one day in each week was entirely devoted to its affairs; a small part of each of the remaining days sufficed. At the rope-walk he had a large garden, which he subsequently described as a place where everything grew as it liked. A large plot of ground was sown with the common red valerian, because of its attractiveness to insects; and here he

would remain in one spot for an hour or more at a time, mute and motionless, intently studying the habits of some insect, until he had mastered the minutest detail.

At Deptford he had many friends; and of the friendships then formed many ceased only with life itself. Francis Walker, Edward and Henry Doubleday, John and William Christy, Samuel Hanson, and Dr. Bowerbank, were perhaps the most intimate. Not only amongst scientific men, but in the Society of Friends, and indeed in the whole parish, did he find congenial spirits. His keen wit, acute perception, his knowledge, and genial manner, rendered him a general favourite; yet he appeared all unconscious of the charm which he possessed. No one could entertain a greater contempt for shallowness and conceit, for a man possessing knowledge only surface-deep who assumed to be an authority; in fact, for "humbug" in any shape. He scorned to conceal his opinions for fear of giving offence, and did not spare chastisement wherever deserved. His pen was as powerful in caustic satire as in microscopic description; and it was brought to bear with effect in parish affairs, in which he took a keen interest. At one time a part of Deptford was without gas, and, curiously enough, as it seems to us in the present day, there was strong opposition to its introduction. He worked vigorously for the cause of light, and had the satisfaction of success.

During the period of his residence at Deptford he made many excursions with one or other of his chosen associates. Birchwood, in Kent—for many years the place at which the annual dinner of the Entomological Club was held, or, as he puts it, "duly solemnised"—was frequently visited. In Wales, in Scotland, and in Ireland, he also took long walking tours: in all these rambles he was humbly studying Nature, and carefully adding to his already vast store of information. In 1826 his parents had removed from Godalming to Leominster, in Herefordshire; and thus a fresh country was opened out. It was here that his first fernery was formed, a graphic description of which is given in the Introduction to the 'History of British Ferns.'

Notwithstanding his incessant and unwearying work in Natural History, and that a great part of his life had been



spent in constant scientific study, there was no haste to rush into print, for as he himself says, "What is done prematurely has most commonly to be done twice;" and it was not until the year 1831 that his first paper was published. This appeared in the 'Magazine of Natural History,' then edited by J. C. Loudon, and was entitled—"Polyommatus Argiolus, Melitæa Euphrosyne and Selene." His attention at this time and for some few years later—until 1837—was principally devoted to Entomology; indeed, with the exception of the few short letters of Rusticus, in the 'Magazine of Natural History' (1832 and 1833), on birds, the whole of his published writings up to 1838 are upon entomological subjects. It was in 1832, however, that he was fairly broken to literary harness. In that year the 'Entomological Magazine' commenced its career of usefulness: it emanated from the Entomological Club,—a small body of gentlemen, who met socially at each other's houses on one evening in every month. This, the oldest entomological society in the country, was instituted in 1826 by Mr. Samouelle, author of the 'Entomologist's Compendium;' and he and Messrs. Davis, Hanson, and Newman, were the original members. At this time (1832) the Club consisted of the Rev. C. S. Bird, Messrs. W. Bennett, J. S. Bowerbank, William Christy, jun., John Curtis, A. H. Davis, E. Doubleday, S. Hanson, J. Hoyer, E. Newman, F. Walker, and J. J. Walton. Of these fathers in Entomology all but two have passed away. It was not surprising that such men should feel the need of a journal devoted to their science. The "Introductory Address" is of considerable interest, and sets forth that the projectors anticipate no profit, but have undertaken the work "with a disinterested desire to promote the progress of a science to which they confess themselves zealously attached." Mr. Newman was chosen Editor, and threw himself heartily into the work. In the first volume, out of sixty-three articles fifteen are from his pen,—many written under pseudonyms,—in addition to elaborate editorial notices of new books. Amongst his writings in this volume attention may be called to the beautiful lines "On the Death of Latreille" (p. 320), as well as to the "Entomological Sapphics" (p. 432), professing to be translations from the Persian, Arabic and Greek, but in

reality emanating from his genius alone: entomologists have not often been also poets. Mr. Newman continued to contribute freely in succeeding volumes, writing under various pseudonyms—"Corderius Secundus," "E. N. D.," "Rusticus," and others,—as well as in his own name. The five volumes of the 'Entomological Magazine' give the reader a more intimate personal acquaintance with him than any of his books or subsequent writings. It was, perhaps, a feature in his journalism that he and his readers became at once acquaintances, and after a while actual friends; indeed, many who made his friendship through his writings never saw him, yet have felt his loss as keenly as though they had been constantly in his society. In addition to the members of the Club the following well-known scientific men were amongst the contributors to the magazine:—Messrs. Babington, Dale, Douglas, Haliday, Hewitson, Shuckard, J. F. Stephens, Swainson, Waterhouse, Westwood, and Yarrell, all of whom were more or less personal friends. Edward Doubleday was Editor of the second volume, Mr. Newman of the other four.

It was in 1832 that Mr. Newman's first important publication appeared,—a demy 8vo. pamphlet of 56 pp., entitled, 'Sphinx vespiformis: an Essay;' with the motto:—

"All are but parts of one stupendous whole,  
Whose body Nature is, and God the soul."

This clever attempt at classification created a considerable stir, and met with strenuous opposition.

In the year 1833 he was elected a fellow of the Linnean Society; and in the same year he took an active part in establishing the Entomological Society of London, which Society may be said in great measure to have sprung from the Entomological Club, then of the respectable age of seven years. He was elected a member of the first council; Mr. Kirby, honorary President; and Mr. Children, President. During the succeeding years, in addition to editorial work, he wrote occasionally in the 'Magazine of Natural History,' and contributed various papers to the above Societies.

In the year 1835 the 'Grammar of Entomology' was published; a most useful little book. "The author supposes his reader utterly ignorant of Entomology, and endeavours to show

him that it is the History of Insects, and the Physiology of Insects, and the Classification of Insects, and the Art of Preserving Insects." This book soon went out of print.

In 1836 the laws and regulations of the Entomological Club were codified; Mr. Newman was re-elected Curator, and Mr. Walker, Secretary; and an appeal was made for contributions of insects and books. This appeal was most liberally responded to, many gentlemen, Mr. Newman amongst the number, giving their whole collection; and other valuable donations of insects were received. So liberal were the donations that the Club had to choose between building a museum and paying a curator, or disposing of all but the British insects. Eventually the bulk of the collection was presented to the British Museum. The second regulation is—"That the Cabinet and Library be open at the house of the Curator, 21, Union Street, Deptford, on the Friday in every week during the months of January, February, March, April, September, October, November, and December." This practice of throwing open his house to naturalists on one evening in the week was continued until 1841. From that year until 1849 the Club cabinets were under the care of Edward Doubleday and of Francis Walker. On Mr. Newman's removal to York Grove, Peckham, in 1849, he resumed the curatorship, and in 1856 the weekly assemblies. He always looked forward to the company of his friend Mr. Jenner Weir on these occasions; indeed, it was in great measure owing to his kind assistance in after years, when health was failing, that they could be continued. In a letter to him, dated 8th September, 1856, 5.45 A.M., he writes:—"I am re-arranging the Lepidoptera belonging to the Entomological Club, and am doing this solely for the purpose of assisting beginners, who are almost daily applying to me for names. I purpose being at home at six o'clock every Thursday evening for this especial purpose. You will see that the Collection ought to be in better condition than it now is, or I shall not be so useful as I could wish. This idea is not new: I did the same thirty years ago, and continued the practice for many years; but other cares intervened, and the cabinets went to poor Doubleday, whose generous disposition was not qualified for a curatorship, and under him the Collection

became reduced to a mere skeleton,—he gave and lent to everyone whatever they asked of him.” This one night in the week was sacred to its purpose: no engagement—not even illness—was allowed to interfere. It was always a pleasure to him to afford information, especially to young men, and they would avail themselves freely of the opportunity. Older naturalists, too, would often come, and their company was a great pleasure to him. In the earlier days this evening was no great undertaking; but in later years it was almost more than his powers permitted. He would come home weak and tired, and needing rest; or he may have been at home ill during the whole week: but Friday evening always found him at his post, ready to show the Collection, or patiently to name captures even if of no great interest or rarity. Of the many young men who were welcomed, few knew how a kind and courteous manner sometimes concealed bodily suffering. The Entomological Club is now in its fiftieth year; and, with the exception of the eight years mentioned above, its Collection has always been under his care, and much of his time was devoted to it.

In 1837 he abandoned the rope trade, and wrote to a relative as under:—“I am wholly without any definite prospect as regards business, having entirely given up my own, which was a very small affair. \* \* \* I am very indifferent as to any business engagement, as it is always so great a tie, and cannot be abandoned for any length of time without something like a dereliction of duty: moreover, I think that the opportunity for enjoying life will with me shortly expire, and I am desirous, while blest with strength and health, of visiting the country, and breathing the air of mountain-wilds unchecked by the necessity of returning on a certain day.”

In the foregoing a record will be observed of that melancholy which, not only at this period but throughout life, at times beset him: it was not often of long duration, nor had it any real cause. Only a short time before, he had written:—

“To me long life-time, though to thee forbidden,  
Perhaps may be granted.”

Thus showing that the erroneous idea that his life would be short had only recently been entertained.

It will be seen that he had already paid a visit to Wales:

this was just prior to the letter, in company with his friends John and William Christy; and of this visit he wrote in the Introduction to the 'History of British Ferns.'

He was now freed from the cares and restraints of business; but no great journey was the result. Having begun to work at ferns he became fairly engrossed with his subject, as was always the case with everything he undertook. But still he was only studying, not writing, or at least not publishing; for, as has been already observed, he never published until his subject had been thoroughly grappled with and mastered. His first paper on ferns appeared, it is true, in 1838; but it was not until 1840 that the 'History' appeared, although the first edition only reached to 104 pages.

In June, 1839, he went to Ireland, whither he had made an excursion with his friend William Bennett a year or two previously. Starting alone from Newry, knapsack on back, he went northward, and so round the entire coast, until the tour finished at Dublin, in August. Throughout the whole trip he had paid especial attention to ferns, and collected a mass of information concerning them. But every natural object, in whatever branch, was of interest to his cultivated mind; and in the "Notes on Irish Natural History" (1840), entomological, ornithological, and botanical observations, generally, are to be found.

December of the same year found him still without a business, but working hard at the 'Ferns;' not only writing the letter-press, but drawing the illustrations; for the whole of the beautiful drawings which illustrate it—figures, tailpieces, and landscapes—are the product of his careful pencil. Especial attention should be called to the fern scutcheon, with the motto, "Elegantia et Humilitate," on the title-page. The book was published early the following year, and was soon out of print. It was printed by George Luxford, the printer of the 'Magazine of Natural History,' which Mr. Newman was then temporarily editing, and thus they were associated. The 'Ferns' having gone off so well there was inducement to publish other books. Mr. Luxford was a botanist and of literary ability, and therefore somewhat of a congenial spirit. Mr. Newman was about to be married, and in want of a business. The idea, therefore, occurred to effect a

partnership, and print his own books. This was done; and he once more commenced business—this time as a member of the firm of Luxford & Co., Printers, Ratcliff Highway, at the sign of the “Bouncing B.” On the accession of an entomological partner the “B” received an insect shape, and was used as a trade-mark. Next year, however, Mr. Luxford was bought out of the business; and the printing-office was removed to Devonshire Street, Bishopsgate, where Mr. Newman conducted it until 1870, when he retired from business in favour of his son.

In June, 1841, the ‘Phytologist’—a monthly botanical magazine—was started, and was conducted with great spirit for some years: Mr. Luxford was editor; but Mr. Newman wrote frequently, and was responsible for the work. It was never commercially successful; and on the death of its editor, in 1854, it came suddenly to an end. Dr. Trimen, writing in the ‘Journal of Botany,’ remarks:—“The thanks of British botanists are due to Mr. Newman for the possession of that valuable repertory of the progress of their department for thirteen years.”

After his marriage, Mr. Newman resided for two years in Wellclose Square, being then a near neighbour of Mr. N. B. Ward, whose beautiful, “closely-glazed” fernery, in one of the worst parts of London, was a constant delight. The “stitching parties” at Mr. Ward’s brought together many botanists.

Mr. Newman having now settled down to a business more congenial than either of the former ones,—namely, printing books on science,—he gave up his former country wanderings, and went to work in earnest. But although thus closely occupied he was by no means debarred from his scientific studies. In 1840 the ‘Entomologist’ had been commenced, taking the place formerly occupied by the ‘Entomological Magazine,’ Mr. Newman being Editor, and contributing freely. In 1841 he published the ‘History of Insects,’ of which he says:—“This little book was observed as a caterpillar, in 1835; in 1837 it disappeared, and remained concealed as a quiescent and lethargic pupa, until, roused by the genial influence of the present spring, it has burst its cere-cloths, and assumed the ornamented wings of a gay and volatile butterfly.”

At the end of 1842 the ‘Entomologist’ was discontinued; but

with January, 1843, commenced the 'Zoologist,' of which the founder lived to conduct an uninterrupted series of thirty-three annual volumes,—a circumstance probably without parallel in the history of journalism throughout the world. He would often look at the row of red volumes on his bookshelves with a quiet pleasure, not unmixed with a certain pride. The following extract from the Preface to the first volume gives, in his own words, an idea of the character and scope of the journal:—"The attempt to combine scientific truths with readable English has been considered by my friends as one of surpassing rashness; and many have been the kind and pressing solicitations I have received to desist from a labour so hopeless; many the supplications to introduce a few Latin descriptions, just to give the work a scientific character. In reply to my friends, I would beg to instance White's 'Selborne.' That most delightful of histories is written in pure, plain, intelligible English, and has found ample favour in the eyes of the public. White is now no more; but his mantle has fallen upon others: a multitude of observers have arisen in the same field, and, what is more to my purpose, have become contributors to the pages of the 'Zoologist.' Nature herself is exhaustless; our field of observation is wider, a thousand-fold, than White ever enjoyed; our capacity for observation is certainly not less. These are the grounds I have for hoping that the 'Zoologist' will succeed." The practice of writing Natural History in simple English, thus rendering it interesting even to those not deeply versed in Science, was one on which Mr. Newman strongly insisted. In the lists of contributors to the pages of the 'Zoologist' appear the names of almost every British naturalist of note.

In 1844 the second edition of the 'Ferns' made its appearance, the first having gone rapidly out of print. In the second edition the work had increased from 104 to 424 pages. The Equisetaceæ and Lycopodiaceæ were added, as was also such a mass of additional information that the work was almost rewritten, and hardly to be called a second edition, deserving to rank as a new book. From this time—with the exception of the collected 'Letters of Rusticus' (1849)—until the publication of a third edition of the 'Ferns,' in 1854, he brought out no new book, his time and thought being sufficiently occupied with

business and with editorial duties. There is no volume of the 'Zoologist' that does not contain numerous articles from his pen: these are upon Entomology, Ornithology, and other branches of Natural History; and many are of considerable importance. With him it was not sufficient to work out only one branch of a science, or even all the various ramifications of that one science: with whatever he undertook he made himself thoroughly familiar. He had taken up the study of Natural History, and everything connected with it was of interest to him,—whether Quadrupeds, Birds, Reptiles, Fishes, Insects, or Plants; he was familiar with every branch of every subject.

In the year 1850 he read before the Zoological Society, an ingenious paper proposing a new Physiological Arrangement of Birds. The new system, however, met with slender support, and considerable opposition.

An essay "On the Employment of Physiological Characters in the Classification of Animals," the result of most careful thought, was published in 1856. These two papers are full of information, and the reasoning is very acute. Some naturalists are still of opinion that Mr. Newman's views have been too much disregarded by modern systematists, especially as to the proposed division of birds into two great groups, *viz.* Hesthogenæ and Gymnogenæ: the former containing those birds which produce their young clothed with down, eyes open, and capable at once of running and feeding themselves; the latter, those birds which produce their young naked, blind, and helpless.

The 'Insect Hunters,' or Entomology in verse, appeared anonymously in 1858: it was written for beginners, and gives an insight into the hidden mysteries of the science in simple language. The author discourses pleasantly to a young friend on "The Four Stages of Insect-life:" "Metamorphosis;" "The Scale Wings;" &c. There is a charming little poetical Preface. Although anonymous, the author was at once suspected. The book was quickly out of print; and a second edition, bearing the author's name, was published in 1860. In this appeared several other poems, written at an earlier date.

In 1858 Mr. Newman became Natural-History Editor of the 'Field,' and continued to hold that post until his death. The Natural-History department of that paper, however, largely



increased, and other editors were added. Amongst his papers in the 'Field,' those on economic entomology are of the greatest value; and there can be no doubt that it will be long before his "life-histories" are superseded. Amongst the master-pieces are those of the goat-moth; gooseberry grub; turnip grub; daddy-longlegs; and pear-tree slug: these valuable contributions were continued to within a month of his death, as a column and a half of the 'Field' for May 13th, 1876, is taken up with his "Life-history of the Sandfly, or Simulium." He wrote of these papers:—"My object in penning these notes is to bring the creature face to face to face with his victims; for unless we know our enemy—his appearance, his ways, and his whereabouts—all our attempts to compass his destruction must be futile." Before his time it was usual to consider all insects found on plants as "blight," and to purchase some proffered nostrum in order to destroy them. No one seemed to consider it possible that some insects might be useful, seeing that others were so obviously hurtful. The articles on the inmates of the Crystal Palace Aquarium—popularly written, yet full of information—are also worthy of considerable attention.

From 1858 to 1861 Mr. Newman was engaged on a series of articles in 'Young England' on Insects and Birds. At the same period he acted as Natural-History Editor of the 'Friend' for about two years, writing a column or two in each month's issue of that newspaper.

In March, 1861, Mr. Newman had the gratification of receiving a Testimonial—consisting of scientific books—from about seventy gentlemen, in "high appreciation of services rendered in the promotion and diffusion of scientific knowledge." Mr. Newman had very properly refused to allow his own journal to be used as a means for advertising the testimonial to himself, and by this action many were led to believe that the project was distasteful, and held aloof. The books, however, besides being of great use and pleasure to the recipient of the testimonial, were highly appreciated by his Friday-night visitors. A full history of the transaction will be found in the 'Zoologist' for 1861 (Zool. p. 7457), but modesty seems to have prevented it being indexed.

Mr. Newman's writings had of late years assumed a more ornithological complexion; and in 1861 his small work, entitled

—‘Birdsnesting, being a complete description of the birds which breed in Great Britain and Ireland,’ made its appearance. Three years later, however, he was once more engaged on the old favourite subject—the ‘Ferns.’ The price of his beautiful book was necessarily comparatively high; and many low-priced fern books, by other writers or compilers, had made their appearance. In order to compete with these, a fourth edition of ‘British Ferns’ was published in 1864: it was of smaller size and considerably lower price, and illustrated with steel-plates instead of by woodcuts, as in the former editions. The Introduction, as well as that to the former editions, may be noticed as among the most charming of Mr. Newman’s writings.

The ‘Zoologist’ had, since 1860, been growing more and more bulky: double numbers were frequently resorted to, and yet space could not be found for all the worthy communications that were received. In order to cope with this *embarras de richesses*, the ‘Entomologist,’ which had been merged in the ‘Zoologist’ in 1843, resumed its separate existence in 1864. A large part of the entomological communications at once went over to it, and the difficulty was at once satisfactorily met. From that time the ‘Entomologist’ has been steadily increasing in public estimation; and its circulation is, for a purely entomological periodical, unprecedentedly large.

Mr. Newman had long felt the want of a book of reference on British birds. Montagu’s ‘Ornithological Dictionary’ was a most valuable book, but it was half a century out of date; it had long been out of print, and was very scarce. The idea occurred that what was a desideratum to himself must certainly be so to others. The fourth edition of ‘British Ferns’ being now completed, and the ‘Entomologist’ fairly launched, he at once set to work. With the help of Selby’s ‘Illustrations of British Ornithology’ (1833), Yarrell’s ‘History of British Birds’ (1856), the ‘Zoologist,’ and the ‘Field,’ he laboriously brought the work up to date, giving a reference to Yarrell’s figure of the bird, and Hewitson’s figure of the egg. The editorial additions are naturally very great, and are separated from the original by editorial brackets. The ‘Dictionary of British Birds,’ a demy 8vo, extending to 400 pages of small type closely printed, was published in 1866.

On its completion, Mr. Newman made preparations for continuing the 'Illustrated Natural History of British Moths,' which was commenced in 'Young England.' Five numbers (80 pp.) had been brought out by Mr. Tweedie, in direct contravention of Mr. Newman's wish, and without his knowledge: for these five numbers, written at a much earlier date than the remainder and not printed under his supervision, he never would hold himself responsible. It will be seen at once that they are incomplete, and stand sorely in need of the care bestowed upon the rest of the work. Mr. Newman was eventually induced to continue the work, and having once consented he, as usual, laboured with all his heart. The descriptions of the perfect insect and of the larva are most careful and accurate, indeed almost microscopic. The figures, of which there are more than eight hundred, were drawn and engraved under his own superintendence. In all his former works the woodcuts had been drawn by himself, and engraved by Mr. Kirchner; but now the allotted span of life was nearly reached, and his artistic powers had failed. The engraver was the same, however; and the beauty and accuracy of the figures are in great measure owing to his care and skill. This book came out in monthly numbers, the last one appearing in June, 1869, when the complete volume was published.

Immediately upon the conclusion of 'British Moths' (486 pp. super-royal 8vo), the companion work was commenced,—'An Illustrated Natural History of British Butterflies' (1871), on which even greater care was evinced, as especial attention was given to geographical distribution. These two works form the text-book of British Macro-Lepidoptera.

'British Butterflies' was written in Mr. Newman's seventieth year, and was his last complete work. Two years previously he had retired from business, but by no means from labour. He was at first actively engaged on the above-mentioned work, and on its completion the 'Zoologist,' the 'Entomologist,' and the 'Field,' kept him fully occupied. He was often to be seen at the Crystal Palace Aquarium, and the result of the visits is to be found in various papers in those journals. In the year 1868 he had built an aviary in his garden, and this was a constant source not only of recreation, but of study. There he would sit, until the birds became so tame as to fly to him on his

entrance and feed from his hand. In "Notes of my Bird Cage" (Zool. S.S. 3157) will be found an account of his success in breeding the little Australian parrakeet (*Melopsittacus undulatus*): he possessed upwards of thirty at one time, all bred in the aviary. A diary of the birds, after the manner of Gilbert White, was carefully kept, and short notes frequently appeared in the magazines. He had a great affection for all living animals, and could not bear to see anything suffer, even for its own good. He frequently visited the Zoological Gardens, always intent on gaining information; and in his later years was earnestly at work on a new classification of birds. One of his friends writes, with reference to these visits to the Zoological Gardens, and to the proposed classification of birds which he did not live to complete, and of which but few fragments remain:—"For forty years a visit to the Zoological Gardens has been one of my greatest enjoyments; but with Mr. Newman, who was my frequent companion, the pleasure was very much enhanced. He would stand to watch the movements of that remarkable bird, the Caviama (*Dicholophus cristatus*); its position amongst birds was to him a puzzle, but he at last, I am inclined to think, regarded it as a Raptorial bird, as classified by Mr. Sharpe, of the British Museum. He attached great importance to the mode by which a bird progressed on the ground, and he exhibited almost a childish delight when he first observed that eagles hopped. Natural History was to Mr. Newman not only an intellectual scientific study, but was also an absorbing passion." He was at this time devoting as much attention to Entomology as to other branches of Zoology, making an especial study of the Gallflies and their productions, of the Sawflies, and the Bees,—the latter chiefly with a view to observations on the fertilisation of plants by their agency. His "Collected Observations on British Sawflies" were laid aside for years, and their revision and publication in the 'Entomologist' was only commenced shortly before his death. It is hoped that further instalments may yet appear, containing his later views on a natural classification of Insects,—a subject which had continuously occupied his thoughts since 1834.

The end was now drawing near. In February, 1872, he had

had a severe illness, from which, although unknown to all but himself, he never entirely recovered: it preyed upon his spirits, and lessened that mental grasp which had hitherto characterized him. Towards the end of May, 1876, he again became seriously ill; and although at first it was thought that with his vigorous constitution he would overcome the disease, as he had done previously, he became worse. Further surgical assistance was called in, but to no purpose; and on the 12th of June, 1876, acutely conscious to the last, he passed peacefully away. In his last illness he was patient, and without care or any anxiety. He was interred at Nunhead Cemetery.

Mr. Newman was a Fellow of the Linnean and Zoological Societies, of the Royal Microscopical Society, and of the Zoologico-Botanical Society of Vienna; he was also an original member and, in 1854, President of the Entomological Society of London; an honorary member of the Entomological Societies of France and Pennsylvania, of the Botanical Society of Edinburgh, and of several minor societies: but the only title on which he set value was that of *Academiæ Cæsareæ Naturæ Curiosorum*,—the Imperial Academy of Leopold Charles of Austria, consisting of the forty most distinguished naturalists known to the council throughout the world; each takes the cognomen of one of the original members,—his was that of “Latreille.” Membership of this learned body conferred the title of Doctor, but he was too modest to use the title. Ostentation of every kind was distasteful to him, and he derided it in others; indeed, he prided himself on the opposite extreme, and his manner of life was especially simple and retiring.

The following extracts, from kindly letters written by Mr. Cordeaux, Captain Hadfield, Mr. Frederick Smith, and Dr. Bowerbank, may fittingly be appended to this memoir, and are but types of many. In writing this sketch of a useful life, difficulty has been felt in condensing the material that has offered: much that would have added to its interest has been reluctantly omitted for want of space.

“His loss is no common one, for all who have known him for so many years, through his writings and as a correspondent, can testify to the invariable and ready way in which he imparted information: he has done more in his long life of usefulness

than any of his contemporaries to foster and encourage a love of natural science. The 'Zoologist,' alone, will ever remain a monument of his indefatigable industry; and, as a storehouse of facts for the working naturalist, will be continually quoted in all future works bearing on its special branches of English Zoology."

"We, his friends and admirers, have lost one whose equal we may vainly seek, for he was a man of wonderful power of mind, of great judgment, a profound thinker, an able writer; and, from his great experience in editorship, better qualified than any of our naturalists for conducting a popular journal like the 'Zoologist.' Ever ready to instruct and encourage, too, the student of Nature; never censorious or dictatorial, though his patience at times must have been sorely tried."

"The name of Edward Newman is inseparably associated with the list of those who have themselves advanced natural science, and who have done all in their power to help and encourage others in the field in which they have so successfully laboured."

"He was esteemed and valued by all who knew him. His life was usefully and honourably spent in the pursuit and dissemination of knowledge; and the results of his labours, as published, are a more durable and honourable monument than either bronze or marble."



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## *Hunting and Animal Life in East Greenland.*

[THE following somewhat lengthy chapter is extracted from the second volume of Captain Koldewey's narrative of the "German Arctic Expedition." It is the joint production of Lieutenant Payer and Dr. Copeland, the scientific naturalists to the Expedition, and sets forth more clearly than any other document recently published the subjects of which it treats, *viz.* hunting and animal life in the Arctic Regions, and forms a remarkable contrast to the details of African research, of which more especially we have lately had such interesting examples in the 'Zoologist.' I have in no instance trespassed on the province of what is called "Systematic Zoology," having carefully avoided the discussion of all moot points of nomenclature, or what are called the "grand results of science." I have taken Captain Koldewey's book in hand with a widely different object, and have omitted all scientific names, with the view of escaping controversy on this, the driest and most unprofitable of all dry and unprofitable subjects. When I say that, amongst other alterations, the names of "snow bunting" and "*Larus eburneus*" are coupled together as synonyms, I shall disclose a fact equally perplexing to the "birds-nesting" ornithologist of the old school and gratifying to the "name-changing" student of the new. Far be it from me to criticise such changes, but as a very old man I trust my readers will pardon me for not adopting them.—*Edward Newman.*]

HUNTING often begins in Greenland where it ends with us—in self-defence; but it possesses scientific interest for the zoologist, and the food obtained by it enables the explorer to remain longer away from the ship. There is the zoological, the geographical and the pleasure hunt; the latter is of the least frequent occurrence. Hunting the bear or the walrus is attended with considerable danger; that of the musk-ox, reindeer, fox, birds, and sea animals affords only amusement.

*Polar Bear.*—The Polar bear, which, with his yellowish white shaggy skin and black nose, forms a sharp contrast against the snow-fields at a long distance off, weighs from ten to twelve hundred-weight, and far surpasses in size those specimens in zoological gardens or menageries (which are brought over young, and developed under such unfavourable circumstances); it is surpassed by neither the lion nor the tiger in point of strength, and is quite as dangerous. But the cold zone in which it lives cools its blood; it is wary and mistrustful. The contradictory reports of their courage show that one must never judge one specimen by another, but that each individual is guided by its need of food at the moment. It lives chiefly on seals, watching for them through the ice-fissures, and falls upon them while sunning themselves, with all the cunning of the tiger and the same stealthy step. It also pursues the seal even when diving, for it is a powerful swimmer, and only the reindeer excels it in speed. Over jagged rocky declivities it climbs with cat-like dexterity. The roughness of its soles, its claws, and hairy paws insure its safety equally on smooth or sloping ice-surfaces. Payer skinned the hind feet of a bear we had killed, carefully cleaned them from all fat, rubbed them with alum, and wore them himself: they were beautiful warm stockings, for the bear had good soles. Unfortunately they were lost in a fire on board during the winter. As the seals remain chiefly among the pack-ice, or on its outer edge, so also the bear during the summer is a frequent visitor. It follows the seal-hunters step for step, in order to devour the skinned animals, or when revelling in excess swims to the carcase of a whale. The bear kills its prey before eating it, although it likes to play with it first. It rides on the floes in the arctic current down to Iceland. It is often seen miles from land, and swims towards boats or ships until driven back by shots. When gluttoned with the enjoyment of fat seals it varies its diet by ducks' eggs, and a few hours are quite enough for it to clear a small island entirely.

It is certainly hard for the Arctic traveller to be exposed to the tender mercies of a bear's two-inch incisors; but a gun and a pocket filled with cartridges are of a much more simple process than dragging a dead seal about after one. If you are unarmed the slightest movement disquiets the bear and provokes him to action. But it is a much more serious matter to meet him in the darkness and be mistaken for a seal—a mistake only cleared up when it is

too late. If you are armed the coolness of his adversary inspires the bear with a certain amount of respect. But the bear also deserves our compassion. His life is one continued pursuit of food, although he is protected from the cold by a layer of fat several inches thick. Once we found in the stomach of one that belonged to a besieging corps (which during the whole of the winter and spring had watched the frozen ship closely, and had forced us to be wonderfully cautious), nothing but a flannel lappet which our tailor had thrown away, and in the case of many others it is quite empty. Sometimes the stomach of a dead bear contains nothing but water and large pieces of sea-weed (*Laminaria*), so that hunger compels it to eat herbs. It is certainly no trifle in this world of frost, cold and darkness, with its horrible snow-storms, that mountains only offer sufficient obstacles to his wanderings for food amidst the chaotic crowding and towering ice-fields, surrounded by fissures, or floating out to sea on an ice-floe. Certainly its brown cousin in Europe lives in luxury compared to him, and is comparatively to be envied. In the early part of the year a layer of fat, which lies under the skin in the summer and autumn, quite fails. A large male bear, killed near the ship on the 1st of April, 1870, was dreadfully lean; while a female, shot on Sabine Island, the 7th of July, 1870, was rather fat.

With regard to the much-agitated question as to whether the bear hibernates, we could make no direct observation. But we can say at what time of year we saw them. On the 10th of January, 1870, one came to the ship and we hunted him, but he escaped; on the 13th of January Theodore Klentzer was pursued by one; on the 6th of March Dr. Børgen was attacked by another; afterwards they visited us daily. When I add that Copeland fought with one near Cape Borlase Warren, on the 28th of October, 1869, one may easily see that their winter sleep, if they have any, must either be very short or very disturbed. On the 9th of March we saw a bear in a storm, wandering about with powerful strides, and seeming to think nothing of the bad weather, although a man, protected by the best of clothes, could scarcely have moved from the spot. The bear which we shot on the 1st of April, about three hundred steps from the ship, cost us the greatest exertions to drag away against the north wind. The smell of burnt fat draws the creatures from miles round. In their wanderings they climb high groups of ice, and one can sometimes see them looking far out, with their snouts in

the air, smelling for food. The Esquimaux often catch them by it,—a manœuvre which requires cleverness and self-possession,—and many of them bear marks of the battle fought under such circumstances. Head wounds excepted, a shot will sometimes take away all power of resistance in the strangest manner. Meetings with bears are attended by very different results. It often happens that a party of sledge travellers, under peculiar circumstances, and with but little time to spare, pass one or more of them, sometimes but a few steps off, when they cause no other feeling than that of curiosity and astonishment. Krauschner, the engineer, was the snow-purveyor for the kitchen, and had to go twice a-day with his sledge to the neighbouring glacier. Once a bear attached himself to him; he walked with dignified steps as an escort behind the sledge, and not until the engineer had reached the ship did our shout of alarm make him aware of the presence of his somewhat doubtful friend.

On the whole the flesh of the bear (particularly that of old animals) is far inferior to that of the brown bear; it is coarse and tough, and tastes more or less of train-oil. Barentz and many others maintain that the liver is prejudicial to health. The flesh, however, we have always found wholesome, and the Esquimaux west of Davis Straits give it to their dogs.

Sometimes, on our sledge journeys, we were surprised in the tent; but we never set a thorough watch, chiefly because we none of us really slept, and a large creature like that could not approach without a slight rustle. A tent is to a bear thoroughly unintelligible, and an object alike of mistrust and curiosity. One of Kane's companions, who was roused by the growling of a bear and the appearance of its head through the aperture of the tent, had the presence of mind to put a lighted box of lucifer-matches under his nose, an insult which he magnanimously forgave, and disappeared at once. Our first meeting with one was on the 4th of August among the pack-ice, the day before we landed in Greenland. We had laid-to by a large ice-floe; when about three hundred steps from us we saw two bears. The burning of seal's fat had drawn their attention, for their black nozzles were high in the air, though they were shy of approaching the ship. Copeland, Sengstacke and Payer got into the boat, and, under cover of the steep floe, rowed towards them; but the newly-formed ice, which filled a creek in the floe, only admitted of Payer's landing; he shot hurriedly and missed, and they at once disappeared among the hummocks. It is



not advisable to approach such a powerful enemy unless he is completely disabled. We met with bears which stood as firm as a rock against the shot, although at every bullet they quivered violently, and streams of blood flowed from them. Void of all fat and hungry these beasts of prey haunted the coast, until upon discovering the ship the movements of the men at once drew their attention, and they never left the neighbourhood of Griper Roads (the name of the winter harbour). Whoever went into the open air, though only a few steps from the ship, during the long polar night, required his gun at half-cock. One night the engineer as he came on deck heard a great rustle, and in the morning foot-prints showed that a bear had advanced over the snow to the tent. These besiegers also paid repeated visits to our provisions on land; but they played our astronomers the worst trick, for they carried off the measuring apparatus for the deciding the length of the base. The greatest evil for sledge-travellers is that however important a depôt they may make for provisions, they can never leave it secure from these feræ of the ice. The best way is to hang a sack upon an inaccessible wall of rock. The strength which the bears possess in digging out anything that is buried is astonishing. Covering over with frozen sand and water is better than the heaviest stone, because it blunts the bear's claws. In spite of their great numbers seldom more than three (and that a family) are ever seen together. It is always well understood that the old ones must be killed first, for a she-bear deprived of her cubs is a terrible adversary. If they are only wounded, she pushes them before her or defends them with her own body, though a cub will never hesitate to devour the flesh of its mother.

The ice-fields of its native home are pleasant to the bear, and it will not willingly part from them. The whaler 'Bienenkorb,' which we visited in 1869, had one in a cage on deck; and when, from the strong motion from the ship, it caught sight of the ice, it began to howl dismally. Indeed the sight of the drift-ice worked so powerfully on the creature that they were obliged at last to have a veil of sail-cloth before the cage. On the 23rd of August, on our return voyage, we saw through the pack-ice, half-hidden by the fog, the three last bears, and as it fell they seemed to be taking leave of us in a strange tableau.

*Arctic Fox.*—The Arctic fox is a very interesting species of its genus. It is either (and that irrespective of the time of year) bluish

white or gray. Its coat, which is wonderfully soft, forms an article of commerce with the Hudson's Bay Company. It is considerably smaller in bulk than the polar hare, which, when grown up, generally weighs about eight pounds and three-quarters. Its flesh is no delicacy. Barentz, and since him several other Arctic travellers, however, found it enjoyable, and we (Pansch and Copeland) did our best to eat it. The Arctic fox has, with but few exceptions, none of the cunning attributed to our own Reynard. At least our recollections of it (except in one or two cases) are of a most harmless character. During the winter we succeeded in catching some after the manner of the Esquimaux. Once one was taken out of the trap, and laid down for dead, but after a time it sprung up and rushed away. For the young ducks, for which it has a great weakness, the fox is a bitter enemy. It lives upon anything it can get in winter, even shell-fish and other salt-water produce which is brought by the tide on to the strand-ice. In the summer lemmings seem to be its chief food. Nearly the whole of the winter and spring we kept some prisoners in the engine-rooms; in such close proximity to the coals they all turned black. Two of them died of tubercles on the lungs. A beautiful gray fox had to be garotted in the cabin for refractoriness; another was set free, and the last deserted the cage that we had made it and put upon the ice near the ship: this desertion, which was brought about by the melting and falling down of the block of ice on which the cage stood, and which we all witnessed from the deck, had something particularly comical about it. The fox, which had almost waned away to a skeleton, began to stretch himself, then to stick out his bushy tail like a broom, wriggled his lanky body into a pool of water, and lastly, as elegantly as a dancing master, and as if longing for liberty, started off without deigning to cast another look at the ship.

The European fox shuns mankind, but the Greenland fox seeks man's society, in perfect innocence and without any suspicion, for it hopes to profit by him. It is the first, after a fortunate day's hunting, to show its astonishment and also hasten to enjoy the spoil, as well as steal a reindeer ham from the sledge in the night and carry it away. It accompanies him on hunting and sledge journeys at a respectful distance, and employs his time of rest in visiting, opening and plundering the sack of provisions. An ice-bound ship it watches with great favour, for there is always some lucky chance bringing him some opportunity of profit, and things

which can be easily carried away. Indeed it is so accustomed to sponging upon others that it is often difficult to make him ashamed of himself. If, after hours of constant gnawing, or, when in company with others, his envious snarling, one goes out of the tent to stop his tugging at the ropes, instead of going away humbly, he looks boldly into his benefactor's face, barks at the firing, and goes off reluctantly. At other times they come curiously trotting along, not allowing themselves to be frightened by the firing, and a piece of bacon-rind will entice them to follow the sledge for miles. It is a troublesome piece of work to skin a fox newly killed, in the icy cold; its warm skin forming a warmer neck-tie on that account.

*Reindeer and Musk-Ox.*—The Greenland reindeer differs at least from the American, Laplandish and Spitzbergen species. Its horns are not shovelled at the tips like theirs; they are also more upright. It carries its head and neck high; its whole build is elegant, and reminds one, in every respect, of the European deer. Kane and Hayes also met with them in the most northerly parts of West Greenland. Our excursions taught us that they increase in numbers towards the interior of the country; indeed, at the back of Kaiser Franz-Joseph Fjord, in the neighbourhood of a glacier remarkable for its luxuriant vegetation, we came upon a tolerably good footpath trodden by the reindeer.

The musk, or, properly speaking, the sheep-ox is somewhat smaller than the European ox. Its threatening is quite in contrast to its harmless nature; its colour is black; its hair long, and falling in rough masses, though on its back is some wool, not to be surpassed in fineness. Payer pulled out the wool of three that were killed, on Kuhn Island, to wrap a number of fossils in, for transportation, and took a careful sketch of one of the most stately. Its eyes are particularly small. As the name implies, the creature is distinguished, according to its age, some more, some less, by the smell of musk in its flesh and fat, to which, however, one can accustom oneself as to the smell of train-oil. Its flesh, upon the whole, greatly resembles that of our own ox. The first we saw and killed was on Shannon Island, in August, 1869. As we did not then know this animal we made the strangest guesses, comparing it to a gnu. Like the reindeer it lives on vegetable food, which is scanty enough here.

Scarcely anywhere in Greenland does the Flora suffice to change the face of the soil; at the utmost it only serves to shade it. Moss,

lichen, grayish-green grasses, ranunculus, saxifrage, &c., form meagre solitary patches amongst the weather-beaten stone heaps. Here and there the plains are covered with birch-bushes, a few inches high (the stems of which are often no thicker than a lucifer-match), also with bilberry-bushes, but more often with willows, creeping along the ground. Almost every species of the Flora of the plain, especially the garden poppy, did we find on mountains from 1625 to 3250 feet high. On the summit of a rock 7495 feet high grew—near the well-known black and yellow lichen, known everywhere in the European Alps as the last representative of vegetation—a long fibrous kind of moss. The greater summer warmth of the rocky interior of the country insures there a more varied flora. Former Esquimaux settlements, if only covering a few square fathoms, were at once recognisable from their light green colour, caused by constant manuring. Meadows, in our sense of the term, were nowhere to be seen.

How far north the musk-ox and the reindeer are found we can scarcely decide; the first we met with in  $77^{\circ}$  N. lat., and the last only in  $75^{\circ}$ . The scanty means of existence afforded by the soil compel them to constant wanderings. Both animals are almost always met with in herds, sometimes of from twenty to thirty head. The greatest number of reindeer we ever saw were between one hundred and two hundred head, on a hilly ground to the west of Cape Broer Ruys; and the greatest number of musk-oxen in the brown-coal district of Kuhn Island. To the former we gave battle. Their behaviour towards the hunter is in no way similar: the reindeer approaches him at a brisk trot, full of curiosity, to within a few steps—indeed, sometimes they come quite close to him; the musk-ox remains, as if rooted to the spot, staring at the strange, unknown enemy, and arrives very slowly at a resolution. At Cape Philip-Broke four of them most humbly condescended to play with Payer by pretending to carry off his portable table. Older animals stand fire most coolly, even after being wounded, and defend the most exposed part by putting down their heads, which is their invulnerable part. One of them once received a shot from a Wanzl-gun on his mailed forehead without showing the slightest annoyance—the ball fell a flattened disk on to the ground. If a family or a herd of young ones are surprised they either form a square (the young being in the centre, and the old outside with their heads down), or else the bull, placed as a sentinel, takes to

flight, and the others follow closely, the placing of their outposts being astonishing. They are also excellent climbers: a retreating herd climbed a snow-path at an incline of not less than  $45^{\circ}$  on a high mountain near our winter harbour, and to our great astonishment we saw one looking down upon us from between the craggy walls of Cape Hamburg.

At the first shot a herd of approaching reindeer will make a spring and then stand terrified; the next shot, or the fall of one of them, puts the rest to flight. It costs something thus to dispel their innocent confidence. Once a reindeer ran hurriedly over the land to a boat that was landing: it stood close to us on shore, with its head stretched out and its large soft eyes watching us confidingly. One of us sprang hastily on shore, and it ran off. On another occasion a number of them came close to the tent. But a scene took place, which many of our hunting friends would envy us, in a herd near Cape Bennet, in August, 1870. We had just left our boat, which we were going to load with seven carcasses which we had killed some days before and left behind; but unfortunately they had all turned bad, as we had neglected to open them. Suddenly there came from twenty to thirty head over the mountain-slope, and upon reaching a snow-field all lay down, enticed by the refreshing coolness and our own example, as we had just done the same thing. As, however, we started to continue our journey, the front guard of the reindeer rose to do the same; but it happened that one of them—evidently the leader—seemed displeased that the greater number took no notice of the movement, as they desired to have a little more rest, so it stopped the others, turned back, and went to each animal separately, pushing it with its horns, until they all stood up and began their march together to a new grazing-place. The flesh of the reindeer is good, though somewhat soft and spongy. It is plain that these creatures were very useful to us, and that without them we should often have been in a sad predicament. Unfortunately our furthest and most productive hunt took place shortly before we left Greenland, and over against the island of Jan Mayen. We had to throw more than a thousand pounds of reindeer and musk-oxen flesh overboard, as the rising of the temperature beyond the pack-ice, together with the damp, turned it all bad.

*Walrus*.—If any creature deserves the name of monster it is the walrus. It is from nine feet six inches to sixteen feet six inches

long, weighs about 20 cwt., and its skin is three inches and a half thick (a sort of massive coat of mail), with a head of infinite ugliness, rather large eyes, and tusks sometimes thirty inches long (of a sort of ivory), which helps the creature to obtain his food (chiefly mussels) from the bottom of the sea, and, together with the breast-fins, help him to climb on to the floating ice to a place of rest. Round his jaws are long cat-like bristles, as thick as a large darning-needle. Demoniacal as his appearance is, his voice is as bad—a jerking, imitative scream, lowing and puffing, often repeated, and in which it seems to delight. Walruses and seals, from their richness in train-oil, are highly estimated in the Arctic fishery, and are invaluable to the Esquimaux; indeed, in many cases when—either from the blocking up of the coast with ice or the retreating of the herd—they have been unable to catch any, they have almost died of hunger. One way the Esquimaux have of killing the seals is to approach them by degrees with a white screen, behind which they crouch; and another by lying in ambush amongst the ice, and harpooning them. One of the largest walruses that we saw was killed on the ice near Shannon, on the 27th of August, 1869, by Dr. Copeland: it measured nine feet eleven inches in length. The skin is particularly flexible and soft, and the leather we used for straps for the machinery. The time it remains under water depends upon the time the creature has had for preparation. If a walrus is suddenly hunted from his sleep into the water it must rise again immediately to the surface. Now it takes a deep breath. If it is again hunted it comes up again; if this is repeated five or six times the walrus then seems to be provided with a store, for now it dives in reality, and is seldom seen again.

Walrus-hunting is very dangerous, for in its fury this animal can break through ice six inches thick. If, therefore, it is not met with on strong old ice, it is necessary to change one's place very quickly, for (as is the case with all mammals) the walrus is obliged to come to the surface of cracks, or ice-holes, kept open for the purpose, in order to breathe every ten minutes. The animals notice exactly the direction and the distance of their enemy, and emerge at the spot to meet and destroy him. Returning from the sledge-journey from the Tiroler Fjord we had abundant opportunity of proving this. Contrasted with its ferocity in the water, there is nothing more innocent and harmless than a herd of walruses sunning themselves on an ice-floe or the shore, or indeed sleeping on the

water; but unfortunately the comparison with a torpedo (which, for fear of some accident, one dares not touch) is only too well founded. A single ice-floe often bears twenty and sometimes a much larger number of these creatures, their dark, sphinx-like bodies lying close together, the head, from their long tusks, leaning sideways or upon one another; and thus they sleep away the greater part of their existence in the sun, lulled by the rushing and roaring of the breakers. The walrus surprised on shore or on an ice-field is utterly helpless, and, although it strikes furiously on all sides with its tusks, is just as harmless as it is terrible when its anger is aroused in the water. One peculiarity, which under some circumstances may be very dangerous, is its great curiosity. Should one of these monsters see a boat it rears itself, astonished, above the surface, utters at once a cry of alarm, swimming towards it as quickly as possible. This call brings up others, awakens the sleepers, which the boat had carefully avoided, and in a short time the small vessel is followed by a number of these monsters, blustering in apparent or real fury in all their hideousness. The creatures may possibly be only actuated by curiosity, but their manner of showing it is unfortunately so ill chosen that one feels obliged to act on the defensive. The bellowing, jerking and diving herd is now but a short distance from the boat. The first shot strikes, and this inflames their wrath; and now begins a wild fight, in which some of the black sphinxes are struck with axes on the flappers, with which they threaten to overturn the boat. Others of the men defend themselves with a spear or with the blade of an oar. Often, from some unknown cause, these creatures turn suddenly from the fight, jerking and diving under water, and when at some distance turn their ugly heads to look back and fill the air with their vindictive grunts. In the summer of 1869 a boat excursion to Cape Wynn with difficulty escaped the destruction of their craft. Another time they were followed by a herd, and succeeded in reaching the shore of an island, where, though only for a short time, they were blockaded in. The longer you live in Arctic regions, the less can you persuade yourself to attack these creatures in their own element, unless forced by pressing circumstances,—*i. e.* want of either food or of oil,—and then it is advisable, if in boats, to provide oneself with cartridges. The most successful hunt is when these creatures are surprised on the ice-floes. When approaching very near them the oars are shipped and the boat noiselessly

landed. The hunters get upon the floe behind the creatures; but scarcely does one raise its head in contempt and anger than all the others wake up, and the whole herd press forward, pushing the young ones with them to the edge of the floe, where they tumble head foremost into the water. Only this short time is at the hunter's disposal, and his shots must be quick and true. Should one of the young ones be killed the mother carries it with her flappers, challenging her enemies to fight, with a fierce look. A walrus once killed is quickly made fast with a rope to the boat before it sinks. The weight of these creatures is so enormous that two of them which we had hoisted on to the same side of the deck gave it a decided inclination. We were obliged to eat seals as well as walrus, and that, too (more often than not), raw; their flesh has a strong flavour of train-oil; that of the latter is almost black, the liver a beautiful violet. Both creatures have the extraordinary habit of occasionally swallowing stones.

*Seal.*—The seal is from three to six feet long, perfectly harmless and defenceless. It is cautious and suspicious, and will dive for the slightest cause. Indeed, its apish face, with its peculiar expression of curiosity, is in and out of the water every minute. Seals live in herds: seal-hunters often find hundreds on one ice-floe. Whilst they sleep or sun themselves they set a watch, which being killed the whole herd may often be taken. A seal-hunt is carried on in different ways: the most successful is with clubs. Their skull is very weak. Our bullets had the effect of blowing them to pieces. The most fruitful ground for seal-hunting is the neighbourhood of Newfoundland and the lonely island of Jan Mayen, lying within the Arctic Circle. In southern latitudes they rarely appear. When dead they sink very quickly. To the Esquimaux the seal and walrus are of universal utility: they cut strips out of their skin, make dresses, finish their boats, cover the floors and walls of their snow-huts: their bones they use for the repair of their sledges and weapons; their fat as fuel, their flesh for food: in a word, wherever Esquimaux exist seal and walrus are eaten.

*Greenland Hare.*—The European hare is remarkable for its long and rapid hasty flight and its timidity; the Greenland hare, on the contrary, sits as if nailed down in its rocky refuge, however near the hunter may pass to him. Sometimes one sees the mountain-slopes dotted with white spots, which, from their motionlessness, might be taken for snow; but they are only white hares. They are about



the size of our own hares; but their flesh, like that of the Alpine hare, is insipid. Hare-hunting in Greenland often gives rise to the drollest scenes. Their hearing appears to be even weaker than their sight. Payer once stood near a hare which was startled by repeated firing, but had confined its flight to a few steps: the creature was nibbling the moss quietly. Payer took out his sketch-book, and drew it in all the different positions which, in its uneasiness at the conversation and laughter of his companions, it assumed.

*Wolf and Wolf-like Dog.*—The peculiar species of wolf met with in other Arctic neighbourhoods is not found in East Greenland, neither is the wolf-like dog, now dying out from disease, and upon which the existence of the Esquimaux in East Greenland is completely dependent. Brown, in his 'Fauna of Greenland,' believes that the dogs brought by Torell from Greenland to Spitzbergen in 1861, to work the sledges (a plan frustrated by the sea being found open), would increase rapidly and return to the original wolf type. They are also unknown in the North of Europe, and, like the ice-bear, fox and reindeer, are peculiar to the Arctic Circle.

*Arctic Birds.*—Interesting, too, is the more or less periodical return of a large number of birds which animate the Arctic world, some for only the summer weeks, and some for the whole year, such as ptarmigan and ravens (both of which remain through the winter); a number of screaming birds—most of which are species of gulls distinguished by their greediness—such as the auks, the divers, and, above all, the eider ducks. These cling like so many white spots to the clefted rock, screaming to each other or sitting in a circle on the edge of a floe. A short early ice-covering of the coast water, indicating the close of a fleeting summer, has many embarrassments for them; and soon the far greater part accept the signal for emigration to southern regions. The west coast of Greenland is much richer in birds than the east coast. Our share was therefore proportionately small. The flesh of Arctic birds has, doubtless owing to the nature of their food, a strong taste of train-oil.—'German Arctic Expedition' (vol. ii., p. 465).

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*Notes from Castle Eden.* By Mr. JOHN SCLATER.

(Continued from S. S. 4406.)

## JANUARY, 1875.

The first day of 1875, like the last of 1874, was a terrible day for the poor birds.

*Waterhen.*—One found dead in a cow-byre and another in a covered well: both birds appear to have been seeking shelter; they had fed regularly with the poultry for some time, but their stomachs contained only a small quantity of green pulp. It seems therefore that vegetable food is not sufficient to sustain life in these birds in continued severe weather, when frosts seal up their natural insect-food; for it would hardly be logical to return a verdict of "found starved to death in a warm cow-byre" in one instance, or "suicide by drowning" in the other.

*Redbreast.*—Of several that visit the house one is particularly interesting: he has quartered himself in the kitchen for the last six weeks, seldom leaving it, his favourite perch being the top of a delf-rack, where he sits exactly in the centre and will sing for hours together. The roaring of the kitchen fire seems quite to his taste, and more so the small cockroaches, of which he eats a great number, and so intent is he in pursuit of them as to run great risk of being trodden on.

*Blackheaded Gull.*—On the 5th I obtained a fine specimen on the beach. The plumage of this bird is identical with Yarrell's description of the masked gull in winter, but I cannot believe them to be distinct species.

*Redwing.*—Seven found dead on a ledge of clay overhung by grass at the side of a small stream.

*Goldeneye.*—On the 16th I obtained an adult female on the coast, shot from a flight of four.

17th. I heard a missel thrush singing; no song thrushes to be seen yet; starlings seem as happy as if they had known no storm; rooks at their nests as clamorous as possible. It is surprising what a change a few fine days has made in these poor creatures, which a fortnight ago were nearly starved to death.

*Dipper.*—On the 19th an adult female was shot and brought to me; the stomach contained the bones of a minnow and the elytra of a small beetle.

*Song Thrush*.—28th. I saw a single bird on the lawn, the first I have seen this year.

## FEBRUARY.

3rd. Saw two more song thrushes. By the 16th a good many had returned, but still less than our usual complement: the same may be said of the blackbirds.

*Razorbill*.—On the 20th I found several dead on the beach. Birds so picked up I always find poor in condition, with empty stomachs, and generally after stormy weather from the north-east; but the fact of this mortality amongst them so invariably taking place in or near the month of February rather goes to show that these birds are commonly, if not always, reduced to a very weak state at this time of year.

## MAY.

On the 12th I had a hurried run up the North Tyne, partly on foot, but mostly by rail, and therefore found but little to note.

*Blackheaded Gull*.—This species first took my attention. I found it straggling the whole distance—a few immature amongst them. Nothing ever pleased me more than the sight of these birds hawking the sprouting corn-fields, and the graceful and easy manner they alight to pick up a grub, their feet just touching the ground for a second and their wings remaining full spread upwards. I made inquiries but could not find any clue to their nesting up the river.

*Warblers*.—Near Hesleside I was brought to a halt at a thicket by the roadside, and compelled to sit down and listen to such a medley of song as I never before heard, the performers being the sedge warbler, blackcap, garden warbler, wood wren, willow wren, whitethroat, and the common wren (the latter only joining in at intervals, and was certainly heard above all); added to these was the song of the sky lark overhead; a chaffinch and his mate, I thought, would have been better out of the way. I could have spent the day with them, but I had set out at 6 A. M. on a glass of whiskey and milk only, and the thought of having to tramp nine or ten miles before I could breakfast caused me to move on.

*Sand Martin*.—Found nesting on the banks of the river in great abundance. Mr. Hancock must have been there when he wrote his curt notice of this species in his 'Catalogue of the Birds of

Northumberland and Durham'—*viz.*, "It breeds wherever there is a sandy declivity."

*Gray Wagtail.*—I saw two pairs and an odd bird (a male) at different places on the river: one of the pairs was flitting about amongst the sand martins. I also saw a pair of black-and-white wagtails; but whether they were the so-called pied or white species, if they are really distinct,—my humble opinion is that they are not,—I was not near enough to determine.

*Common Sandpiper.*—I saw a single pair on the river near Falstone.

I had not time to follow the course of the river, so I missed seeing the dipper and very probably other interesting species.

*Hen Harrier.*—On the 13th, walking from Melrose to Abbotsford, a female of this species crossed the road a few yards in front of me, and, after skimming across an adjoining field, alighted on a tree at the edge of a plantation. Five or six wood pigeons flew from the same tree in a rather confused manner on her approach. She made no attempt to strike any of them. It is to be hoped that this species still manages to breed in the district.

*Swift.*—On the 16th I observed the swift very common at Alnwick; a great number were wheeling round the top of the Castle. The swallow tribe seems to be unusually common this season.

*Summer Migrants.*—There appears to me to be an uncommonly uneven distribution of our most common migrants this year. On the 17th I walked from Alnwick to Warkworth, through fields and woods, some eight or ten miles perhaps, without hearing or seeing the wood wren, nor did I observe the chiffchaff, and there is no lack of lofty trees in the neighbourhood. On the other hand, I never before found the sedge warbler so abundant anywhere—scarcely a hedgerow without its pair or two; this latter I have not seen or heard at Castle Eden this season, where it is usually not uncommon, and the two former have appeared here in larger numbers than usual. The whitethroat and the garden warbler have come in about their usual numbers, but the blackcap is much less common, and I have not seen the wheatear nor whinchat this year, and the latter is usually very common here. The corn crake is commoner here this season than I have ever known it; the cuckoo has also appeared in greater numbers here: all, however, have arrived later than usual.

*Jackdaw*.—Standing on the ruins at Warkworth Castle I saw an encounter between a jackdaw and some ten or twelve blackbirds, old and young: after a great deal of buffeting on each side of the fence, the jackdaw settled down behind the fence out of sight, having succeeded in capturing one of the young: his attempts to accomplish this were possibly the cause of the disturbance. I believe it is a common thing for rooks, jays and jackdaws to kill young birds in continued dry weather, when there is a scarcity of worms. I could not go to the place, as the river ran deep between us. A farmer at Castle Eden told me that he saw, on the 2nd instant, a fight between a hare and a number of jackdaws on the top of a rock in the Dene, where great numbers of them nest. The hare was standing upright, striking at them with her fore feet, and screaming. The birds appeared to have something amongst them he could not clearly see, but he thought it was a young hare. I have no doubt it was.

## JUNE.

*Blue Tit*.—Having for some time observed a pair of blue tits flitting about and hanging to a rook's nest whenever I passed that way, I began to watch them more closely, and, concealing myself, I soon found they had a nest of young amongst the sticks of the rook's nest, near the bottom. There were three young rooks in the nest at the same time.

11th. There is now in a very secluded place in the Dene two pairs of stock doves, three pairs of kestrels, two pairs of starlings, five or six pairs of jackdaws, one pair of great tits, and two pairs of blue tits, all nesting in a rock within a space of about fifteen yards square. The stock doves have built under the roots of yews overhanging the top of the rock, and I may add that this is almost invariably the case here; only once have I found their nest low down, and in this instance it was at the root of an ivy against a rock about two feet from the water, and it is curious that a kestrel was rearing a brood of five on a ledge some twelve or thirteen feet above, and two blue tits had nests in the rock also at the same time. At the first-mentioned place I found the feathers of a stock dove that had evidently been killed by a hawk, but I do not think it was the kestrels—none of the birds mentioned seem to care the least for their presence; but it is very different with the blackbirds and thrushes that have collected in large numbers on the opposite hill-side, where they find more food during dry weather amongst

the brackens. Amongst them there is a continuous din of alarm from early morn till late at night; their young in such places become an easy prey to the kestrel.

*Kestrels at Eden Dene.*—You will be glad to hear that nine pairs of kestrels have reared their broods in the Dene this season, and I am not aware of more than four or five birds having fallen victims to the keeper's gun, for although they are protected I know that they are sometimes shot; but they never stay long about the Dene; they disperse for some time in the neighbourhood, and mostly disappear in the autumn, only a few birds remaining during the winter. But I wish to mention here that I have witnessed three instances of the kestrel (all adult males) arriving on the coast from the east. The most interesting of the three occurred on the 4th of October, 1871. I was sitting behind some rocks, at low water, trying to get a shot at some large gulls, when I observed a small hawk come off the sea from the east in a straight line towards me. I thought it looked too small for a kestrel; it hardly came within shot, but alighted on a rock. I walked towards it, and got within twenty yards, when it flew away. I then saw that it was a male kestrel, but still it seemed to me smaller and the plumage much brighter than is usual; it only flew a short distance, and again alighted on a rock on the sea banks. I again walked after it, and got nearly as close to it as before, when it again took wing, and I shot it. It was evident that the bird was either much fatigued or had come from some place where gunpowder is not so much used as it is in this part of the world. I was rather surprised when I got home and found it nothing short of the usual measurements; but the body, although in good condition, was smaller I think than is usual, the length of the bird being thirteen inches, of which the tail measured seven and a half inches. All the three that I have observed as landing from the sea were particularly bright and clear in their markings; at all events I am certain they were not bred in this dirty neighbourhood, and have but little doubt that they came from somewhere "o'er the sea." I know that this is at variance with what Mr. Harting, in his 'Handbook,' says,—*viz.*, that the kestrel "migrates to the east and south-east in autumn,"—and I am not forgetting the fact that they are generally all brighter or cleaner at this time of year after having moulted.

JOHN SCLATER.

Castle Eden, Durham.

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*Migration of Swallows and Martins.*

By Captain H. HADFIELD.

OBSERVATIONS carried on during the last ten years convince me that I was right in remarking, in December, 1865:—"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"—not October, as is generally supposed.

There are, it appears, three distinct migratory flights; the first about the middle of September, made up of both old birds and young, chiefly, I believe, from the northern counties and Scotland the nights being then cold and sometimes frosty; once on the move many cross the Channel, as was observed on the 15th of September last. The second flight, as is well known, takes place early in October. The third, or November flight, is that of the late broods, together with the old or parent birds, whose migration has been retarded by the care of their young. However, a solitary swallow or martin may, of a mild season, be met with in December; for instance, their occurrence here between the 1st and 10th of the month has been three or four times recorded in the 'Zoologist.' In order to prove that late broods cannot migrate with the rest, I have only to remark that I have found them in the nest as late as the end of September.

With regard to the migration of the swallow tribe in general, little dependence is to be placed upon the observations of casual observers, not one in twenty of whom know a swallow from a martin, and often mistake—as I have had occasion to point out—a starling for a swallow. Though we all know the swallow appears, in the South of England, the first or second week in April, and the martin a few days later, it does not follow that *I, you* or *they* see them *on their arrival*, as they generally come singly, or by twos and threes at the most. So the question resolves itself into this—Who is the best observer? For instance, I find, on referring to my notes for 1839, that no swallows were seen till the 21st of April; but I have no doubt they would have been met with several days sooner had I been on the look out.

Though I have heard of swallows being seen earlier, I never met with one before the 2nd of April or later than the 9th of

December. During the thirty years or more that I have paid attention to the autumnal migration of the Hirundines on this coast, their line of flight has invariably been to the east or south-east. It may be thought strange that those in the western counties do not take a more southerly course, crossing the Channel at once; but seemingly they prefer travelling overland, hawking by the way; besides the woody, hilly and undulating nature of the country passed over is a shelter and protection. Crossing the Strait from the Sussex coast, then by France, Switzerland, Italy, Sicily, Malta, and adjacent islands, they would arrive in Africa, having had little sea to pass over.

In support of the theory of a September migration, I now give a few extracts from my notes; but some years the final flight only is recorded in them, or the list of September migrations would no doubt have been longer. That there is a general move early in September on the Continent, too, I had pretty good proof this season, having observed both swallows and martins flocking together in great numbers, both in Switzerland and Italy.

#### EXTRACTS FROM NOTE-BOOKS.

- 1852, Sept. 10. There are to-day some hundreds of swallows congregating.  
 1853, Sept. 17. Observed hundreds of swallows assembling on the roofs of the houses.  
 1854, Sept. 7. There was a migratory flight.  
 1855, Sept. 10. Saw innumerable swallows and martins on the roofs and chimneys of the houses on the cliffs.  
 1863, Sept. 6. Swallows have commenced congregating on our coast.  
 1864, Aug. 29. A considerable flock of young swallows has appeared.  
 1865, Sept. 17. Innumerable swallows and a few martins seen in rapid flight to the eastward, against the wind.  
 1867, Sept. 19. Swallows seen in great numbers; I believe the migration has commenced.  
 1874, Sept. 13. From an early hour numerous swallows seen, the wind having veered to the east during the night.  
 1875, Sept. 15. Swallows met with at sea between Dieppe and Newhaven.

HENRY HADFIELD.

Ventnor, Isle of Wight, November 26, 1875.

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*Notes on some Fishes observed at Portrush, County Antrim.*

By J. DOUGLAS OGILBY, Esq.

HAVING had unusually good opportunities during the last four months for observing the fishes which frequent this part of our coast, I venture to send you a few short notes, chiefly referring to the more uncommon species, hoping, if these prove to be of interest, to supplement them, at some future time, by more extended observations.

*Tadpole Hake.* *Raniceps trifurcus* (*Walbaum*).—Perhaps the greatest rarity which I had the good fortune to obtain was a fine specimen, measuring eight inches and a half in total length, which was washed ashore here during the second week in November. The only other known Irish localities from whence this scarce fish has been recorded are—Donoghadee, County Down, as mentioned in Thompson's 'Natural History of Ireland' (vol. iv., p. 188); Dalkey Sound, where Sir Dominic Corrigan obtained it; and Dingle Bay, whence it was procured by that indefatigable ichthyologist, Mr. William Andrews.

*Gattoruginous Blenny.* *Blennius gattorugine*, *Bloch*.—This species, though usually considered rare on the Irish coast, is decidedly not so here, as I obtained several fine specimens, the largest measuring seven inches; all of these were taken in crab-pots laid on a rocky bottom, in water varying from ten to twelve fathoms depth. Examples up to five inches long retain the transverse bars mentioned by Yarrell as a sign of youth.

*Yarrell's Blenny.* *Blenniops arcanii* (*Walbaum*).—I obtained two specimens of this fish, both of which were taken in crab-pots along with the preceding. Hitherto it has only been known as Irish from Carrickfergus and Dalkey Sound, as mentioned by Thompson.

*Saury.* *Scomberesox saurus* (*Walbaum*).—Examples of this species are decidedly rare on our north coast, and I have only one specimen, which was cast ashore in a mutilated state during the last week of September. I am informed, however, by residents at Portrush that few years pass without some examples being obtained in this manner.

*Lesser Weever.* *Trachinus vipera*, *Cuv. & Val.*.—One specimen of this fish which I caught was of the very unusual size of six

inches and one-eighth, the common length about here being under four inches and a half. I have found this species to rise with avidity to a small white fly, towed after a boat over a sandy bottom in water about three and four feet in depth.

*Atherine.* *Atherina presbyter*, *Cuvier*.—Very common in the harbour of Portrush during the autumn months. It is locally known as "pincher," and is only caught by fishing with a small hook baited with a piece of the flesh of *Galeus canis*, that of every other dog-fish being refused.

*Basse.* *Labrax lupus* (*Lacépède*).—Certainly scarce in the North of Ireland. I obtained one specimen this year, the first I have ever seen from this coast, caught in a seine-net near Portstewart, County Down, and weighing ten pounds and a half.

*Sea Trout.* *Salmo trutta*, *Fleming*.—It is perhaps worth mentioning that I caught a fine example, three pounds weight, when reeling for pollack, with a sand-eel bait, in the open sea about two miles from the mainland, shortly after 2 A. M.

*Ocean Pipe-fish.* *Nerophis aquoreus* (*Linneus*).—Certainly the most common species, and I obtained several fine specimens, the two largest being each twenty inches long: all these were taken in what seemed to me to be a curious way; namely, in open net-work lobster-pots, where, though in no way detained by the meshes, they were invariably found clinging, with the end of their tail curled once or twice round the net-work, preferring to trust to this rather than swim away. I may mention that the figure of this fish given by Yarrell ('British Fishes,' vol. ii., p. 409) is far too deep in comparison to its length; that on page 414 is much better.

*Great Pipe-fish.* *Syngnathus acus*, *Linneus*.—I only caught one immature example in a shrimp-net, and suppose that its rarity is caused by the absence of the beds of *Zostera*, in which this species delights.

With regard to the flat-fishes, I mention all the species which I have observed on this coast; these, in addition to their excellence as food, being the most numerous and the most easily obtained.

*Holibut.* *Hippoglossus vulgaris*, *Fleming*.—Occasionally captured in winter on the cod-lines, baited either with *Buccinum undatum* or the flesh of various fishes, chiefly Labridæ.

*Turbot.* *Rhombus maximus* (*Linneus*).—Common, and runs to a large size, especially along the Magilligan Strand; and the same remark applies to the Brill, *Rhombus lævis* (*Linneus*).

*Plaice.* *Pleuronectes platessa*, *Linneus*.—Along with the next species, the most abundant of our flat-fishes. Examples of large size are often obtained, and I saw several this summer that turned the scale on ten pounds.

*Common Dab.* *Pleuronectes limanda*, *Linneus*.—Thompson states that this species is “not commonly known,” but the remark does not apply to this part of the coast, where the “gray back,” as it is locally called, is the most numerous kind brought up in the trawl, rarely, however, exceeding twelve inches.

*Lemon Dab.* *Pleuronectes microcephalus*, *Donovan*.—Cannot be considered uncommon, as several specimens may almost always be picked out of a night’s trawling. The largest example which I saw measured seventeen inches. It is a very light fish, a plaice of the same size weighing double. It is known on this coast as “bastard sole.”

*Flounder.* *Pleuronectes flesus*, *Linneus*.—Common; called here “fresh-water fluke.” Although no rivers run into the sea within five miles of Portrush, this fish is almost invariably caught close in shore, inside and beneath the breakers. The largest example weighed two pounds and three-quarters.

*Sole.* *Solea vulgaris*, *Quensel*.—Common. Very large specimens are occasionally taken, two which I saw this year being over four pounds and a half each.

In addition to the above-mentioned, I have reason to believe, from the description given to me by an intelligent fisherman, and from his picking out the figure of *Rhombus punctatus* (*Bloch*) in Yarrell (vol. i., p. 646), that this fish has occurred in the harbour of Portrush: the same man has told me of a mackerel (!) which was caught here several years ago, and weighed eight pounds: no doubt some species of bonito.

A few words, in conclusion, about the names under which the coal-fish (*Gadus virens*, *Linn.*) is known on this coast: it is called by different names, according to its age; the fry, which, as is well known, are spawned early in spring, rove in vast shoals along the shore during the autumn, by which time they measure from four to seven inches, and are known as “cadan” (pronounced *cudden*); next spring they are called “ceithnach” (pronounced *catenach*), which is perhaps a mere expansion of the former name, since the termination “ach” signifies *like*; in the following autumn, when weighing about two pounds, they are known as “glasán”

(pronounced *glashin*), in allusion to their green colour; a year later they are called "two-year-old glasan;" and from thenceforward are entitled to the full name of "gray lord," which is employed for the adult fish of from eight to twenty-five pounds. For this last term I have failed to find any meaning, and should be glad if any of your readers could inform me. It is a strange thing that the pollack (*Gadus pollachius*, Linn.), though quite as abundant a species here, has no names peculiar to its different ages, but is universally known as "lythe," whether young or adult.

The Latin names which I have employed are taken from Dr. Günther's British Museum Catalogue, and the rarer specimens above mentioned are now in the collection of the Royal Dublin Society.

J. DOUGLAS OGILBY.

36, Elgin Road, Dublin.

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**Balæonoptera musculus at Lynn.**—A whale of this species was found floating dead in the Channel near the Knock Buoy, in the Lynn Roads, on the 9th of August last. The men brought it on shore at the back of the stone-banks about two miles below Lynn. When found it was in an advanced state of decomposition, and must have been long dead: it measured forty-two feet in length. The carcase was purchased by a manure company, and I believe cut up before any competent authority had examined it; but some of the remains were afterwards examined by Mr. Clark, of Cambridge, who found it to be a young specimen of *B. musculus*, and secured a section of the skull for the Cambridge Museum. Whence come these dead and more or less decomposed fin-whales which are from time to time stranded on our shores? Perhaps the following may throw some light upon the subject:—On board a Vadsö and Hamburgh steamer last summer, the captain told me that a certain Herr S. Foyn established, eight or nine years ago, at Vadsö, a fishery for this species. From its active habits and the velocity with which this whale rushes through the water when harpooned, it is difficult and dangerous in the extreme to take in the ordinary way, and at first Mr. Foyn met with small success; of late years, however, he has perfected his mode of attack and kills thirty or forty each season. He found the ordinary harpoon of little use, for the reasons above given, and now makes use of a detonating shell, which kills the whale instantly, and it is seldom that one escapes. When secured they are towed into Vadsö, where they are drawn up an inclined "slip" by a winch, and there stripped of their blubber; the carcase is made into manure and the blubber refined on the spot. In the summer of 1874 they killed thirty-five whales,

and this summer when my informant left Vassö, about the middle of July, they had already killed thirty-two, and expected to take several others before the season finished. The captain added that it was not a very paying business, but that Mr. Foyn was a very charitable gentleman and wished to find employment for the people. I think it very probable that the majority of the fin-whales which have been stranded of late years on the British coast may have been wounded in this fishery, and after death borne south by wind and currents to our shores. It would be interesting if any of your correspondents could give further particulars as to the way in which this fishery is carried on, and the precise mode of attack and weapons used.—*T. Southwell; Norwich, December 10, 1875.*

**Seal at Holbeton.**—The following is from the 'Western Morning News' of October 30th:—"On Tuesday last, whilst Mr. Revell, jun., of Keaton Farm, Holbeton, was walking on the cliffs, he perceived something unusual moving on the sands. Having his gun with him he at once took aim and shot it in the head. On coming up to his prize he found it to be a seal, measuring in length about three feet and a half, and weighing thirty-three pounds and a half. He conveyed it home, and subsequently it has been exhibited at Holbeton and Ivybridge, the majority of the people having never seen a seal before in the neighbourhood." The seal was of the common species, *Phoca vitulina*.—*John Gatcombe; 8, Lower Durnford Street, Stonehouse, Plymouth.*

**Migration of Birds.**—In the 'Zoologist' for 1874 (S. S. 3834) appeared a communication from me on the appearance and stay of the martins and swallows at Looe in the month of November, 1873. Any one turning to it and comparing it with the comments made on it by Capt. Hadfield in the 'Zoologist' for December (S. S. 4717) will see that he has mistaken, misunderstood and misquoted it: he mistakes it by attributing the Editor's query to me; he misunderstands it so far as to apply it to general migration, whilst I only refer to the month of November; and he commits—to put it mildly—the great error of omitting portions of a sentence in one case and adding in another, so as to make the sentences suitable to his views. Having done this he proceeds to answer my supposed query in the following words:—"They were doubtless late broods; but it was not the 'cold wind,' as he seems to suppose, that had kept them from migrating, but want of power in these young birds to take so long a flight." However little I may know about the migration of birds, I certainly know that the cold wind of November could have no effect on the migration of the preceding month, and I can still as easily "entertain the idea" that it was the cold east wind that delayed them here for twelve days in November during a continuance of such a wind, leaving us immediately on a change of wind to the N.W., as I can believe that they were young birds, which

appeared to be in a state of semi-starvation during the whole time, and which were delaying their already-commenced migration for the purpose of regaining "power to take so long a flight." The "wind-bound" theory, in the sense Captain Hadfield applies it, is his own: I had not the least idea that the *force* of the wind alone prevented the swallows pursuing their migration for twelve days, but that the peculiar cold which accompanies an easterly wind at that season, and has such a numbing and depressing effect both on man and beast when exposed to its influence, was the cause; and I still think that my theory, when applied to my communication, is equally as tenable as Capt. Hadfield's. May it not be that the same instinct which teaches migrants that when the wind "veers to the east or north-east," in October, a general move is necessary, teaches those which were compelled to remain until November that when the wind veers to east in that month, attended by cold, it is necessary they should delay their migration until a more genial wind prevails? I must confess I can see nothing to prevent such a supposition. Judging from Capt. Hadfield's paper, I think his thirty years' experience, although it may have enabled him to get rid of Gilbert White's mud theory, still leaves him in a sad muddle as to the causes of the migration of birds.—*Stephen Clogg; Looe.*

**Sea Birds at Flamborough.**—October 12th.—Two Richardson's skuas, both birds of the year, were killed by Mr. Bailey to-day off Flamborough Head. They are now in my collection, and present a great contrast, one being a very dark, and the other a very light-coloured specimen. There are still a few miniature terns about the coast. 22nd.—I was at Flamborough to-day, and walked along the cliffs to Filey. There were very few birds to be seen. I observed one large hawk near the Flamborough Lighthouse, which was apparently a female hen harrier. In the course of my walk I put up a quantity of blackbirds from the ledges on the cliffs, which I think were newly-arrived migrants from the north, as they were very unwilling to take wing, and when disturbed soon settled again. There were a few fieldfares with them, and one bird which—from its note—must have been a ring ouzel. 28th.—Mr. Bailey sent me a mature gammet from Flamborough to-day, which had been driven ashore by stress of weather; both the wings were broken close to the body—I suppose from contact with the rocks. November 6th.—I received to-day two little gulls, in the flesh,—one an adult, the other immature,—which Mr. Bailey had shot south of Flamborough Head: the whole plumage of the immature bird was suffused with an exquisite salmon-coloured tinge, which was most conspicuous on the breast. 9th.—When at Filey to-day I obtained two little auks from Mr. Brown, which had just been brought in from Filey Brigg. A green-shank was shot on the Brigg on the 6th. I observed a curious-looking bird on a shelf in Mr. Brown's shop, which he kindly brought down for my inspection; it was a variety of the razorbill, a first year's bird, which had the parts of the plumage which are usually black of a fawn-colour; the

under parts white, as usual. I walked on to Scarborough, and observed a few herring gulls and curlews, with a number of rock pipits; I think I also saw one little gull. 23rd.—Mr. Brown sent me to-day a splendid mature glaucous gull, killed off the coast near Filey; it is in most perfect plumage. We had a tremendous gale from the north on the 19th and 20th, which probably brought it down to this coast.—*Julian G. Tuck; Old Vicarage, Ibberston, York.*

**Hawks in North Devon.**—Being in North Devon for a day's snipe-shooting on the 15th of November, I had the fortune to see the following birds:—Two peregrine falcons, a common buzzard, two hen harriers, and a gray phalarope. Gray phalaropes have been numerous in the south-western district this autumn, and instances have come to my knowledge of their having been picked up far inland. The peregrines mentioned above were amusing themselves when seen by practising swoops at each other with much wild screaming. We found our snipe-ground drowned, so that the sight of the various birds I have enumerated was some compensation for the absence of sport.—*Murray A. Mathew; Bishop's Lydeard, Nov. 18, 1875.*

**Jugger Falcon.**—In reply to the note by Mr. Gurney, jun., in the 'Zoologist' for December (S. S. 4721) respecting the buzzard previously referred to in the 'Zoologist,' I regret that I did not contradict the assertion there made (S. S. 597), though so far as "buzzard" was concerned no great amount of harm could arise. The bird was sent to the Zoological Society's Gardens, as Mr. Gurney observes, in July, 1868, having been in my possession since November, 1867, and was then pronounced to be a Jugger falcon. The man of whom I obtained it had some motive for concealing from me the source from whence it came, and I was therefore told the story of its capture related in the 'Zoologist' (S. S. 597). Mr. Blyth felt confident that there was some mistake, and that it had not reached these shores on its own-accord. This led me to make further enquiry, resulting in *satisfactory* information of its having been brought to England in a ship coming from the Mediterranean Sea, which information I forwarded to the Zoological Society (the only parties knowing it as a Jugger falcon who had been misinformed by me), and which I then considered sufficient contradiction. Mr. Gurney knew of this at the time.—*William Jeffery; Ratham, Chichester.*

**Osprey in County Waterford.**—An osprey was shot on the south coast of Ireland, near the village of Dunmore, County Waterford, at the latter end of September. It appeared to be following the fish, of which there were great numbers in the harbour.—*Ernest Jacob. ('Field,' October 23, 1875.)*

**Osprey near Birmingham.**—An osprey was shot on the 25th of October, while fishing on Witton Pool, where it had been observed, and repeatedly fired at, for some days previously. This specimen, which I have now in process of preservation, is a nearly mature female, measuring two feet in length, five feet five inches in expanse of wing, and weighs three pounds five ounces and a half.—*Montagu Browne. (Id., November 6, 1875.)*

**Peregrine Falcon, Great Northern Diver and Wild Geese near Merton Hall, Norfolk.**—While attending to Lord Walsingham's museum at Merton Hall, one of the keepers brought me, on the 4th of November, a fine peregrine falcon which had been caught in a trap; it was a male bird, and in fine plumage. A great northern diver was shot on the 7th of November on Thompson's Lake, where from the 1st to the 16th I saw wild geese feeding in hundreds. In the morning the geese would leave the lake, flying over the Hall, sometimes hundreds in a flock, to Wretham Mere. I have never seen so many together in England before. When in California with his lordship on a Natural History expedition I have seen large flocks of these birds, but nothing equal to the numbers that I saw in Norfolk.—*Thomas Eedle; 40, Goldsmith's Row, Hackney Road, London.*

**Kite, Hen Harrier and Hobby in Nottinghamshire.**—During the first week in November a very fine specimen of the kite was shot by Mr. Charlton's keeper at Chilwell; it was a female and in very beautiful plumage. This hawk, which is now very rare in England, has only occurred on two or three occasions in this county. A hen harrier was shot near the Trent Bridge in November; it was a female, and in good plumage. I have seen a male of this species about here all the summer, but never could hear if they had nested. In July last I shot a female hobby: it was about 9 P. M. and quite dusk. The bird was flying about a pond when I first saw it: I quite thought it was a nightjar: it was most probably feeding on bats, great numbers of which were constantly flying over the pond during the summer evenings.—*J. Whitaker; Rainworth Lodge, Mansfield.*

**Roughlegged Buzzard in Yorkshire.**—A specimen of the roughlegged buzzard was shot at Kirklevington, near Yarm, on the 26th of October, and is now at Mr. Ward's, the naturalist, for preservation. This bird, with its mate, has been seen about here for the last month. I send you this information, as it is a bird not often seen in England.—*W. Richardson. ('Field' of November 6, 1875.)*

**Curious Capture of a Buzzard.**—A few days ago I heard from a game-keeper that a large "kite" had been trapped on a farm in this neighbourhood, and was being kept alive for me; so this afternoon I called at the place, when it proved to be—as I fully expected it would—only a common buzzard. It had been taken in a gin set at the mouth of a rabbit-burrow in a thick hedge, which seems to be rather a queer place for a buzzard, unless it was chasing the rabbit from the outside, and was captured as it dashed down after it. It is a young bird of the year, and its leg but little injured, although its beauty has been sadly spoilt by the unfortunate manner in which both wings have been clipped.—*Gervase F. Mathew; H.M.S. 'Britannia,' Dartmouth, December 4, 1875.*

**Marsh Harrier at Slapton Ley.**—A male bird of the marsh harrier, in the second year's plumage, was shot by a keeper at Slapton Ley, on



Monday, November 1st, while in the act of taking a coot. It is the only specimen I have ever known to occur in this neighbourhood.—*R. P. Nicholls; Kingsbridge.*

**Montagu's Harrier near York.**—By the inclosed report of a meeting of the York Field Naturalists' Society, you will see that a specimen of Montagu's harrier, shot lately near York, was exhibited. There is no mistake.—*J. S. Wesley; Wetherby. ('Field,' October 23.)*

**Great Gray Shrike at Fulham.**—I have recently received a fine male specimen of the great gray shrike (*Lanius Excubitor*), which was shot at Fulham.—*Thomas Eedle.*

**Chiffchaff in December.**—I saw a chiffchaff this morning in a garden here busily searching for insects under the leaves of *Euonymus japonica*. I was at the time standing at a window, the bird not being more than a yard distant from me.—*J. Jenner Weir; Lewes, Sussex, December 6, 1875.*

**The Coal Titmouse of the Continent.**—Will the discriminating readers of the 'Zoologist,' more particularly those who are resident in the East, oblige me by looking out for the coal titmouse of the Continent (*Parus ater* of Linneus). Messrs. Sharpe and Dresser have made a species of our insular form under the name of *P. britannicus*. The chief distinctions are that in *P. ater* the back is "a clear slaty-blue," while in *P. britannicus* it is "grayish, with a strong wash of yellowish olive." Only two or three specimens have been recognised as British at present, but no doubt when the distinctions are known others will turn up. Prof. Newton throws some doubt on its value as a good species ('British Birds,' i. 492), but it is—to say the least of it—as deserving of specific rank as the whiteheaded longtailed titmouse (*Acredula caudata* (Linn.) and the northern marsh tit (*P. borealis*, De Selys-Longchamps, Acad. R. de Bruxelles, vol. x., No. vii., p. 5), which have no lack of supporters at home and abroad.—*J. H. Gurney, jun.*

**The Blackcap's Head in Winter.**—Mr. Wharton asks any of your readers who have wintered in the same countries as the blackcap to let him know their experience as to the retention or not of the black head. I was in Algeria in February, 1870, and I found this charming warbler very abundant. I remember counting as many as thirteen one day on one tree, but I never found any males with red heads, though I was aware of Canon Tristram's having met with them in Palestine, and took particular pains in dissecting all I shot. I cannot agree with the Editor of "Yarrell," when he says the blackcap is a bird of passage in Algeria, for I have not the least doubt that it is in the Atlas all the winter. The date when I saw thirteen on one tree was long before the migratory tide had set in, and I feel no doubt that those birds had been there all through December and January. I shot a specimen at El Ateuf, a Mزاب town, some four hundred miles into the Sahara.—*J. H. Gurney, jun.*

P.S.—Mr. Wharton will find that the sundry records of blackcaps seen and shot in this country (chiefly in Ireland) in the winter, for the most part mention the examples to be blackheaded.—*J. H. G., jun.*

**Black Redstart near Loddswell.**—A male black redstart, in full plumage, was procured near Loddswell on the 8th of November, and its mate was with it: others have been seen in the neighbourhood.—*R. P. Nicholls.*

**Black Redstart at East Looe, Cornwall.**—Black redstarts have been very numerous this year—I have seen as many as four in a short walk; they were frequently to be seen on the houses and in the streets of Looe, busily feeding, in November. I had at one time in the scope of my binocular two redstarts, one white wagtail, one gray wagtail, two Yarrell's wagtails and a stonechat. All the redstarts I have seen this year have been in gray plumage.—*Stephen Clogg.*

**Waxwings without Wax** (S. S. 4723).—In reference to a notice upon this subject by Mr. Gurney, jun., I offer the following remarks. In upwards of ninety skins sent to me from Lapland, collected by poor Wheelwright's collectors, I selected seven with the following characteristics:—One has the smallest possible vestige of a red wax appendage; six have very small drops, from one to three. In these seven birds the yellow markings and cross band of white in the primaries are wanting. Each secondary is, however, tipped with white; and the white feathers to which the red wax ought to be appended are there, but smaller than usual; the yellow at the tip of the tail is also paler. Of the seven specimens four were killed in January, one in March, one in February, and one is without label. Only one of the specimens is dressed, and that is a female. The rest of the skins are also properly defined. These birds contrast much with the fine, pale-plumaged birds, with their seven or eight drops of wax, and full brilliant yellow colour. What is the cause I will not venture to suggest. The birds do not show any appearance of general moulting, and it is certainly not sexual. I suppose they are ill-developed waifs in the waxwing community. The appearance of wax is certainly very irregular, as seen when a large number of specimens are together, varying from eight spots to one.—*C. R. Bree; Colchester.*

**Shore Lark in Holy Island.**—Two shore larks were noticed on Holy Island, about fifty miles north of Newcastle-on-Tyne, on the 13th of October last, by Mr. Isaac Clark, of Blaydon, one of which he shot, and it is now in my collection along with two others which I obtained from Mr. Thomas Robson, of Swalwell, in whose memorandum-book I see one of the latter (a female) was purchased for one shilling and sixpence in Newcastle Market on the 28th of June, 1851, of a birdcatcher, who had it in a cage with a number of sky larks caught on the banks of the Tyne; it, however, died on the 22nd of October, in the same year.—*Thomas Thompson; Newcastle-on-Tyne, November 20, 1875.*

**Nesting of the Hawfinch at Beverley.**—Last May I had brought to me two sets of eggs of the hawfinch, taken the same day in one of our commons called Westwood. The lads who had taken them were at a loss to find out to what birds they belonged: indeed I myself mistook them for the eggs of the common bunting, until they told me where they had been taken and the situation of the nests. I need scarcely say I was somewhat astonished at the discovery of the hawfinch's eggs so near the town, not having previously heard of an instance of the hawfinch breeding in this district; but there was no mistake, as one of the nests had been left in the white-thorn bush just as they had found it, and I went and examined it myself to make certain. After telling the lads never to take eggs unless they saw the old bird on the nest and properly identified it, I gave a good exchange of other eggs and took possession of the hawfinch's eggs. I have been informed that a hawfinch's nest containing four young ones was taken in a wood a few miles from Sheffield the summer before last (1874) and the young ones reared.—*F. Boyes; Beverley.*

**Macqueen's Bustard. Caution!**—Let me give a word of caution about a supposed British-killed Macqueen's bustard, which has found its way into Norfolk, duly labelled and handsomely cased, which, if not noticed and corrected now, is sure in a few years to pass current as a genuine "Britisher," like many other birds which I could name, on the strength of a ticket. I saw the specimen in question last Tuesday at the house of Mr. Gunn, and instantly recollected that I had seen it before, *viz.* at the Argyll Street Auction Rooms in London, in 1871, where it was sold as—"Lot 689. A Macqueen's Bustard, shot at Harwich in 1823, and preserved by Hall, of Finsbury Square." I then "spotted" it as being the same one which was in Martin Barry's catalogue, where, to give an air of probability, we have the additional information that it was "obtained in company with the little bustard," *i.e.* the specimen formerly Mr. Yarrell's, and knew that if it came out of that collection its authenticity was simply worthless. Several severe criticisms on the Barry catalogues—which are supposed to have been compiled from his note-books after his death—will be found in the 'Ibis' for 1863. They contain all sorts of unheard-of rarities, which I will not give further publicity to; but any who wish to read them will find several of the grossest at p. 477 of the 'Ibis' for 1863.—*J. H. Gurney, jun.*

**Spotted Gallinule near Kingsbridge.**—On Wednesday, November 3rd, a male specimen of the spotted gallinule was killed near Kingsbridge.—*R. P. Nicholls.*

**Cranes near Inverness.**—On the 6th of November four cranes appeared in a field on the banks of the Nairn at Inverernie, about nine miles from Inverness. Two were shot by Mr. Hill's party on the 8th, the other two remaining in the neighbourhood till the 11th, when they appeared to leave

for the west. Mr. Edwin Ward, of Wigmore Street, to whom I forwarded these birds for preservation, says that one of them is a fine mature male specimen: the other a young female.—*R. S. Hills.* (*Field*, December 4.)

**Black Stork at Lydd, in Kent.**—You may be glad of a few corrections concerning the black stork shot at Lydd, in Kent, in May, 1856 (*Zool.* 5160 and *S. S.* 2643.) It was killed by Mr. Wellstead, at Fairfield Brae (not Fairfield Brae), and was stuffed by Mr. Jell (not Gell). It is in the collection of Mr. Clifton Simmons. It was originally bought for sixpence; and afterwards I am told thirty pounds was offered and refused for it. For these particulars I am indebted to Mr. Jell, the excellent taxidermist.—*J. H. Gurney, jun.*

**Curious Capture of a Scoter Duck.**—On the 26th of November, 1875, being a stormy day, a man was walking on the beach at Trimmingham, Norfolk, about 9 A. M., and the tide being low he saw a female scoter feeding between two lumps of clay which had been uncovered by the fall of the tide. He crept up to it, and the lumps of clay apparently having prevented the duck from observing him, he caught it in his hand before it could take flight. The bird was apparently unwounded, but probably somewhat exhausted by stormy weather; its captor clipped one wing, and fed it on soaked bread. He brought it to me alive eight days after he caught it, when it appeared to be in good health, and he then gave me the above account of its capture.—*J. H. Gurney; Northrepps, Norwich, December 4, 1875.*

**Bartailed Godwit.**—I shot one of these birds this afternoon on the mud-flats opposite Dittisham. It was by itself, and in good condition, so it is strange what it was doing in this country so long after the departure of its companions.—*Gervase P. Mathew; December 4, 1875.*

**Avocet in Ireland.**—I have the pleasure of recording the visit of a pair of that very rare visitant to Ireland, the avocet, to the Moy Estuary this winter. I first had the good fortune of meeting them on the 28th of October, when I was returning from wigeon-shooting down the river; they were feeding in the shallow water on the sands, along with some green-shanks, and I at first took them for an albino variety of that bird, as the difference in size was not at first apparent in the evening light until I got a closer view of them, which their tameness enabled me to obtain, as they permitted me to bring my punt within almost fifteen yards of where they were feeding. They appeared to feed by passing the bill with a side movement through the water, apparently scraping or sweeping the bottom, with the convexity of the bill; and the swinging movement of the body and neck from side to side, when feeding, looks so very odd and peculiar that it at once attracts the attention of the observer, even if the curiously marked black and white plumage did not do so. Next morning I again met them as they were resting at high water on the strand, under one of the fields here, but they shortly after left the strand, and flew about two hundred

yards farther off, and, as I thought, pitched in the shallow water near where the bank was just appearing at the first of ebb, but on going round to watch them again I was surprised to see that they had *swam* away about fifty yards from where they had first alighted, and while I continued watching them, for nearly half an hour, they kept swimming head to wind, and rising on the little waves as buoyantly as ducks, thus proving that they could make right good use of their half-webbed feet, although Montagu says that they have never been observed to take to the water for the purpose of swimming, and that the palmated feet seem only intended to support them on the mud. The avocet (according to William Thompson) appears to be of very rare occurrence in Ireland: he mentions only nine birds having been met with from the year 1767, when the first Irish known specimen was shot by Mr. Bevin in the lotts near the North Wall, Dublin, up to January, 1848, when a pair were shot by Mr. William Crauford, of Lakelands, in Cork Harbour, and which birds are now, I believe, in the very fine collection of Irish birds of Dr. Harvey, of St. Patrick's Place, Cork.—*Robert Warren, jun.*; *Moyview, Ballina, November 16, 1875.*

**Avocet and Pectoral Sandpiper in Durham.**—In his 'Birds of Northumberland and Durham,' Mr. Hancock says of the avocet, "only one taken" (p. 124). It has, however, occurred at Tees-mouth twice or three times. A birdstuffer and shooter at Stockton, who knows it perfectly, told me that he once saw one shot, but could not induce the man—who was, I have no doubt, a pitman on very high wages—to part with it for money. The fellow preferred to eat it, and gave him the legs to remember it by. Many a rarity is consigned to the spit through ignorance, but in this case it was wilful waste of a rare bird. Mr. Hancock also only gives one occurrence of the pectoral sandpiper; but I can refer to two other instances—one near Hartlepool in October, 1841 (Yarrell, 'British Birds,' 1st ed., Preface), and one in or near the Tees-mouth, August, 1853 (Morris's 'Naturalist,' 1853, p. 275). Probably they were both really killed at Tees-mouth, which is very near West Hartlepool, and which at low tide presents a wide expanse of mud, formerly (before Middlesborough sprung into existence) more attractive to waders than it is now. The existence of Mr. Hancock's work may perhaps not be generally known to your readers. It is by far the most complete catalogue which has yet appeared on the birds of the North of England; yet I have seen no reviews of it, and it was only on entering Quarritch's shop the other day that I accidentally learnt of its existence.—*J. H. Gurney, jun.*

**Ducks and Partridges laying in the same Nest.**—A friend of mine found a French partridge's nest with fourteen eggs and three tame duck's eggs in it, which is an interesting parallel to the French partridge's and teal's eggs being found together, which Mr. Stevenson wrote to you of (S. S. 2869). In the former it was probably the partridge which had laid to the

duck's—in the latter, the duck which had laid to the partridge's.—*J. H. Gurney, jun.*

**Reported Occurrence of the King Duck at Maldon.**—A fine specimen of the female king duck was shot on the River Blackwater, at Maldon, on the 28th of October, and is now in the hands of a naturalist for preservation.—*Richard Poole.* ('*Field*,' November 6.)

**Longtailed Duck at Hunstanton.**—A longtailed duck (*Harelda glacialis*) was shot by me on the Hunstanton marshes on the 27th of October.—*Charles F. A. Bagot; Castle Rising.* (*Id.*)

**Information Wanted about the Worcestershire Tropic-bird.**—Among the 409 species in the Introduction to Gould's 'Birds of Great Britain,' I see no mention of the tropic-bird. In the 'Zoologist' for 1871 two supposed occurrences are treated of (S. S. 2666, 2725), and with regard to the former of the two my father when at Worcester obtained a few additional particulars from the curator of the Museum, who informed him that it was a red-tailed tropic-bird; that it was stuffed by an animal-painter and bird-stuffer named Pitman (now deceased) for a gentleman whose name he could not remember, who brought it after it was mounted to the Museum, intending to present it to the collection (in a work published in 1856 it is erroneously stated to be in the Museum), but meeting Mr. Walcot there he gave it to him instead; that Mr. Walcot lent it with other stuffed birds to the Museum for exhibition, but after a time took them all back to his own house, where they remained until about thirteen or fourteen years ago, when his entire collection was sold to a gentleman at Pennoch's Court, near Worcester; that about 1867 this gentleman's birds also shared the same fate, being disposed of in lots by Mr. Matthews, auctioneer, and that the tropic-bird was one of them, but what became of it nobody now knows. There is the chance that this note may fall under the eye of some one who can give the desired information. Phaëton æthericus has occurred at Heligoland Island ('*Naumania*,' 1851, part ii., p. 16), as kindly pointed out to me by Prof. Newton, and in Norway (Degland and Gerbe's *Ornith. Europ.*, ii., p. 363). I doubt I am not giving the original references, but it is sufficient to show that there is some plausibility for considering that it may be a genuine straggler to England. Probably, on the above authority, Dr. Bree inserts it in his list of doubtful species at the end of the 'Birds of Europe.' Likewise Blasius and Dubois have admitted it into their respective catalogues. The Worcestershire specimen would seem to have been *P. rubricaudus*, *Bodl.*, but not the Lancashire one. If anyone knows what has become of it we may ascertain which it was. I think it is more likely to have been *P. æthericus*, and under that name it is given by Mr. Lees, in his interesting article on the "Birds of the Malvern District" (*l. c.*).—*J. H. Gurney, jun.*

**Black Tern in Durham.**—Mr. J. Selater (S. S. 3439) records a black

tern in Durham, and mentions its being the first of the species he had met with. There is no doubt that it is very scarce in the county, and I am sorry I have not sooner informed you that I obtained a young one at Tees-mouth in 1867; and in August, 1868, I saw three which had just been shot about four miles from the town of Darlington: they were also quite young. But it occasionally occurs in the adult state. Mr. Green, taxidermist, at Stockton, showed me two old ones; and another shot in June, 1850, at Bishop Auckland, is recorded in the 'Zoologist' (Zool. 3036) by Mr. Duff. No mention is made of it either in Hogg's 'Catalogue' (Zool. 1187) or in a list of the "Birds found in the Neighbourhood of Darlington," contributed by the late Mr. William Backhouse to Longstaffe's 'Darlington: its Annals and Characteristics;' but Mr. Backhouse appears to have procured two from Tees-mouth (Zool. 1262).—*J. H. Gurney, jun.*

**On Adams' Diver** (*Colymbus Adamsi*) in England.—Prof. Newton, in his article, reprinted in the 'Zoologist' for September (S. S. 4607), says that Adams' diver has been met with in Europe. In the 'Proceedings of the Zoological Society' for 1859 (p. 206) will be found remarks by Dr. Sclater on the exhibition of a specimen killed in England.—*Id.*

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**Abundance of Mackerel in Mount's Bay.**—I omitted to record at the time that in August and September last Mount's Bay was full of mackerel and scad (horse mackerel), which continued on the shore for over a fortnight. At high-water time they could be baled up in buckets at our pier-head here. This sort of thing happens about once in every eight or ten years. This is the third time it has occurred within my recollection, which covers over twenty-seven years. The remarkable feature of the visitation this time was the occurrence with the mackerel of whitebait. I had very many specimens, and I tested them scientifically as well as gastronomically, and I have no doubt they were genuine whitebait, but I gathered from them nothing to help me to a conclusion one way or the other that they were the young of herrings. About the same time a large quantity of whitebait were taken in St. Ives Bay.—*Thomas Cornish; Penzance, December 13, 1875.*

**Red Band-fish at Plymouth.**—A beautiful specimen of the red band-fish (*Cepola rubescens*) was caught in the harbour on the 16th of November last, and was kept alive for many hours.—*John Gatcombe; December 14, 1875.*

**Heavy Salmon.**—The 'Field' of November 6th records the weight of several salmon taken during the preceding week. In the Tweed Mr. Pryer killed eleven fish, weighing together 200 lbs.—the heaviest weighed 25 lbs. and the others close on 20 lbs. each; the Duke of Roxburgh two, 30 lbs. and 20 lbs. respectively; Mr. St. Paul two, of 25 lbs. and 22 lbs. respectively; Mr. Malcolm one of 30 lbs.; Mr. Denison one of 24 lbs. In the North of Scotland, Mr. John Milner took three fish, weighing 24 lbs., 23 lbs. and 21 lbs.; Major

Forbes one of 24 lbs.; Captain Leith Hay one of 24 lbs. and one of 22 lbs.; Dr. Forbes three, of 26 lbs., 24 lbs. and 23 lbs.; Major Norie two, of 25 lbs. and 22 lbs.; Mr. Hunter two, of 27 lbs. and 21 lbs.; Captain Burnett two, of 24 lbs. each; Mr. Littlejohn one of 28 lbs.; and a vast number of fish weighing at least 20 lbs. each.

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**Helix pomatia.**—I notice in the 'Zoologist' for November last (S. S. 4705) a reply of Mr. J. E. Harting to an observation made by the Editor upon the colour of *Helix pomatia*. I have not seen the plate in Mr. Harting's book; but this I know, that a white *Helix pomatia* is comparatively uncommon. The typical colouring of the shell is yellow or yellowish white, brown-banded, the latter colour generally being more or less diffused over the shell, in some cases giving it a deep brown colour. I have had hundreds of the species in my possession at various times, and out of the whole number have met with but two white—or rather, I ought to say, whitish—shells: these I labelled in my cabinet "albida," thinking that Dr. Gwyn Jeffreys' description of that variety—"shell whitish or colourless" (Brit. Con., vol. i., p. 177)—was a sufficient warranty for my so doing; but a friend of mine, an experienced conchologist, who saw them, took exception to the name, thinking them not white enough. I have twenty shells of the typical colour in my collection, from five counties, none of which have any pretensions to whiteness. As this species is not uncommon on the chalk, it is probable that in many instances where the shells occur they become, by the action of the chalk, denuded of their epidermis, as is the case with *Helix aspersa* and *H. nemoralis* in the same situations; the outer layers of the shell then, being exposed to the action of the elements, would become white, as a "dead" shell, and somewhat like "a lump of chalk." As the couplet from 'Hudibras' quoted by the Editor would seem to imply that he is not convinced of the correctness of Mr. Harting's statement as to colour, I send specimens of *Helix pomatia*, showing the grades of colour and markings common to the species, and think they will prove that he is correct.—*G. Sherrij-Tye; Handsworth.*

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## Proceedings of Scientific Societies.

### ZOOLOGICAL SOCIETY OF LONDON.

November 16, 1875.—OSBERT SALVIN, Esq., F.R.S., in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of October, and called particular



attention to a Scolopaceous Courlan (*Aramus scolopaceus*) from South America, purchased 6th October, 1875, and a Binturong, presented by Captain A. R. Ord, October 19th.

Mr. Sclater exhibited the upper horn of a two-horned Rhinoceros that had been shot in March last by Lieut.-Colonel C. Napier Sturt, in the Valley of the Brahmapootra. Mr. Sclater remarked that this seemed to prove conclusively the existence of a two-horned species of Rhinoceros in Assam, which would probably turn out to be the same as that from Chittagong, now living in the Society's Gardens.

Mr. Sclater read an extract from a letter addressed to him by Dr. N. Funck, Director of the Zoological Gardens, Cologne, stating that the bird figured in Mr. Sclater's recent article on the Curassows as *Pauxi galeata*, *var. rubra*, was the true female of *Pauxi galeata*.

Mr. H. Seebohm exhibited and made remarks on a series of rare and interesting birds and eggs from the tundras and deltas of the Petchora River, North-Eastern Russia, collected there by Mr. J. A. Harvie Brown and himself during the present year.

Mr. A. H. Garrod read some notes on the Manatee (*Manatus americana*) recently living in the Society's Gardens.

Dr. Günther read a third Report on the Collections of Indian reptiles obtained by the British Museum, and gave descriptions of several species new to Science.

A communication was read from Mr. E. Pierson Ramsay, containing a list of birds met with in North-Eastern Queensland, chiefly at Rockingham Bay. A second communication from Mr. Ramsay gave a description of the eggs and young of *Rallina tricolor*, from Rockingham Bay, Queensland. A third communication from Mr. Ramsay contained the description of a new species of *Pœcilodryis*, and a new genus and species of Bower Bird, proposed to be called *Scenopœus dentirostris*, from Queensland.

A communication was read from Mr. Sylvanus Hanley, containing the description of a new *Cyclophorus* and a new *Ampullaria*, from Burmah.

A communication was read from Dr. J. S. Bowerbank, containing further observations on *Alcyonellum speciosum*, *Quoy et G.*, and *Hyalonema mirabile*, *Gray*.

Mr. Arthur G. Butler read a paper on a collection of butterflies from the New Hebrides and Loyalty Islands, and gave descriptions of some new species. A second paper by Mr. Butler contained particulars of a small collection of butterflies from Fiji. Mr. Butler also read the descriptions of several new species of *Sphingidæ*.

A communication was read from Mr. W. H. Hudson, containing remarks on herons, with a notice of a curious instinct of *Ardetta involucris*.

A communication was read from Dr. Otto Finsch, in which he gave the description of a new species of Crowned Pigeon from the southern end

of New Guinea, opposite Yule Island: Dr. Finsch proposed to call this bird *Goura Scheepmakeri*, after Mr. C. Scheepmaker, of Soerabaya, who had transmitted a living specimen of it to the Zoological Gardens, Amsterdam.

*December 7, 1875.*—GEORGE BUSK, F.R.S., Vice-President, in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of November, and called particular attention to a female Beisa Antelope from Eastern Africa, presented by the Sultan of Zanzibar, and received November 8th, 1875; also to two all-green Tanagers from Brazil, purchased 16th November, 1875, which were new to the collection.

Mr. Sclater read an extract from a letter addressed to him by Mr. H. A. Wickham, on the occurrence of the large blue Hyacinth Macaw near Santarem, on the River Amazons.

Mr. Sclater exhibited and made remarks on a skin of *Hypocolius ampelinus*, *Bp.*, obtained by Mr. W. T. Blanford, in Upper Scinde, to the west of Shikarpur.

Professor Owen read the twenty-second part of his series of memoirs on *Dinornis*. This part contained a restoration of the skeleton of *Dinornis maximus*.

Mr. J. W. Clark read a paper on the Eared Seals of the Islands of St. Paul and Amsterdam, to which he added a description of the Fur Seal of New Zealand from specimens kindly furnished by Dr. Hector. Mr. Clark further read copious extracts from the narratives of the older explorers in these seas, and attempted to reconcile the notices given by them with the subsequent descriptions of naturalists.

A communication was read from the Rev. R. Boog Watson on the generic peculiarities of the distinctively Madeiran *Achatinas* of Lowe.

A communication was read from Dr. Hermann Burmeister, Director of the National Museum, Buenos Ayres, containing the description of a new species of *Dolichotis*, which Dr. Burmeister proposed to call *Dolichotis salinicola*.

Mr. W. T. Blanford communicated particulars respecting some large stags' horns, obtained by the Expedition to Western Turkestan, to which the late Dr. Stoliczka was attached as naturalist, said to have been brought originally from the Thian Shan Mountains. These horns were of very large size, each measuring fifty-one inches in length round the curve. Mr. Blanford, considering that these horns clearly showed the existence of a species hitherto undescribed, gave a full description of them, and proposed to give the name of *Cervus eustephanus* to the animal to which they belong.

Dr. O. Finsch communicated some notes on *Phœnicomanes Iora*, *Sharpe*, and *Abrornis atricapilla*, *Blyth*, and pointed out that the first-named bird is

identical with *Iora Lafresnayeii* of Malacca, while *Abrornis atricapilla*, said to be from China, is in fact a *Myiodiocytes pusillus*, *Wilson*, a well-known North-American bird. A second communication from Dr. Finsch contained the description of a bird from the Arfak Mountains, New Guinea, which appeared to form a new genus and species: this Dr. Finsch proposed to call *Pristorhamphus Versteri*. A third communication from Dr. Finsch gave the characters of six new Polynesian birds in the Museum Godeffroy at Hamburg.

A communication from Mr. J. Caldwell contained some notes on the Zoology of the Island of Rodriguez.

Dr. E. Von Martens communicated a list of the land and freshwater shells collected by Mr. Osbert Salvin in Guatemala in 1873-74.—*P. L. Sclater*.

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#### ENTOMOLOGICAL SOCIETY OF LONDON.

December 1, 1875.—SIR SIDNEY SMITH SAUNDERS, C.M.G., President, in the chair.

#### *Donations to the Library.*

The following donations were announced, and thanks voted to the donors:—‘*Mémoires de la Société de Physique et d’Histoire Naturelles de Genève*,’ tome xxiv., première partie; presented by the Society. ‘*Bulletin de la Société Impériale des Naturalistes de Moscou*, 1875,’ No. 1; by the Society. ‘*Bullettino della Società Entomologica Italiana*,’ vol. vii., trimes. 3; by the Society. ‘*Bulletin de la Société d’Histoire Naturelle de Toulouse*,’ vol. ix., fasc. 2; by the Society. ‘*Verhandlungen des Vereins für Naturwissenschaftliche Unterhaltung zu Hamburg*, 1871—74;’ by the Society. ‘*Proceedings of the Linnean Society*,’ Session 1874—75; ‘*Additions to the Library of the Linnean Society*, 1874—75;’ by the Society. ‘*Journal of the Royal Agricultural Society of England*,’ vol. xi., pt. 2, no. 12; by the Society. ‘*A Collection of the Arachnological Writings of Nicholas Marcellus Hentz*,’ edited by Edward Burgess; by the Boston Society of Natural History. ‘*Mémoire sur les premiers états de l’Hépiale Louvette (*Hepialus lupulinus*)*,’ par Xavier Raspail; by the Author. ‘*Nouvelles Recherches tendant à établir que le prétendu Crustacé décrit par Latreille sous le nom de Prosopistoma est un véritable insecte de la tribu des Ephémérines par le Professeur N. Joly*,’ by the Author. ‘*Catálogo de los Insectos Chilenos por Don E. C. Reed*,’ by the Author. ‘*L’Abeille*,’ tome xii., livraison 16; by the Editor. ‘*Newman’s Entomologist*’ for December; by the Editor. ‘*Entomologist’s Monthly Magazine*’ for December; by the Editors. ‘*The Zoologist*’ for December; by the Editor. ‘*The Canadian Entomologist*,’ no. 10; by the Editor. ‘*Transactions of the Watford Natural History*

Society and Hertfordshire Field Club,' vol. i., part 2; by the Society. 'The Naturalist: Journal of the West Riding Consolidated Naturalists' Society,' no. 5; by the Society. 'Petites Nouvelles Entomologiques,' no. 136; by the Editor. 'La possibilité de la Naturalisation de la *Leptinotarsa decélineata*, examinée au point de vue de la concurrence vitale,' par A. Preudhomme de Borse;' by the Author.

*Election of Subscriber.*

Thomas Chapman, Esq., of Buchanan Street, Glasgow, was balloted for and elected a Subscriber to the Society.

*Exhibitions, &c.*

Mr. W. A. Forbes exhibited a variety of the Burnet Moth (*Zygæna Filipendulæ*), with yellow (instead of red) spots, of which he had bred several from larvæ taken near Winchester. They were bred with others of the ordinary colour; but he believed that the variety was natural and not caused by extraneous circumstances.

Mr. G. C. Champion exhibited specimens of *Anisotoma oblonga*, Er., taken by him near Farnham, and *A. curta*, Fairm., from Esher, Surrey. The latter was new to the British list. Also *A. Algirica*, a new species taken by Mr. Rippon in Algiers. They had all been described by Mr. Rye in the 'Entomologist's Monthly Magazine' for this month.

Mr. William Cole exhibited carefully-executed drawings of the pupæ of a species apparently belonging to the Dipterous genus *Ephydra*, which he had taken clinging to the stems of grass below high-water mark near Southend. The water whence it was taken was brackish. He also exhibited the larvæ and perfect insects in spirits.

The President stated, with reference to the numerous parasites found on *Osmia tridentata*, that M. Jules Lichtenstein, of Montpellier, had recently obtained the *Zonitis præusta* from the cells of this bee; and likewise the *Euchælius vetusta*, Duf., from its desiccated adult larvæ, in the same way that *Halticella Osmicida* effects its metamorphosis, thus making the thirteenth parasite recorded as affecting this *Osmia*.

*Paper read.*

The description of a new Coleopterous insect was communicated by Professor Burmeister, of Buenos Ayres, who had named it *Obadius insignis*, in honour of Professor Westwood, on his attaining the age of seventy years, on the 22nd December, 1875.

*New Part of 'Transactions.'*

The third Part of the 'Transactions' for 1875 was on the table.—*F. G.*

*Ornithological Notes from Norfolk.\**

By H. STEVENSON, Esq., F.L.S.

(Continued from Zool. S. S. 4635.)

## JULY, 1875.

*Golden Plover.*—A small flock was seen at Northrepps towards the end of this month.

*Common Wren.*—A nest of this bird, with young, was found on the 14th at Northrepps, built, like the nest of a goldcrest, on the end of a low bough of a silver fir.

*Hooded Crow.*—A single bird seen at Trimmingham on the 12th, and one on the 27th. Had not improbably remained through the summer.

## AUGUST.

*Migratory Waders.*—Heard redshanks and other *Tringæ* whistling over the city, for the first time this autumn, on the 5th, about 12 P. M.; the night very dark with a drizzling rain. Again on the 28th, at 9.30 P. M.; the night very dark, with rain, and the wind N.N.E.: I heard several curlews over the city and a "murmuration" of small *Tringæ*, with the whistling of redshanks at times. On the following night, with a bright starlight sky, single curlews seemed to be passing at intervals between 8 and 9 P. M.

*Late Nest of Song Thrush.*—Young thrushes, scarcely able to fly, were being fed in my garden on the 18th by the old birds, being, I believe, the third brood of this year. A pair of blackbirds had reared their third brood by the last week in July.

*Fulmar Petrel and Redthroated Diver.*—A fine specimen of this petrel was shot at Burnham Overy about the middle of the month, and a redthroated diver shortly before, at the same place.

*Stone Curlew.*—A flock of at least thirty of these birds were flushed this autumn from a turnip-field at West Harling, and I hear favourable accounts of their increase, of late, in other parts of the county.

*Waterhen.*—An adult waterhen, killed by a dog at Northrepps on the 28th, had so completely moulted the quill-feathers of both wings as to be quite unable to fly.

\* I am indebted to Mr. J. H. Gurney for the notes of occurrences at Northrepps and other places on that part of our coast.—H. S.

*Curlew Sandpiper.*—A single specimen was shot at Cley on the 31st.

SEPTEMBER.

*Stone Curlew.*—Two young birds, still unable to fly, were found at Kelling, near Holt, and on the 9th a flock of about thirty were seen at the same place.

*Snipe.*—A jack snipe was shot at Felbrigg on the 6th, and about twenty full snipe were flushed the next day on Beeston bog.

*Swift.*—A single bird was seen at Blakeney on the 8th.

*House Martins.*—On the 7th, about 10 A. M., I observed a flock of over a hundred of these birds settling on the lofty roof of a chapel close to the city, which, after a time, dispersed all at once, not a bird remaining; and as only a straggler or two occurred afterwards in that locality, I presume they had collected together preparatory to migration. About the same time a similar gathering, but on a much larger scale, was observed by a friend of mine, at mid-day, at East Harling. Hundreds of house martins settled in rows upon the telegraph-wires which pass through the main street, and by their numbers attracted general notice. Each wire was lined with a compact mass of birds, sitting shoulder to shoulder, all with their heads one way, their tails forming a straight line below the wire, and others arriving and hovering over the first arrivals, fluttered on to either end of the line and "closed up" like soldiers on parade. When scared by the crack of a whip or other noise in the street, they rose in a dense mass, flying round for some minutes, then simultaneously commenced settling on the wires, as before, dropping one by one into their places with the most perfect order, and this continued for some time till they disappeared altogether from the neighbourhood. Young birds were being fed in the nest at Northrepps on the 27th.

*Great Snipe.*—Several of these birds were shot in different parts of the county in the early part of the month.

*Marsh Harrier.*—A specimen with the yellow head, and much of the same colour on the shoulders, was shot near Yarmouth on the 12th.

*Ring Ouzel.*—First seen at Northrepps on the 12th, and again on the 15th.

*Partridge perching.*—An unusual occurrence was witnessed at Sheringham on the 14th, when an English partridge was flushed, like a "redleg," from off a fir tree.

*Snow Bunting*.—First seen at Blakeney on the 15th.

*Waders*.—A small flock of ruffs seen at Blakeney on the 15th, and one shot. On the 28th a little stint and a purple sandpiper were killed at the same place.

*Hooded Crow*.—First seen at Northrepps on the 27th.

*Spotted Rail*.—One shot at Horning about the middle of the month.

#### OCTOBER.

*Summer Migrants*.—A turtle dove seen at Northrepps on the 1st, and a swallow at Keswick on the 30th. Two immature redstarts were also seen at Northrepps on the 16th, and a nightjar was killed at Aldborough on the 2nd.

*Autumn Migrants*.—Several large flocks of sky larks were observed, on the 9th, passing to the N.W., between Sheringham and Blakeney. Fieldfares first seen at Northrepps on the 13th. First woodcock seen at Northrepps and one at Beeston on the 14th; on the same date a gray wild goose, a shorteared owl and a ring ouzel were seen at Northrepps.

*Roughlegged Buzzard*.—One shot at Hemblington on the 23rd, and one near Yarmouth shortly before.

*Spotted Rail*.—One sent to Norwich to be stuffed on the 14th.

*Merlin*.—One seen at Northrepps on the 17th, and an adult male shot at Beeston on the 23rd.

*Great Gray Shrike*.—An apparently immature bird shot at Hunstanton on the 16th, and one at Yarmouth about the same time.

*Common Buzzard*.—A buzzard was seen at Northrepps on the 25th, mobbed by rooks; and on the 26th another was trapped at Rackheath, near Norwich.

*Eagle*.—One seen at Northrepps on the 27th.

*Harrier*.—A hen or Montagu's harrier, in female plumage, was seen at Trimingham on the 27th.

*Shore Larks*.—Four shot at Yarmouth about the middle of the month.

*Little Gulls*.—Three little gulls killed at Yarmouth.

*Bewick's Swan*.—One adult and one immature shot at Yarmouth.

*Sandwich Tern*.—A single specimen shot near Yarmouth about the second week in October.

*Purple Heron*.—A young bird of this species, as recorded by Lord Kimberley in 'Land and Water' of October 23rd, was shot

in a field on his estate at Hingham, near Kimberley, just prior to the 15th.

*Longtailed Duck.*—A single bird shot in the marshes at Hunstanton on the 27th: sex or age I could not ascertain.

*Osprey.*—A bird which had been seen a day or two before at Burston, near Diss, was shot on the 25th at Redgrave Hall, in the adjoining county.

#### NOVEMBER.

*Eagles.*—Two eagles were seen at Herringfleet, on the 1st, mobbed by rooks, which caused them to ascend spirally till they were almost lost in the clouds. About the 12th an eagle was seen at Sheringham, and a young sea eagle was shot at Holkham on the 18th, and another at Burgh St. Peter on the 27th.

*Woodcocks.*—Fifteen couples were shot at Sheringham on the 5th, and a good many have been met with near the coast at Yarmouth.

*Rooks migratory?*—A large increase of rooks (apparently migratory), accompanied by great numbers of jackdaws, were observed both at Northrepps and Sheringham on the 7th. A white rook, which had been seen about Sheringham for two years, was observed to be persecuted, at this time, whenever it attempted to feed, probably by the migratory rooks and it soon after disappeared.

*Nightjar.*—One shot at Hickling on the 6th—unusually late for this species.

*Great Northern Diver.*—One was shot on the 7th on the mere at Thompson, near Watton.

*Gray Shrike.*—One shot at Thorpe, near Norwich, on the 12th.

*Purple Sandpiper.*—A specimen sent up from Yarmouth on the 13th.

*Wild-fowl, Snipe, &c.*—The heavy and continuous rains early in the month, which flooded all the low-lying parts of the county, particularly in the "broad" district and the "fens" about Brandon and Lakenheath,—where, from the fen banks giving way, thousands of acres were laid under water,—drove many snipe, plover, and other marsh birds on to the uplands, whilst the greater part, no doubt, quitted the county. Fowl in large numbers, I am told, frequented the shallow waters, but were unapproachable by the gunners, and at Surlingham over a hundred duck and mallard were observed in one flock, but the Norwich market, at least,



showed no signs of their abundance. Large flocks of peewits appeared close to the city, and many gulls frequented the shallow waters on the surrounding meadows.

*Rednecked Phalarope*.—A specimen of this now rare species was shot on Hingham Mere.

*Peregrine*.—An immature female was shot at Rackheath early in the month, and an old male was trapped at Thompson on the 4th.

*Merlins*.—Two immature birds, killed in this county, were sent to Norwich to be stuffed about the middle of the month.

*Shore Larks*.—Two shot at Yarmouth on the 6th, and others seen with snow buntings.

*Glaucous Gull*.—An immature bird shot at Yarmouth about the 25th.

*Common Buzzard*.—One seen at Roughton, mobbed by rooks, on the 9th, and another at Cromer on the 12th, possibly the same.

*Gray Phalarope*.—A specimen, in full winter plumage, was shot at Beeston on the 24th.

*Wood Pigeon*.—Large flocks were observed at Northrepps, passing to the S.W., on the 15th.

*House Martin*.—A single house martin was seen at Keswick on the 20th, and two were observed at Thorpe, near Norwich, on the 23rd.

*Little Auk*.—One picked up dead on the Kimberley estate on the 30th.

*Harriers*.—Three hen or Montagu's harriers, in female plumage, were seen at the same time at Trimmingham about the 22nd. Another, also in brown plumage, was seen at Northrepps on the 26th.

#### DECEMBER.

*Winter Migrants*.—The unusually deep snow in the first week of December, from twelve to fourteen inches on the level, seemed—in the absence of any really severe frost—to have but little effect upon the feathered tribe. No starving redwings and fieldfares crowded into our city gardens, as last year, and my *Pyracanthus* berries remain in all their beauty, whilst the abundant crop of berries on the holly this winter was left untouched for Christmas decorations.

*Glaucous Gull*.—Another immature bird killed at Yarmouth.

*Goosander*.—A fine old male shot at Yarmouth.

*Wild Geese and Swans.*—A flock of twenty-four gray wild geese were seen flying low at Northrepps and forty-three wild swans at Weybourne, on the 4th.

*Hawfinch.*—A hawfinch was caught in an unbaited steel rat-trap, which had been set on the ground for a rat, in a garden at Keswick.

*Bean Goose.*—On the 18th a wild goose of this species was shot out of a flock of four at Runton, near Cromer.

*Magpies.*—On the morning of the 24th seven magpies were seen at Sheringham, six being in one flock and the seventh in an adjoining field. So scarce has this species become of late years as a resident in this game-preserving county that there is little doubt these were recent arrivals on that part of the coast, but from whatever quarter they may have visited us, as migrants, this is not the first time I have heard of as many being seen between Sheringham and Weyborne.

*Eagle.*—On the 31st a fine eagle, mobbed by rooks, was observed, at no great height, passing over the garden at Northrepps Hall, and created much stir amongst the poultry.

HENRY STEVENSON.

Norwich, December 28, 1875.

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*Ornithological Notes from North Lincolnshire.*

By JOHN CORDEAUX, Esq.

(Continued from S. S. 4710).

NOVEMBER AND DECEMBER, 1875.

*Great Gray Shrike.*—The great gray shrike, a female, in immature plumage, was shot at Spurn Point about the end of the last week in October, by E. Wheldrake, of that place.

*Snow Bunting.*—November 8th. First flight of snow buntings—all immature. More on the 10th, with several old birds.

*Shorteared Owl.*—November 10th. Heavy rain on previous night from N.W. First shorteared owl seen.

*Goldcrested Wren.*—Mr. Bailey, of Flamborough, informs me that hundreds of these little birds were seen on the headland in October; also that during the first week in November many flocks of lapwings, larks and snow buntings came in from the east—the sea. He further remarks that north-east winds with fogs are always

the most favourable conditions for large arrivals of migrants on the headland.

*Dipper*.—Two have been shot during the autumn on small streams near this place; both belong to the English form (*Cinclus aquaticus*, Bechstein), having the lower part of the breast chestnut-brown.

*Bartailed Godwit*.—Godwits have been extremely abundant on our coast during the autumn and up to the close of the year. A blacktailed godwit, a female, was shot at Spurn during the autumn. It is the only occurrence of this species which has come under my notice at this season, during a period of twenty years.

*Purple Sandpiper*.—December 7th. Shot an example this morning from the foot of the Humber embankment in this parish. They are rarely met with within the river, although common enough at Spurn and along the coast in the fall.

*Scaup and Goldeneye Duck*.—The young of both sexes have been extremely abundant on the river. Old females, both scaup and goldeneye, much less commonly met with; rarer still is the old male scaup. I have not, this season, met with a single example of the old male goldeneye. In the dusk of evening we not unfrequently hear goldeneyes passing over this place on their way to some inland feeding-grounds: they return to the river before daylight in the morning.

*Bullfinch*.—Perhaps the most marked ornithological feature, during the last two months, has been the great abundance of these beautiful birds. We find them in almost every garden, and hear their plaintive note from each hedgerow and copse: they are certainly far in excess of our local residents, and appear slightly larger and more richly coloured than local birds.

*Snipe*.—Were abundant early in December, during the frost and snow, in all their usual haunts. On the night of the 9th of December there was a thaw, and on the 8th, on walking over ground where on the previous day they were numerous, I only succeeded in killing three full snipe and two jacks. There is no bird more sensitive to changes of the weather than the snipe—one day in certain localities most abundant, the next all are gone. In this case our snipe had not gone far, or left the district, and since the breaking up of the frost till this time have always been found during the day amongst turnips, or rather congregated in the moistest and softest places in the turnip-fields, rising very wildly

and in wisps. I have even flushed and shot both the common and jack snipe on the high wolds in turnip-fields, on stony and perfectly dry layer. We frequently hear snipe in the evening at dusk passing to and fro, when they leave the high land turnip-fields and go to the marsh drains and ponds to feed, returning without fail to cover during the day. With the first sharp frosts we are sure to find them permanently settled at all their usual aquatic haunts.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,  
January 4, 1876.

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*A few Ornithological Notes from Guernsey.*

By CECIL SMITH, Esq., F.L.S.

As I have been making a short stay in Guernsey, from the 5th to the 23rd of November, I send you a few notes on the birds, though my experiences were not very interesting. The weather the whole time was excessively rough, gale after gale of wind varying from S.E. to W. and N.W., and I think in consequence of these gales birds—especially shore birds—were unusually scarce, for I found few but turnstones and ringed dotterels (which were numerous), a few flocks of curlews and one large flock of oystercatchers. As, however, several birds were obtained in the islands whilst I was there, all but two of which I saw in the flesh, I think it may be worth while shortly to mention them.

*Peregrine Falcon.*—A peregrine, a young bird of the year, was killed in Alderney a few days before I arrived.

*Merlin.*—Two merlins, both young, were shot in the Vale, and I saw a third near Cobo.

*Shorteared Owl.*—The rough weather seems to have brought an unusual number of shorteared owls, as several were brought in to Mr. Couch, the birdstuffer, whilst I was there.

*Tithys Redstart.*—I saw several pair of tithys redstarts, in the same sort of places as those I saw last time. (See 'Zoologist' for 1872.)

*Snow Bunting.*—There were a few small flocks of snow buntings, and one, a young bird, which had been killed by a boy with a catapult, was brought in to Mr. Couch.

*Nightjar.*—On the 12th a nightjar was brought to Mr. Couch.

Though this was a late date for the nightjar, this bird had lived well, for its stomach was completely crammed with black beetles—not our common domestic nuisance, but small flying black beetles.

*Gray Plover.*—One freshly-killed gray plover was hanging up in the market, but I did not get a shot at one, or even see one alive.

*Gray Phalarope.*—Several gray phalaropes were killed. All except one, the skin of which I kept, were in the ordinary autumn plumage, but this one, I suppose, had assumed perfect winter plumage, as the entire back was a regular gray, without one single dark or margined feather left.

*Rednecked Grebe.*—Several rednecked grebes were shot, and two or three were brought to Mr. Couch. The rednecked seemed to be the common grebe here this autumn.

*Slavonian Grebe.*—Only one Slavonian grebe was killed, as far as I could find out, and I saw another fishing as close to the wall of the north arm of the harbour as it cleverly could get, as the wall afforded some protection from the gale that was then blowing.

*Shag.*—The rough weather drove a good many shags inside the harbour, where they remained diving and fishing all day.

*Arctic Tern.*—A young arctic tern was killed somewhere near the harbour just about the time I got there. I kept the skin, as it is not very common in Guernsey.

*Fulmar Petrel.*—On Sunday, the 14th, during a tremendous gale, I picked up a fulmar petrel dead on the shore near Cobo. This seems to be almost a new bird in Guernsey, as it is not mentioned in Professor Ansted's list, nor is there a specimen in the Museum; but I do not think much of this, as neither are very reliable. Since he has been in the island Mr. Couch has never had one through his hands, still the bird must have occurred occasionally under similar circumstances.

*The Birds in the Museum.*—Since I wrote some notes from Guernsey in the 'Zoologist' for 1872, I am glad to say the Museum has been a little attended to by one of your correspondents from that island. The local birds have been got together; those that can be proved to have been killed in or near the island are distinguished by a different coloured label. This, I am informed, has been rather a troublesome work, as the trustees and persons officially connected with the Museum seem to have shown the usual amount

of official obstructiveness. I am glad, however, that many of the birds have been saved from the destruction that seemed at one time to threaten them. The other collections, especially that of local shells, are being put into a little better order; and there are rumours that when the new Market-place, now building, is finished, a proper room or rooms will be provided for the Museum, and that the trustees intend to bestir themselves, and have the whole of the collections in the Museum properly arranged.

*Are Guernsey Birds British?*—A question arose some time ago in the 'Zoologist,' which was discussed in several numbers, Are Guernsey birds British? A good deal was said as to geographical position, proximity to the coast of France, the probability of fraudulent dealers picking up foreign skins and selling them at high prices, and other matters, but I do not remember that much was said as to the birds themselves; so perhaps, though I do not wish again to raise the discussion, you will allow me to say a few words as to the birds themselves, and these seem to me to be essentially British. In fact, I have always found much the same birds, and in the same average numbers, as on the south coast of Devon. Tithys redstart, snow bunting, goosander, redbreasted merganser, grebes, &c., seem to make their appearance much about the same time and in much the same numbers. Occasional stragglers, such as hoopoes, golden orioles and rosecoloured pastors certainly do not appear more frequently or stay longer than in the South of England. Motacilla lugubris, and not M. alba, is the common wagtail, though I have no doubt the latter is to be found. The only bird I have found rather more common than on the Devon coast is the Kentish plover, but it is by no means more common than in other parts of the English coast. By-the-bye, I have always considered this bird only a summer visitant to the islands, and probably breeding there, as I shot a pair in Guernsey on the 2nd of July, and saw others in Alderney about the same time; but I have never shot or seen one in my autumnal visits about November, yet I see Mr. Harvie Brown mentions having seen them at Herm in January feeding with the ring dotterel: he does not appear, however, to have shot one. Some other birds, such as the slender-billed curlew, marsh sandpiper, Nyroca pochard, and others mentioned by Degland and Gerbe as more or less regular visitants to Normandy and Picardy, and other parts of the North of France are either not found at all or are extremely rare in Guernsey and the

neighbouring islands: they may possibly occur in Jersey, but I have had no shooting experience in that island.

CECIL SMITH.

Bishop's Lydeard, near Taunton,  
January, 1876.

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*Ornithological Notes from Devonshire and Cornwall.*

By J. GATCOMBE, Esq.

(Continued from Zool. S. S. 7919.)

NOVEMBER, 1875.

3rd. There was an immature black redstart, apparently just arrived, flitting about this morning among the cabbages in a small garden inside a fort at the Devil's Point, Stonehouse. Weather mild and the wind south, but it had been blowing and raining hard during the previous night. This species often frequents gardens in the vicinity of the coast.

11th. A fine northern diver was killed to-day off Millbay, which was still in nearly full summer plumage, a few gray and white feathers only appearing about the head and throat, the back, shoulders and wings being beautifully spotted with white. I have known one in this state of plumage as late as the middle of December. Purple sandpipers seem to have arrived in numbers during the past month: I saw some feeding on the rocks at the Point this morning, and many have been shot. Another black redstart has also made its appearance.

15th. This morning I saw three more black redstarts on the coast in the neighbourhood of Plymouth.

16th. There was a large northern diver, in the immature or winter plumage, off the Devil's Point, and on the 17th another was killed in the Sound, and one seen in Stonehouse Pool. On the 20th I saw one shot, which I afterwards examined, and found the stomach to contain a crab, some whitish worms, and a few small stones. Divers seem to feed largely on crabs, as I have often found their stomachs full of them.

22nd. Observed two black redstarts hopping about on the rocks under the Plymouth Citadel; wind N.E., and very cold. Mr. Luckraft, birdstuffer, has lately had a very nice variety of the male blackbird sent in, the whole head of which was pure white, with the exception of a small black bar or patch on the back of the

poll. It seems strange that some varieties should be so regularly marked. A few days since I saw a sparrow which had a pure white feather on each side of the tail and another in either wing, giving it a very pretty appearance when flying.

28th. Wind still N.E. and bitterly cold. Another northern diver, some sheldrakes and immature goldeneyes killed, and large flocks of wigeon seen off the Mewstone. Black redstarts appear to suffer much from the cold, are very tame, and may be seen hopping and puffed up on the grass above the cliffs, instead of on the rocks below. The severe weather has also been disastrous to the green woodpeckers, many of our birdstuffers having received as many as seven or eight in a week for preservation.

#### DECEMBER, 1875.

2nd. Wind N.E. and very cold. There was an Iceland gull in the harbour this morning. I also noticed a fine old male black redstart in a quarry at Stonehouse.

3rd. A male black redstart at Bovisand, near Plymouth, which showed a white patch on the wings, but very little black on the breast. There were also numbers of gulls, curlews, an oystercatcher, and several cormorants on the rocks, but no divers on the coast. Woodcocks, snipes, lapwings, wigeon and teal are very plentiful in our markets.

7th. Wind N.E., with a slight fall of snow. Sky larks, in small flocks, were observed, from just after daylight until dusk, flying across the Sound from east to north-west, but were not accompanied by fieldfares or redwings, as they usually are during or after snow.

9th. To-day I saw a little stint, killed near Plymouth, which was in full winter plumage, much resembling that of the dunlin at this time of the year: I do not remember ever having known one to remain so late in this locality before. Two black redstarts were captured alive by a birdcatcher this morning, and an adult male goldeneye was brought to a birdstuffer at Stonehouse. Scoters are very numerous on the coast, and I have noticed a few tufted ducks in the market.

14th. There was a large northern diver off the Plymouth Hoe this morning, and at Mr. Lucraft's, in Stonehouse, I examined a Cornish chough recently killed: its stomach contained the remains of Coleoptera and very fine sea-sand. Gray plovers and a few sheldrakes have lately been received by our birdstuffers.



16th. This morning I was much interested in watching the actions of an eared grebe. On the eve of diving it would invariably sink its body a little, and go down with a sudden dart forwards. The true divers also sink their bodies a little before they disappear. Two bitterns have been brought to Mr. Peacock for preservation, one of which was killed near Bodmin. Great blackbacked gulls are now beginning to make their appearance, which they generally do just before Christmas.

19th. There were three northern divers off Firestone Bay this morning, two of which would turn almost completely over on their backs, with one leg in the air, during the act of preening the feathers of the breast; they had also a singular habit, whilst swimming, of thrusting out one leg from behind, which they waved high above water, like a fan. Several immature smews and goosanders have been obtained lately near Plymouth, likewise one longeared and several shorteared owls.

JOHN GATCOMBE.

8, Lower Durnford Street, Stonehouse,  
Plymouth.

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*Notes on the Occurrence of Rare Birds in Norfolk and Suffolk.*  
By Mr. T. E. GUNN.

*Osprey.*—A fine male specimen, in the second year's plumage, was shot on the 28th of October, at Redgrave, in Suffolk: it had been observed for several days previously fishing in the river. On dissection I found the stomach empty, the bird being very fat.

*Peregrine Falcon.*—An immature female of this species was observed for several days on the Taverham estate, near Norwich, feeding on ring doves, or "wood pigeons," as they are familiarly called here, and on the morning of the 10th of November it was seen by one of the gamekeepers to strike down a pigeon, which it began to devour, but being disturbed by the keeper, who appeared on the scene, it took flight, alighting on a tall tree close by. The keeper proceeded to set a number of steel-falls, or traps, around the remains of the victim, into one of which her ladyship walked on her return to finish her breakfast, and was soon dispatched by the keeper, and sent to me the following day to be preserved. It proved to be in good order and very fat—its plumage clean and not a feather amiss. Since its arrival in that neighbourhood the bird had

apparently kept itself amply provided with food, as the numerous remains of pigeons found about the park fully proved: its stomach contained pieces of pigeons' flesh and a good many of the feathers. On the 8th of December an immature male was shot at Yarmouth, which was also sent up to me: this was doubtless a bird of the year, the plumage being much paler than in ordinary examples, more especially about the head and neck, reminding one, at first sight, of the immature summer falcon. This bird was also exceedingly fat and weighed twenty-two ounces.

*Merlin*.—On the 13th of November a male, in mature plumage, was shot at Taverham: its stomach was filled with the remains of a greenfinch, and I also found attached to the outer coat of the stomach a single threadworm, measuring ten inches in length.

*Roughlegged Buzzard*.—This species seems to have arrived in rather considerable numbers on the eastern coast during the month of October. The first came to hand on the 20th of October, from Yarmouth, and proved on dissection to be a male; the second, also a male, on the 3rd of November, was killed on Gunton Cliff, near Lowestoft; on the 5th of the same month I received a female, killed at Palling, on the Norfolk coast; three days after another female from Leiston, Suffolk; and on the 23rd a male from Burlingham, near Norwich. In December I received a male (a very small bird), on the 8th, from Yarmouth, and on the 23rd another male was shot at Hareland. All these specimens were immature birds, and passed into my hands. I heard of many others being seen in various parts of the two counties, showing that they were pretty well dispersed. The roughlegged buzzard apparently prefers those localities where rabbits are in the greatest abundance, these animals apparently constituting their principal food, as shown by their stomachs being partially filled with rabbits' fur. In the stomach of one I examined I found the remains of a large water vole; and in the stomach of the last-named buzzard were the remains of a large common brown rat, the head, legs, and tail of which were swallowed whole. All the specimens were in good plumage, and rather fat in condition.

*Montagu's Harrier*.—An example was obtained, on the 18th of December, at Burgh St. Peter, which proved to be an immature male, a few feathers of the mature dress showing over some parts of its plumage.

*Great Gray Shrike*.—I have seen but one example this season;

it was a female, killed at Yarmouth on the 18th of October: it weighed two ounces two drachms.

*Albino Blackbird.*—A fine female bird was obtained in this neighbourhood on the 23rd of October last, and passed into my hands. The entire outside surface of its plumage was pure white, but in skinning it I found the basal half of some of its feathers, particularly a patch or two on its breast, of a dusky black; it had a perfect yellow beak; legs, toes and claws of a pinkish flesh-colour. The eyes of albinos, either mammals or birds, are invariably weak, being of a paler colour, generally pinkish, as in the case of white rats and mice, and is assumed at birth; but in this example the eyes were of the normal colour—*i. e.* dark brown; this and the fact of the darker colour in the basal half of some of its feathers, as just mentioned, would seem to indicate that its plumage was at first either in its normal state or partly so, and that its feathers had afterwards undergone their change of colour: this is probably, in some way, connected with the diseased state of the bird's liver, which on dissection I found to be quite black. The bird itself seemed rather fat and in plump condition.

*Ash-coloured Swallow.*—In the 'Zoologist' for October, 1875 (S. S. 4665) I recorded the occurrence of an albino of this species on the 11th of September. A few days after—*viz.* on the 24th of the same month—an ash-coloured variety was brought me, having just been procured at Gorleston, near Yarmouth: it was an immature bird, and on dissection proved to be a female. The whole of the upper parts of its plumage are of a pale brownish ash-colour; throat pale dull reddish; the under parts of a cream-colour, inclining to pale ash under the wings and tail-feathers. Each tail-feather, excepting the two centre ones, shows the delicate spot of white; irides pale brown; beak and legs pale flesh-colour.

*Purple Heron.*—This is a very rare species in Norfolk: two examples only have passed under my notice previous to this season. On the 25th of September last an immature specimen, and very probably a bird of the year, was shot at Hingham, by Mr. Muskett, of that town, and presented by him to the Earl of Kimberley, who brought it to me himself the following day to be preserved for his lordship's collection. His lordship informed me that when first flushed by Mr. Muskett (who was snipe-shooting at the time) it rose from a drain, and having the appearance of a rather strange looking bird to him, he marked the place where it alighted, which

was on the edge of another marsh-drain, and with the assistance of a friend who was with him at the time it was again flushed, when a successful shot was made. It is a female bird, and very fat. Its stomach contained a little brackish matter and a few hairs, apparently from the coat of a water vole. It is in precisely the same state of plumage as the other two Norfolk examples I have referred to. The following are its principal dimensions:—

Total length, beak and tail included	- -	35 inches.
Wing, carpal joint to tip	- - - -	14 „
Fully extended wings, to extreme tip of each	- 4 feet	4 „
Bill along ridge of upper mandible	- -	4½ „
Tibia	- - - - -	7 „
Tarsus	- - - - -	4½ „
Middle toe and claw	- - - - -	4⅞ „
Inner	„ - - - - -	3¾ „
Outer	„ - - - - -	4⅛ „
Hinder	„ - - - - -	3 „
Tail	- - - - -	4¾ „
Hind claw or curve	- - - - -	1¼ „
Weight	- - - - -	2 lbs.

The second, third and fourth primary quill-feathers are of equal length and longest in the wing; the first and fifth of equal length; but shorter than the above named.

*Great Snipe.*—This species seems to have arrived during the autumn in larger numbers than usual. In the 'Zoologist' for October, 1875 (S. S. 4665) I recorded the occurrence of four examples from East Ruston Fen, about two miles north-east of Stalham, a locality which seems to be rather a favourite feeding-ground with this species, as a few individuals are invariably obtained there each season. In October I received a fifth specimen from the same locality, and three most beautiful examples from Burgh St. Peter, between Stalham and Great Yarmouth; and on the 10th of November (a rather unusually late date) a male, which came to hand the following day, was killed on the estate of Lord Rendlesham in Suffolk. All these snipes were exceedingly fat—indeed I may say the same with regard to almost all the birds that have passed through my hands during the present season.

*Green Sandpiper.*—A male was killed at the river side at Thorpe, near Norwich, on the 8th of December: its stomach was full of insect remains, including skins of the larvæ of some species of Coleoptera.

*Plumage of the Little Bustard.*—With reference to my remarks on the roseate tint in the feathers of the bustard in the 'Zoologist' for February, 1875 (S. S. 4340), there seems sufficient evidence in Mr. Gurney's note (S. S. 4724) to confirm my impression that this tint is usual in the bustard family, and since writing my former note I have examined an old dried skin of *Otis tetrax*, and found this roseate tint quite as rich as in the fresh examples; therefore there seems no question that the Rev. A. C. Smith in his communication (S. S. 4422) overlooked this fact, which quite bears out some of my remarks in my former note.

*Bean Goose.*—An immature female was received from Cromer on the 23rd of December: its stomach was full of grit and vegetable matter, and the gullet full of grass.

*Sheldrake.*—Two fine old males in December, one from Yarmouth and the other from Westwick.

*Bittern.*—Two fine males, one on the 15th of November from Ludham, and the other on the 29th of December from Great Yarmouth. The stomach of the first was full of frogs' bones, and a large one quite entire, which was stretched out full length; and in that of the other I found as many as a dozen water newts.

*Polish Swan.*—A pair of swans were killed on Hoveton Broad on the 4th of December, which I had sent me. I find they answer to Yarrell's description of this species. The male measured in length five feet, and weighed twenty pounds five ounces, and the female four feet five inches in length, and weighed sixteen pounds one ounce.

*Bewick's Swan.*—Four examples were killed on Breydon, by one gunner, on the 12th of December.

*Goosander.*—Several females and young males were killed on Breydon in December, and on the 5th a fine old male, just killed, was sent me from the same locality, with two immature male birds.

*Food of Heron.*—In looking over the 'Zoologist' for 1875 I find a note (S. S. 4341) in reference to the heron preying on birds: this reminded me of a similar instance I have recorded in my note-book, and it may not be out of place to mention it in these notes:—"January 11, 1875. In dissecting an heron I found in its stomach an old cock blackbird, almost entire and partly decomposed, and a water-newt minus the tail." Having kept the heron in a state of domestication, I am aware it will refuse scarcely anything at all

resembling food. One I had about two years ago would swallow almost anything offered it—small birds (both alive and dead), mice, rats, pieces of animal flesh, bits of leather, boot-laces, paper, string, &c.

*Gray Phalarope.*—A fine adult female specimen, in full winter plumage, was shot on the 23rd of November at Beeston Regis, near Cromer: its stomach contained remains of minute insects and grit: the bird was rather thin in condition. On the 15th of December Mr. O. F. Harmer killed one (a male) on Breydon, which still retained a good deal of rufous around its throat and neck and on the margins of its secondaries.

*Rednecked Phalarope.*—A female, in change of plumage, was shot on a duck-pond at Hingham on the 13th of November: it was very tame and apparently well contented, swimming about with the tame ducks, which did not appear to molest it. Beak and tail included, the bird measured seven inches and a half in length, and from carpal joint to tip four inches and a quarter in the wing.

*Rednecked Grebe.*—On the 30th of October a fine old female bird, in nearly full summer dress, was shot on Breydon Water by Mr. R. F. Harmer. On the 8th of December I received a male from Burgh St. Peter, having a paler rufous neck; on the 18th another (also a male, but a younger bird) from the same locality; and on the 30th another male from Sheringham. I find, on referring to my notes, that in February, 1865, as many as sixteen birds of this species passed into my hands: ample opportunity has thus been afforded me for examination of the nature of their food, &c. One fact in reference to this species—and indeed with the whole of the grebes (examples of each of which I have dissected)—has struck me very forcibly at times; that is, the remarkable rapidity with which the feathers of the breast and under parts must be produced, or rather reproduced, as in most of my dissections I find that, in addition to its food, a quantity of its own feathers, and in some instances their stomachs are literally crammed with them—not at any particular season of the year either, but at all times. This seems to be a most curious provision of nature, and is, I believe, confined exclusively to this genus of birds: the feathers are doubtless intended to assist in cleansing the stomach by absorbing any extraneous moisture left by its food. I have sometimes seen a mass of quite green feathers, probably stained by vegetable matter previously contained

in the stomach. Their food consists principally of small fish, frogs, aquatic insects and vegetable matter. In the stomach of one I found a roach, quite entire, which measured six inches in length.

*Slavonian Grebe.*—On the 15th of December an immature male was obtained in the river near Earlham Bridge.

*Great Northern Diver.*—On the 13th of November an immature male was killed on the Somerleyton Marshes, near Lowestoft; its stomach contained only some pebbles as large as horse-beans.

*Blackthroated Diver.*—A female, in the second year's plumage, showing all the square white spots on its shoulders, was killed at Yarmouth on the 8th of December: its beak was black, inclining to horn-colour at its base: in its stomach were large pebbles and a quantity of grit. A smaller bird (a female), in the first year's plumage, also came to hand from Blakeney at the same time.

*Little Auk.*—During the prevalence of the recent gales off this coast two examples of the little auk were sent me, both being picked up inland; the first, a female, on the 26th of November, at Yoxford, in Suffolk; and the other, a male, on the 3rd of December, on the Kimberley Estate, near Wymondham. Both birds were dead; the last named, upon being skinned, exhibited some recent gunshot wounds.

*Sandwich Tern.*—On the 20th of October an immature female was shot at Yarmouth: its stomach was filled with small green bones, consisting principally of vertebræ of the garpike. I have notes of two other occurrences on the Norfolk coast, both adult birds; in the stomach of one I found an almost entire sand-lance. A few birds are seen about Yarmouth, I believe, during each autumn, but they do not appear to be often killed.

*Little Gull.*—During the month of October I received four examples of this species from Yarmouth, all being killed along the beach; the first, a female, on the 18th; two days after two more females, one immature; and on the 30th a male. The stomach of one I found filled with barley and a single shell, and in that of another some bits of fat.

T. E. GUNN.

47, St. Giles Street, Norwich,  
January 8, 1876.

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*Wild Cat.*—Having examined a wild cat recently received by Mr. E. Hargitt from Mr. M'Leay, naturalist, Inverness, I find it closely resembles,

both in size and colour, those described by that accurate observer, Professor Macgillivray. That Mr. Newman is right in thinking the specimen referred to by Mr. Corbin, as having been shot by Colonel Wright, was not the veritable wild cat, but a domestic cat run wild, there can be no doubt; for not only is it particoloured, but a foot shorter than a wild cat described by Macgillivray, and less by ten inches than the specimen before me, though somewhat shrunk and distorted. The length given by Mr. Corbin—namely, two feet four inches—is about the average size of the common domestic cat. In reply to Mr. Newman's query, "Has a wild cat, or has any species of *Felis* distinct from our domestic mouser, really been found in Britain?"—I am convinced there has, though I may fail in demonstrating with precision in what respect it differs, but will endeavour to point out what is most remarkable:—(1) it appears that the wild cat exceeds the domestic one in length by about a foot; (2) it is proportionately longer in the body and more slender; (3) the head is smaller and more pointed at the muzzle; (4) the pure white mystachial bristles much stronger than in the domestic cat; (5) the powerful grooved and blunt canine teeth; (6) the jet-black inner surface of the tarsus and paws, and whitish claws; (7) the dense fur and (elongated pile; (8) the thick bushy tail not tapering; (9) the yellowish red of the under parts. These are the chief differential points, and Macgillivray's description of *Felis catus* would, with slight alteration, answer for this specimen—a remarkable coincidence, if not of one and the self-same species. I need not therefore enter into minute particulars. The general colour of this male cat is dark gray, deeply tinged with yellow on the head, back and tail; less so on the sides. On the forehead there are five narrow irregular longitudinal black bands, blending at the crown before branching off to the nape, and abruptly terminating on the neck, from which point a central black band passes down the back, gradually widening towards the rump. There are on the sides thirteen more or less distinct black rib-like bars. The tail has seven black rings that gradually darken and widen towards the extremity, which is of a pure jet black for three inches and three-quarters—a strikingly characteristic feature. Over the eye there is a band of light buff, and a narrower one beneath; and in front of the eye a black patch, and a dark reddish brown one towards the nose, which is black; cheeks grayish and yellowish brown; two irregular black bands from above and below the eye pass under the ear to the neck. Ears dark reddish brown, tinged with gray and narrowly edged with light yellow. Chin yellowish gray, a spear-shaped black line separating it from the neck, which is yellowish, with a gray and white tinge. The chest blackish, but intermixed with gray and yellow, and a very elongated white nap. On the hind leg there are six and on the fore leg eight black bars, more or less distinct. I now give the chief measurements;—



	ft.	in.		ft.	in.
Length of head . . . . .		4 $\frac{3}{4}$	Thigh . . . . .		5 $\frac{1}{2}$
„ body . . . . .	1	8	Tarsus . . . . .		5 $\frac{1}{4}$
„ tail . . . . .	1	1 $\frac{1}{4}$	Fore leg from elbow . . . . .		5 $\frac{1}{2}$
Total length . . . . .	3	2	Tarsus . . . . .		3 $\frac{1}{2}$
Greatest breadth of head . . . . .		4	Mystachial bristles (the longest)		3 $\frac{1}{2}$
Length of ear . . . . .		2	Upper canine tooth . . . . .		$\frac{1}{2}$
Width of ear . . . . .		2 $\frac{1}{4}$			

The greatest length of body in the wild cat, the stronger and differently shaped canine teeth (grooved, too), the more pointed nose and bushy tail, prove it to be a distinct species. The spine being so much longer than that of the domestic cat, may there not be a greater number of vertebræ? Mr. Hargitt has two other specimens in his collection, and had a fourth (now in the possession of Mr. J. E. Harting), all from the same locality.—*H. Hadfield; Ventnor, Isle of Wight, December 10, 1875.*

**'A Catalogue of the Birds of Northumberland and Durham,'** by **John Hancock.**—I quite overlooked the critical notices of Mr. Hancock's work by Mr. Doubleday (*Zool. S. S.* 4429). I am very glad that attention has been drawn to it, and I will offer a few remarks as a pendant:—

*Sparrowhawk.*—If the late Mr. Doubleday had seen the sparrowhawk, of which a figure is given—as I have often done—he would never have hazarded the opinion that it was merely “in the adult plumage of the male.” It is a variety, and one of the most curious varieties ever shot. In the ‘Ibis’ for 1859 (p. 479) it is suggested that it comes very near to *Accipiter rufiventris*, and it is possible, though not probable, that it may be of that species.

*Linnet.*—With reference to the plumage of the common linnet, see a note or two in the ‘Field’ newspaper of November last.

*Our Wagtails.*—Under this heading Mr. Doubleday says that if the yellow and grayheaded wagtails are not distinct he does not know what constitutes a species. Everyone must agree with him here. I am at a loss to understand how the naturalists of Newcastle can consider the yellow wagtail to be a race of the grayheaded. This may be the key to the asserted nidification of the latter in three or four instances, which has been already mentioned in the ‘Zoologist,’ and is again reiterated. Mr. Hancock says two of the young and a fine adult female of the grayheaded wagtail were presented to him (*l. c.*, p. 60), but I should like to know who could distinguish the female from the female of the yellow wagtail, still less the young. It appears to me that they are so much alike that it is impossible.—*J. H. Gurney, jun. ; Northrepps Hall, Norwich.*

*Erratum.*—In the ‘Zoologist,’ S. S. 2713, second line from the bottom, for “*Larus marinus?*” read *L. fuscus*, Linn.—*J. H. G., jun.*

**Addendum to a Note on Rare Sea Birds** (Zool. S. S. 1295).—I see the first note which I had the honour to send you—and which has been followed by a goodly array of others—appears in the volume for 1868, and records without any particulars the following list of rare birds:—little gull (two), Iceland gull, glaucous gull (five), greater shearwater, fulmar petrel, spotted redshank (two), little auk (three), great skua and ringed guillemot. As such brief notes are of no practical use I have taken the trouble to hunt up the following details:—

The little gulls were shot on the 12th of August and 24th of October, 1867, at Flamborough Head. The former retains just one or two of the dark lesser wing-coverts and four brown-tipped feathers in the tail.

The Iceland gull was shot in Orkney on the 26th of October, and having been packed up to go a long journey *immediately after it was killed*, it was almost unfit for preserving.

The glaucous gulls were—(1) an adult from the Orkneys; (2) a specimen in what has been described as the general dirty-white plumage intermediate between the old and young, from Plymouth; (3) an immature specimen picked up by my father in Leadenhall, where it was hanging on the 9th of December with another, both being said to have come from Yarmouth; (4) two other immature ones from Yorkshire, shot respectively on the 14th of December, 1867, and the 24th of January, 1868. From Filey, on the same coast, I received another on the 26th of October following.

The greater shearwater, like all the British ones which I have seen, was the *Puffinus major* of Faber, to be easily distinguished from the cinereous shearwater by its small black beak. This bird, which was an adult female, fell in an exhausted state upon the deck of a trawler off Plymouth, was taken alive to a birdstuffer named Rogers, and sent to me by Mr. Gatcombe. I noticed that its legs were “picd” as in the Maux shearwater.

The fulmar petrel was a female, a young bird, and darker than any which I got afterwards. It was also caught alive at Plymouth on the 24th of October, 1867, and brought to the same birdstuffer as the shearwater.

The spotted redshanks came from Leadenhall, and the little auk from the coast of Yorkshire.

The gray phalarope was shot on the Tees somewhere below Stockton by a Mr. Pennrick Lyth, on the 10th of November, 1867. One of the pomarine skuas was shot at the same place.

The great or common skua and the “ringed guillemot” were shot at Flamborough Head on the 1st and 24th of March.—*J. H. Gurney, jun.*

**Rare Birds in Lincolnshire.**—I have received the following rare birds during the past month:—Blackthroated diver (male), Slavonian grebes (male and female), rednecked grebe (male), and peregrine falcon (male).—*Alfred C. Elliott; 29, High Street, Stamford.*

**Peregrine in the City of Norwich.**—Mention is made in Stevenson's 'Birds of Norfolk' (vol. i., p. 10) of a peregrine falcon shot in Norwich whilst chasing a tame pigeon on one of the bridges. It is also alluded to at p. 1302 of the 'Zoologist.' As the place of its capture was curious, some additional particulars which I have gathered may be not unacceptable. It was shot from Boardman and Harmer's wharf, in the heart of Norwich, by Mr. Walter Roper, and fell on Duke's Palace Bridge. It had previously darted through the old fish-market in pursuit of a pigeon, almost touching the fish-tables and passing up the length of the market. It was killed in September, 1838 (according to the 'Norwich Mercury,' as quoted in N. Wood's 'Naturalist,' vol. iii., p. 223), and the suggestion was that it had probably come from the Cathedral. It was stuffed by Johnson, and added to my father's collection.—*J. H. Gurney, jun.*

**Unusual Quantity of Buzzards in Scotland.**—In consequence probably of the unusually severe gales that Scotland, as well as England, has been lately subjected to, there have been many rare birds driven inland, and especially a number of buzzards. There are nearly twenty of these birds at present in Edinburgh, some in dealers' hands and a few in the possession of private collectors. All these were Scotch-killed birds, and most of them were obtained near the east coast.—*Alexander Clark-Kennedy; Edinburgh, December 29, 1875.*

**Claws of the Hawk Owl.**—The claws of the hawk owl are not bluish black, as described by Mr. Higgins (S. S. 3031), but black and white.—*J. H. Gurney, jun.*

**Blackbreasted Dipper near Filey.**—A dipper (one of the blackbreasted type) was shot on a "beck" at Flotmanby, near Filey, on the 8th of December. Probably this was a migrant from Scandinavia. I do not think any dippers breed near Filey, though they do in some parts of Yorkshire. If some resident ornithologist will keep a sharp look-out for the dippers, and endeavour to find out whether the blackbreasted type breeds with us, and if so whether it will mate with the commoner brownbreasted bird, it might help to decide whether or not we have two species of dipper in Britain.—*Julian G. Tuck; Old Vicarage, Ebberton, York.*

**Blackbird.**—A migration of blackbirds takes place on the coast of Durham in the early spring, and at the same time rock pipits appear there, and pied wagtails are very much on the move. I disturbed a great many blackbirds from some isolated bushes on the 26th of March, 1866, as I was going along the embankment of the salt-marshes at Tees-mouth, where I had not before seen one. A hen which I shot, and still have, was remarkably dark on the chest, with an entire absence of rufous colouring.—*J. H. Gurney, jun.*

**Blackcap Warbler near Penzance in December.**—I have on a former occasion reported to you the occurrence of the blackcap in our Land's End

district throughout the year, as well as of the chiffchaff with its subdued song. I have to-day seen at Mr. Vingoe's a female blackcap, in the flesh and in good condition, killed a few miles to the eastward of Penzance.—*Edward Hearle Rodd; Penzance, December 23, 1875.*

**Dartford Warbler, Green Woodpecker and Starling at the Land's End.**—

The green woodpecker, for thirty years of my residence at Penzance, was a bird unknown in the west of Cornwall, with the exception of one or two occasionally seen at Tulowarren, near the Lizard, and near Truro. The species is now becoming diffused in every direction about the Land's End district, without reference to trees or woodlands. The Dartford warbler, which I failed to discover myself for many years, may now be seen in nearly every furze-brake about the district. There is no bird, in point of numbers, that shows such an extraordinary increase as the common starling, which resort to our marshes and low shrubberies in countless thousands throughout the winter. Another fact connected with the starling in our county is the permanent residence of the bird during the breeding season, which in former years never was observed, but every year their numbers have been increasing and extending westward.—*Id.*

**The Stain on the Blackheaded Warbler** (*Sylvia melanocephala*, Gm.).—

The remarkable stain on the chin of the blackheaded warbler,—one of the best known of Sylviads in Southern Europe,—which led to Linder Meyer's conferring upon it another and a new specific name, has been commented upon once already in these pages (S. S. 2714). It is there stated to have arisen, in Major Irby's judgment, from contact with the berries of the "pepper tree," and not, as I surmised, from the Cactus opuntia. It seems, however, that the point is not dismissed yet, for I observe that in his last work ('Ornithology of the Straits of Gibraltar') that author reconsiders his dictum, and ascribes the stain to three plants—the cactus, the aloe, and the "pepper tree." Count Mühle, also,—another scientific observer,—attributes it to the cactus; so I am led to revert to my first guess as the right one, but whether it was the fruit, the pollen, or the red flower that gave the stain I am not botanist enough to decide.—*J. H. Gurney, jun.*

**Crossbills alighting on Ships.**—In my note on the American white-winged crossbill which flew on board the 'Beecher Stowe,' I omitted to state that it is not unusual for ships—particularly, I am informed, smacks which carry a light in their bows—to bring into Great Yarmouth crossbills (of the commoner species) which have alighted on the masts and rigging.—*Id.*

**Starlings and Rooks often peck with their Beaks open.**—With reference to the mandibles of rooks leaving two bayonet-shaped holes in gigantic puff-balls, I would remind Mr. Sclater that the common starling is said to peck the ground with its mandibles apart, and not closed, by no less an authority than our worthy Editor. If he will turn to page 2632 of the 'Zoologist'

(Second Series), he will find that "this bird appears to dig with its mouth open." A short time ago I saw a paragraph in the 'Field' newspaper about a starling with a curiously overgrown under mandible, and on reading it remembered that I had a similar specimen in my collection, in which the lower mandible projected quite a quarter of an inch. This I always supposed was caused by an injury from shot; but now, putting two and two together, I should be more inclined to think that these poor birds may have worn away their upper mandibles by pricking the ground with their mouths open, for Mr. Newman has remarked (*l. c.*) a feature in their digging operations to be that the upper mandible penetrates the ground, but not the lower.—*J. H. Gurney, jun.*; January 10, 1876.

[I am greatly obliged to Mr. Gurney for again calling attention to the subject, and shall be still further obliged if any reader of the 'Zoologist' will record his own *personal* observation on the subject. I have no wish for a statement of this kind to be received on my own unsupported testimony, although I had the best possible opportunity of repeating the observation; still I desire to preclude the possibility of a mistake.—*E. Newman.*]

**Jackdaws with Pied Heads.**—Jackdaws with pied heads not being very common, I beg to inform you of two. The first I saw in the flesh at the shop of Mr. Cole, bird-stuffer, Norwich: it was the property of a gentleman in the city, and was eighteen years old. The second is also a Norfolk specimen, and was stuffed by Mr. Newcome, a very first-class amateur taxidermist, who presented it to me: it was shot at Hockwold on the 1st of March, 1864.—*J. H. Gurney, jun.*

**Magpies in Norfolk.**—In recording, in his last Norfolk notes, a pair of magpies at Tilney (S. S. 4631), Mr. Stevenson records that they are now very scarce in Norfolk. On the 24th of December I saw seven on a hedge at Weybourne, and on the 30th I saw six of them again on the same hedge; so I hope there are still a few left. I observed one last year at Northrepps, but it is the only specimen I ever remember seeing here. I have, however, frequently met with them at Weybourne and Sheringham, but never in such numbers as last month. Thanks to the keeper and his satellites, they are following in the steps of the raven and the carrion crow, and other birds which are still common in counties where there is less game. At the same time there is no fear of our being entirely without them as long as their numbers are replenished with migrants from the Continent. If these latter come from Norway, as is supposed, I must say that they show none of the tameness which they are said to exhibit in that country, for a shyer bird than the magpie I do not know.—*Id.*

**White Spotted Woodpecker.**—It may interest the readers of the 'Zoologist' to know that James Gulliver, a woodman, of Ramnor Cottage, Brockenhurst, has a white specimen of the great spotted woodpecker (*Picus major*), shot by himself in the New Forest in 1873. With the exception of the

crimson feathers on the head and under the tail the bird is perfectly white. The following year he likewise shot, near the same locality, a specimen which has the crimson feathers on the back of the head instead of on the crown, and the top half of the wings and tail-feathers brown instead of black.—*Samuel James Capper; Huyton Park, Huyton.*

**Migration of the Swallow and Martin.**—In the January number of the 'Zoologist' (S. S. 4757) I am charged by Mr. S. Clogg with having "mistaken, misunderstood and misquoted" his remarks, and "committed—to put it mildly—the great error of omitting portions of a sentence in one case, and adding to another, so as to make the sentences suitable" to my "views." This is a heavy, not to say serious, indictment; and there is more of it, but the charges not so weighty. Well, then, though bearing in mind the wholesome proverb, "qui s'excuse s'accuse," I must confess that I did give him credit for the first line—the only important one, too—and committed the great error of adding it to his. As to my having misunderstood him by supposing the remarks referred to "general migration," the following quotation is the best answer, proving, too, that the "wind-bound theory" was not mine:—"A person told me that he had heard that swallows would not start on their migration whilst the wind was at all from an easterly direction; \* \* \* the above facts would appear in some measure to corroborate the idea. \* \* \* All this time the wind had been in the east, with the exception of a few hours." *My theory* is that the time of migration depends, not on the wind—whether east or north—but the *temperature*. As to the charge of making sentences suit my views, I must decline noticing it. In taking leave of this somewhat vexed question, I have only to remark that having for nearly forty years paid particular attention to the migratory habits of the Hirundines, I thought to give a brother ornithologist the benefit of it—helping him out of a "muddle"—when, lo! an attempt is made to drag me into one.—*Henry Hadfield; January 6, 1876.*

[Both Captain Hadfield and Mr. Clogg are far too good men to waste their own time and their readers' time in little differences of this kind: let me take on myself to apologise to *each of them* for expressions hastily used, and I believe elicited in the first instance by an inadvertence of my own.—*Edward Newman.*]

**Stock Dove in Ireland.**—Mr. Thomas Darragh, of the Belfast Museum, reports to me the occurrence, in the County of Down, near Belfast, of two specimens of the stock dove (*Columba anas*). He found them for sale at a poulterer's on the 8th of October, 1875. They had been shot and sold by a person on that day. One of the birds was too much injured to be preserved; the other, a male,—which I have to-day examined,—is in good plumage. I am not aware that this southern species has been before recognised in Ireland.—*Clermont; Ravensdale Park, Newry, Dec. 18, 1875.*

**Wood Pigeon attacking Peregrine.**—On Thursday afternoon, the 28th of October, 1875, I pulled up the Dart to see if the recent heavy gales had brought any wild-fowl into the river; but, with the exception of a few herons, cormorants, gulls, ringed plovers and dunlins, nothing was to be seen. However, to make up for the absence of anything worth shooting at, I witnessed an occurrence which perhaps is unusual, and therefore worth recording. On the side of the river opposite the village of Stoke Gabriel stands an old barn surrounded by several large and ancient elm trees, and, while slowly paddling by this spot, a fine and very dark-coloured female peregrine flew from a neighbouring orchard and settled in one of these trees. Pulling leisurely on, and keeping an eye occasionally in the direction of the barn, I presently noticed about a dozen wood pigeons fly over the brow of an adjacent hill and proceed in the direction of the elm trees, which they wheeled over with the evident intention of alighting in, or else in the orchard close by. They continued their manœuvres for a few moments, when all at once, like an arrow from a bow, out dashed the peregrine into the midst of them; but the pigeons, with equal swiftness, swooped down until they almost touched the earth, when, shooting up just as rapidly, they (with the exception of one) flew off to the woods on the other side of the river, and the peregrine—who did not appear to be at all anxious to secure a pigeon, and who doubtless merely chased them for sport—wheeled round and was sailing off in the direction of the elms, when the solitary pigeon which had left its companions turned back and actually made two swoops at her, endeavouring, as far as I could see, to strike her with its wings, but which attempt the peregrine was easily able to avoid, and, continuing her flight, resumed her perch amongst the branches of the tallest elm, the bold pigeon flying off in another direction.—*Gervase F. Mathew; Instow, November 18, 1875.*

**English and Egyptian Pigeons.**—Mr. Newman concludes his observations on the pigeons of Egypt (S. S. 3385) with four questions, to which—having lately studied the Natural History of that country a great deal—I will essay to give answers. Question 1. Are there one or two species of rock dove in Britain and Egypt?—I should say one in Britain; two in Egypt. Question 2. Is the domesticated species in Britain identical with the domesticated pigeons in Egypt?—I should say not. Question 3. Are the wild rock doves of Britain identical with the domesticated rock doves of Britain?—This must be answered in the affirmative. Question 4. Are the wild rock doves of Egypt identical with the semi-domesticated rock doves of Egypt?—And this also in the affirmative.—*J. H. Gurney, jun.*

**Malformed Pheasant.**—There is a malformed nestling pheasant (recorded Zool. 9792), exactly similar to Mr. Gatcombe's chick, in my collection.—*Id.*

**On Fowl and Pheasant Hybrids.**—In the summer of 1868 a common barn-door fowl strayed into the fir-woods at Trimmingham, near Cromer,

and laid five eggs, which the keeper's boy sought for and found. They were fertile, and it appeared that their mother had mated with some cock pheasant, as they produced five hybrid chickens, which resembled her less than him. A fox (quite a rarity about here) killed one, the old hen killed another, two more were caged in an aviary, and the fifth incautiously strayed to Northrepps, and was shot at Hungry Hills and presented to the Norwich Museum by Mr. Hoare. I believe it is the specimen recorded in the 'Zoologist' (S. S. 2057), though the statement that it proved a female on dissection surprises me very much, it being such a fine and large bird. To-day (December 7th) I have, in the flesh, another hybrid fowl and pheasant from the same woods, at Trimingham, being the second obtained from there this season, and both from the same brood. It is a small bird, and the keeper gives a gray-coloured hen and a cock pheasant as its parentage. In all the cases of this not uncommon hybrid which have come under my notice the pheasant is said to have been the father. Although there is no county where there have been more, both wild and tame, than in Norfolk, I suppose they have been reared with success in other places, and my father saw a good many, tame bred, at Mr. Hart's, naturalist, Christchurch.—*J. H. Gurney, jun.*

**Macqueen's Bustard and Juggur Falcon.**—I beg to inform all readers of the 'Zoologist' that nothing was further from my intention than to say or infer that our able, excellent and conscientious naturalist at Norwich, Mr. T. E. Gunn, was capable of trying to pass off the Macqueen's bustard as British, knowing the same to be foreign. Mr. Gunn received it to re-stuff: it was not in his hands for sale; and his first remark when I saw it was that he believed it had been mounted from a skin. I have made a somewhat special study of what are termed doubtful British birds, and I know what mischief may be done by leaving such a pretender as this unchallenged and uncorrected. Whilst on this subject, let me thank Mr. Jeffery for his answer to my note. I feel it is more satisfactory to both of us that the Juggur falcon's identity should be set at rest, and the mistake corrected. If Mr. Jeffery is able to turn to 'Land and Water' newspaper for the 25th of July, 1868, he will find it had been recorded under its rightful name—*Id.*

**Last Appearances of the Bustard in England.**—"A bustard was observed several times by a friend of mine on the downs near Brighton during the week preceding Christmas Day. I should like to hear whether it was seen by any of your subscribers."—'*Field*' of Jan. 15, 1876. "In your edition of January 15th a correspondent speaks of a bustard having been seen on the downs near Brighton the week before Christmas. I can now inform you that a bustard, doubtless the same bird, was obtained in the vicinity—*i. e.*, some ten or twelve miles from this place—on Friday, the 14th of January, and the specimen is now in the possession of Mr. B. Bates, naturalist, &c., of this town. The bird is a female, apparently about two years old—at all



events, not a bird of the year. It had been observed some little time previously, and had been seen flying across Pevensy Marsh, and I believe in other localities. It received its death-wound from a man who saw it flying over his head. It was hit hard, but did not fall. The next day two men observed it in a field. It then could not rise, but managed to escape them by running and fluttering. The individual who had wounded it then searched for some time fruitlessly, and the bird was discovered at length lying dead in a hedge. It is a grand bird, weighing eight pounds.—*J. F. Gottwaltz; South Bank, Eastbourne.*—‘*Field*,’ Jan. 22, 1876.

[The first of these records is pseudonymous, and therefore only admissible in the ‘*Zoologist*’ as corroborated by the second. I trust that, owing to recent enactments on behalf of our *wild birds*, these “last appearances” may become of as frequent recurrence as on another stage.—*Edward Newman.*]

**The Eye of the Little Ringed Plover.**—It is stated in the account of a little ringed plover contributed by Mr. Harting (*Zool.* 9284) that the eye “is surrounded by a circle of a beautiful bright yellow, and looks as if it were set in gold.” I took this to mean that the outer rim of the iris was yellow, but such has never been the case in the numerous specimens which I have examined in Egypt and Algeria, and I have little doubt that I have misunderstood the author’s meaning, which I believe to be that the eyelids were yellow. It will be satisfactory to me to learn that this is the case, and to others who may not have fully understood the sense of the passage.—*J. H. Gurney, jun.*

**American Bittern in Islay.**—A specimen of this bird was shot in Islay in the last week of October: it is in splendid plumage. The sex was unfortunately not noted.—*James Lumsden, jun.; Arden House, Alexandria, N.B.* (From the ‘*Field*’ of January 22, 1876.)

**Stone Curlew.**—The author of the ‘*Birds of Norfolk*’ (vol. ii., p. 63) appears doubtful whether the stone curlews leave the heaths and uplands at night to seek food in more cultivated quarters. I can say that this is so, and the statement of Mr. Rope (*Zool. S. S.* 3867) that they frequent the sandy heaths in Suffolk by day, and go out about sunset to feed, tallies well with my having heard them in Sheringham Park, near Cromer, screeching and squealing, at 9 P.M. They are never seen there in the day; it is therefore clear that they come from Kelling Heath, four miles distant, where I am happy to say that they are on the increase, as I have this year (1875) seen a flock of fifty. I have been told, too, by naturalists in a part of West Norfolk, where they are common, that they go down to the fens at night to feed; yet I know not whether it is more correct to term them strictly nocturnal or only crepuscular.—*J. H. Gurney, jun.*

**Sabine’s Snipe near Penzance.**—I have just seen and examined an interesting specimen of Sabine’s snipe (*Scolopax Sabini*). I have seen at different

times specimens of this variety, but I do not remember ever seeing one so dark as the present. The upper part of the head, forehead and occiput are black, with a faint shade of umber-brown extending in a narrow list down the back part of the neck; this colour—rather lighter in tone—pervades the whole of the part of the face between the eyes and beak, forming a blotch. Chin pale ash-brown, immaculate; sides of the breast to the flanks dark brown, with the feathers margined with buff-yellow; centre part of the breast down to the belly between the legs without margined feathers, dull light brown, mixed with buff; belly deep ashy brown, immaculate, extending to under tail-coverts and vent, where the feathers are again well-defined, with buff borders. Length of tarsus, one inch and one-eighth; of middle toe, one inch and three-eighths. The feathers on the back are ovate, becoming slightly elongated, with a defined point towards the lower part, but in no way approaching the form of the lanceolate scapularies of the other two species of common snipe. The black colour of the upper part of the head is well shown in the plate of Sabine's snipe in Bewick's later edition. In a former communication to the 'Zoologist' I mentioned my having detected fourteen tail-feathers in a specimen I examined, thus supporting the opinion that *S. Sabini* has no specific value, and is only a variety of the common snipe: it is quite clear that the present bird is a fourteen-tail-feathered example. This bird was shot by Mr. John Edward Dennis, of Lariggan, near Penzance, and he described the bird as having risen in a wild open moor near the celebrated Lanyon Cromlech, and as having uttered the same lispng notes two or three times—exactly similar to the well-known notes of the common snipe.—*Edward Hearle Rodd; Penzance, January 5, 1876.*

**Dunlins Inland.**—On the 12th of December we received a common dunlin from Lower Earham, near Norwich, which is over twenty miles from the sea-coast at its nearest point. Its appearance in such a locality was probably the result of the hard weather. We have also had specimens from the adjacent parishes of Hellesdon and Keswick at the same period of the year.—*J. H. Gurney, jun.*

**Gray Phalarope near Kingsbridge.**—On the 17th of December a boy caught a female specimen of the gray phalarope on the mud in the Estuary: it was in such poor condition that it could scarcely fly.—*R. P. Nicholls; Kingsbridge, December 21, 1875.*

**The Edible Qualities of the Shoveller Duck.**—Tastes differ, or else the edible qualities of shovellers vary much in different countries. The Rev. M. A. Mathew says:—"And here a word in praise of the flavour of the shoveller, which is quite equal to the well-known delicacy of the teal, if it does not even surpass it" (*Zool. S. S. 3826*). And again another correspondent remarks, "It is one of the best, if not the very best, of the edible ducks" (*S. S. 6923*). With such strong testimony in its favour, I am rather surprised that we scarcely found them worth shooting in Egypt. We did

indeed constantly kill shovellers, but we hardly regarded them as worth the plucking.—*J. H. Gurney, jun.*

**Wigeon.**—There is a pale variety of the female wigeon, which I fancy has been occasionally taken for the American wigeon. I have had two from Leadenhall. When I received the first one I supposed it to be the American wigeon, and, on comparing it with a brace of skins in my collection, the mistake is very excusable. My father possesses Mr. Bartlett's specimen of the American wigeon, which is the individual figured in Yarrell's 'British Birds.' It was the first which was obtained, and it is very doubtful if any others have been got since.—*Id.*

**King Duck in Leadenhall Market.**—In writing to you that the female king duck was a redder bird than the female eider (S. S. 2443), I omitted to add that my specimen was an unusually brown one. There is not, however, the least doubt that Mr. Gatcombe and I correctly named it; and it was so very fresh—for a market bird unusually so—that we were clearly of opinion it could only have been shot in one or other of "the four seas which girt Great Britain." I noted down the following measurements, &c., before it was skinned. Length twenty-one inches and a half; expanse thirty-seven inches; webs of feet black; axillaries eight; rectrices fourteen. Let me here add that I learn from Mr. Gatcombe that a king duck was killed at Plymouth some years ago, and seen in the flesh by him at a birdstuffer's named Mutton.—*Id.*

**Smew at Slapton Ley.**—On the 30th of December a female specimen of the smew was shot on Slapton Ley.—*R. P. Nicholls; January 6, 1876.*

**Goosander at Slapton Ley.**—A young male, a solitary bird, was shot at Slapton Ley on the 3rd of December, and another (also a young male) on the 23rd. On the 7th a female was procured out of a flock of seven, near Avetongifford, on the river Avon; they all appeared to have the female or young dress. The same person saw three male birds together a few days afterwards.—*Id.*

**Tropic Bird.**—Mr. Gurney, jun., has misread the heading of the Supplementary Birds at the end of my "List of the Birds of Europe," which says:—"The following list comprises those birds which have been observed occasionally in Europe, but which have no real claim to a permanent position in its Avifauna." I never said or thought that the tropic-bird (*Phaëton aethereus*) was a "doubtful species." In the new edition of my work, just published, I have only *one* "List of European Birds."—*C. R. Bree; Colchester, January 7, 1876.*

**Errata.**—In my note, "Waxwings without Wax," in the January number of the 'Zoologist' (S. S. 4762), nine lines from bottom, *for* is dressed *read* is sexed; and seven lines from bottom, *for* pale-plumaged *read* full-plumaged.—*C. R. B.*

**Great Crested Grebe near Kingsbridge.**—On the 24th of December a female specimen of the great crested grebe was shot near the mouth of the river Avon.—*R. P. Nicholls.*

**Blackthroated Diver in Somersetshire.**—A few days ago, in the shop of Mr. Petherick, the birdstuffer, at Taunton, I saw a blackthroated diver, which had been shot near Williton at the latter end of November: it was an adult bird, in nearly perfect plumage, except that the black on the throat was slightly mottled with white. This is the rarest of the three British divers in the West of England, not being common even in winter or young plumage, and is the first Somersetshire specimen I have seen. A great northern diver, in very nearly the same plumage, was shot about the same time in the marsh, which has been much flooded all through November and December.—*Cecil Smith.*

**Blackthroated Diver in Filey Bay.**—At Filey, on the 14th of December, Mr. Brown showed me a splendid adult blackthroated diver, in almost full plumage, which was shot in the Bay on the 10th. The immature birds are not uncommon; several have been met with lately.—*Julian G. Tuck; December 21, 1875.*

**Sandwich Tern on Filey Brigg.**—On the 18th of December Mr. Brown sent me a fine male specimen of the Sandwich tern, shot on Filey Brigg on the 15th. This is by no means a common species on the east coast, and certainly the middle of December is not a time when one would expect to meet with it. My bird was perfectly healthy and in high condition, so its late stay could not be attributed to a shot-wound or anything of the kind.—*Id.*

**Glaucous Gull at Flamborough.**—On the 27th of November I received an immature glaucous gull from Flamborough. Several more have been killed on the coast.—*Id.*

**Little Gulls off Flamborough Head.**—Three little gulls (all immature) were shot by Mr. Bailey, off Flamborough Head, during the first week in November.—*Id.*

**Second Instance of the Audacity of the Skua.**—I have another instance to give you of what I suspect to be the audacity of the common skua (*Stercorarius catarrhactes* (Linn.)). A gentleman was walking on the shore in Northumberland, when a bird, which was described to me as a large gull, made an attack upon him. He warded off its first blow with his arm, and when it came at him the second time he succeeded, by a quick clutch, in seizing one of its wings. Unfortunately he had not a tight hold of it, and the bird—whatever it was—broke away from him and went out to sea.—*J. H. Gurney, jun.*

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**Edible Turtle off the Sussex Coast.**—A few days before Christmas Day the Hastings fishermen found, floating in the British Channel, a large edible turtle, dead but in quite a fresh condition. They could not find a purchaser for it whole, so they cleaned out the shell and brought the dorsal part to me; all the rest of the animal was thrown into the sea before they came to me, or I should like to have preserved the head or some other parts of it. The men stated that they found more than a quart of eggs within it. The carapace measured in length, from front to tail, over the back, forty-one inches and a half, and its greatest width across the back was thirty-six inches. How it came into the position in which it was found is unknown, but it was evident that it had very recently died. Bell does not record the finding of any specimen of this species in his 'History of British Reptiles.'—*J. S. Bowerbank*; 2, *East Ascent, St. Leonards-on-Sea, January 8, 1876.*

**Toads in a Tree.**—I have cut the enclosed from the 'Eastern Daily Press' of this day, and send it to you, thinking that you might perhaps like to insert it in the 'Zoologist.'—*J. H. Gurney*; *Northrepps Hall, Norwich, January 21, 1876.*

"Perhaps the enclosed cutting from the 'Uitenhage Times' (South Africa) of December 10th may not be uninteresting to some of your readers:— 'A few weeks ago, at the Umgawali Forest, a tree with a trunk of sixteen feet long being on the saw-pit, when the bark and the first plank had been sawn off, a hole was found going inwards, the size of a wine-glass, from which the sawyers scraped out sixty-eight small toads. They were each the size of the upper joint of one's little finger, of a light brown, almost yellow colour, and perfectly healthy, hopping about and away as if nothing had happened. All about them was solid yellow wood, with nothing to indicate how they could have got there, how long they had been there, or how they could have lived without food, drink or air.'—*C. Daniels.*"

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**The Westminster Aquarium.**—The imposing ceremony of opening the Westminster Aquarium was performed on Saturday, the 22nd instant, by H.R.H. the Duke of Edinburgh. It is constructed on the circulating system as successfully carried out by Mr. Lloyd at the Crystal Palace; but, alack! there was neither water nor fishes. The writer of this hoped to set the engine in motion for the first time, but the absence of the two essentials nullified his efforts: he intends to report progress next month.—*Edward Newman.*

**Torpedo on the Irish Coast.**—During the first week of December a torpedo came into my possession, which had been offered for sale in the Dublin Market along with a number of fish taken by the trawl-boats, probably off our south-east coast. Like the other examples which have been recorded from the Irish Seas, this proves to belong to the so-called "New

British" torpedo (*Torpedo hebetans*, Lowe), which I should prefer to designate as the "black" torpedo, since this name would serve to distinguish it from its rarer English congener, *Torpedo marmorata*, *Risso*, which might be called the "marbled" torpedo. The present specimen is a female, measuring thirty-four inches in total length and twenty-three inches in breadth at the widest part; the teeth are small and sharp, pointing inwards. The colour above a uniform dark brown, slightly inclining to reddish; below white, with a pink tinge; a narrow band of brown at the edge. There are no spots on any part of the upper surface, which is perfectly smooth, as is also the margin of the spiracles. The stomach was empty. With regard to the indentation or notch on each shoulder, upon which Professor M'Coy relied as a principal character in founding his new species, *Torpedo emarginata* (*Ann. Nat. Hist.*, vol. vi., p. 407, 1841), it is to be observed that the present example, when laid upon its back, exhibits no indentation whatever; but when reversed, with the dark side uppermost, a small notch, or rather fold of the skin, is more or less visible, according to the manner in which the adjoining muscles are strained. The example agrees in every respect with the admirable figure of *Torpedo nobiliana* in Bonaparte's 'Fauna Italica,' with which it is evidently identical. Thompson enumerates only five instances of its occurrence on the Irish coast, and it is remarkable that all these were brought in by Dublin trawlers, like the present one; he himself examined but one specimen. I am informed that it is many years now since this rare and curious fish has been brought to our market.—*J. Douglas Ogilby*; 36, *Elgin Road, Dublin*.

**Silvery Hairtail on the Coast of Devon.**—On Thursday, the 20th of January, I recognised, at the shop of Mr. Peacock, animal preserver, Plymouth, a specimen of that exceedingly rare fish—in British waters—the silvery hairtail, or blade-fish (*Trichiurus Lepturus*), which had been captured several days previously (I believe on the 15th) in the Hamoaze, off Torpoint. Mr. Peacock not being aware of its name or rarity, and thinking that such a delicate fish (from its compressed form and its being so long out of water) could not well be skinned and stuffed in the usual way, had then done nothing towards preserving it, so I at once had it put into spirit. Its length is two feet eight inches, and its depth above two inches; colour on the back brownish, and sides very silvery; irides yellow. The tail is extended into a slender compressed cord. In every respect it agrees with the description given by Mr. Couch in his work on 'British Fishes,' who says that the figure given in his book is the only representation that has been derived from an undoubted British specimen. There are no fins on the belly, the line of which forms a long, "sharp, smooth edge."—*J. Gatcombe*; *January 21, 1867*.

**Giant Gray Mullet.**—By the kindness of Mr. Symons, of Mayon House, I have received from the Land's End a gray mullet, which measures over

all twenty-three inches and one-eighth, and in greatest girth at the commencement of the dorsal fin eleven inches, and weighs four pounds one ounce and a half. Accompanying this giant were two others, one twenty inches and three-quarters in length, and the other seventeen inches and one-eighth long.—*Thomas Cornish; Penzance, January 12, 1876.*

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**Great Sea Serpent.**—"Zanzibar, October 21. Captain Dewar, of the barque 'Pauline,' bound with coals for Her Majesty's Naval Stores at Zanzibar, when in lat.  $5^{\circ} 13' 8''$  S., long.  $35^{\circ}$  W., observed three very large sperm whales, and one of them was gripped round the body with two turns by what appeared to be a large sea serpent. Its back was of a darkish brown and its belly white, with an immense head and mouth, the latter always open; the head and tail had a length beyond the coil of about thirty feet; its girth was about eight feet or nine feet. Using its extremities as levers, the serpent whirled its victim round and round for about fifteen minutes, and then suddenly dragged the whale down to the bottom head first. On the 13th July this or another sea serpent was again seen about two hundred yards off the stern of the vessel, shooting itself along the surface, forty feet of the body being out of the water at the same time."—*Rev. E. L. Penny, M.A., Chaplain to H.M.S. 'London.'* "In confirmation of the recent sea serpent and whale combat witnessed off Brazil by the barque 'Pauline,' from Shields, with coals for the guard-ship 'London,' at Zanzibar, a letter has been received at Plymouth from J. H. Landells, the second officer of the 'Pauline.' He says there were five whales near the ship; the largest was attacked by a serpent. The reptile coiled two complete turns round the thickest part of the whale's body, and appeared possessed of complete power over the fish. The whale, in an agony either of pain or terror, was continually throwing itself half out of the water. He considers the serpent to have been at least one hundred and fifty feet in length."—*'Reuter,' November 22, 1875.*

[There can be no hesitation in explaining this narrative, if true, to have reference to a gigantic cephalopod: it would be a marvellous instance of just retribution, for the whales feed on cephalopods, if the cephalopods every now and then devour a whale by way of retaliation.—*E. Newman.*]

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## Proceedings of Scientific Societies.

### ZOOLOGICAL SOCIETY OF LONDON.

January 4, 1876,—Prof. A. NEWTON, F.R.S., Vice-President, in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of December, and called particular

attention to a Haast's Apteryx (*Apteryx Haasti*) from New Zealand, presented by Baron F. von Mueller, and a night parrot (*Stringops habroptilus*) from New Zealand, presented by Mr. T. E. Featherston.

An extract was read from a letter addressed to the Secretary by Mr. George Brown, dated Port Hunter, Duke of York Island, stating that he had shipped for the Society to the care of Dr. G. Bennett, of Sydney, two cassowaries and some other birds from New Britain and Duke of York Island.

A letter was read from Mr. R. Trimen, Curator of the South African Museum, Cape Town, containing some remarks on *Canis chama*.

Dr. Hector, exhibited and made remarks on three ancient feather-mats, made by the Maoris of New Zealand, which had been obtained by Dr. Buller, from a Chief on the Upper Wanganui River.

Prof. W. H. Flower, gave a description of the skull of a fossil species of the genus *Xiphodon*, *Cuvier*, from a specimen belonging to the Museum of the Royal College of Surgeons, supposed to have been found near Woodbridge, in Suffolk.

Prof. Huxley read a paper on *Ceratodus*, in which he pointed out the special characters presented by this remarkable fish in the structure of its nasal apertures, brain, skull and fore-limb. Prof. Huxley also called attention to the close connection shown by certain details of structure between *Ceratodus* and the Chimæroid fishes, especially as regards the skull.

A communication was read from Dr. Julius Von Haast, containing the description of a new ziphioid whale from the Coast of New Zealand.

Mr. Selater read a paper on some additional species of birds from St. Lucia, West Indies, which had been sent to him by the Rev. J. E. Semper of that island. The collection contained one very remarkable form which appeared to be referable to a new genus of Mniotiltidæ and was proposed to be called *Leucopeza Semperi*.

A communication was read from Mr. W. H. Hudson containing some notes on the spoonbill of the Argentine Republic.

A paper was read by Messrs. Selater and Salvin, on Peruvian Birds collected by Mr. Whitely, being the ninth of a series of communications on this subject.

A communication was read from Dr. Otto Finsch, containing notes on some Fijian Birds, including description of a new genus and species proposed to be called *Drymochæra badiceps*.

Mr. A. H. Garrod read a note on the *cæcum coli* of the Capybara, as observed in a specimen recently deceased in the Society's Menagerie.—*P. L. Selater*.

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## ENTOMOLOGICAL SOCIETY OF LONDON.

January 5, 1876.—Sir SIDNEY SMITH SAUNDERS, C.M.G., President, in the chair.

*Donations to the Library.*

The following donations were announced, and thanks voted to the donors:—‘Exotic Butterflies,’ part 97; presented by the Author, W. C. Hewitson, Esq. ‘Mittheilungen der Schweizerischen Entomologischen Gesellschaft,’ vol. iii., nos. 5 and 10; vol. iv., nos. 1 and 2; by the Society. ‘Proceedings of the Natural History Society of Glasgow,’ vol. i., parts 1 and 2; vol. ii., part 1; by the Society. ‘Proceedings of the Royal Society,’ vol. xxvi., no. 164; by the Society. ‘L’Abeille,’ 1875, liv. 17 and 18; by the Editor. ‘The Zoologist,’ for January; by the Editor. ‘Newman’s Entomologist’ for January; by the Editor. ‘The Entomologist’s Monthly Magazine’ for January; by the Editors. ‘Proceedings of the Dublin University Biological Association,’ vol. i., no. 1; by the Association.

*Election of Members.*

Messrs. F. J. Horniman and D. G. Rutherford were balloted for and elected Ordinary Members; and Professor W. Dickson, of Glasgow University, and Mr. F. Enoch were elected Subscribers.

*Exhibitions, &c.*

The Rev. R. P. Murray exhibited a collection of Lepidoptera taken by himself in the Higher Alps, amongst which were some interesting mountain varieties.

Mr. S. Stevens exhibited a specimen of a dragonfly, rare in this country (*Æschnia mixta*), which he had picked up, nearly dead, in his garden at Upper Norwood in the middle of November.

Mr. Champion exhibited specimens of Coleoptera, *viz.*, *Aleochara hibernica*, *Rye*, taken at Slieve Donardh, Ireland; *Homalota egregia*, *Rye*, from Caterham; and *Cryptophagus subfumatus*, *Gyll.*, taken in the London district.

*Papers read, &c.*

Mr. H. W. Bates communicated a paper entitled “Additions to the list of Geodephagous Coleoptera of Japan, with synonymic and other remarks.”

Mr. W. H. Miskin, of Queensland, communicated a description of a new and remarkable species of moth belonging to the genus *Attacus*, of which a male and a female specimen had been taken in the neighbourhood of Cape York. He had named the species *A. Hercules*. The expanse of the wings measured nine inches, and the hind wings were furnished with tails. The specimens had been deposited in the Queensland Museum.

Mr. C. O. Waterhouse forwarded a paper "On various new Genera and Species of Coleoptera," belonging to the Geodephaga, Necrophaga, Lamellicornia and Rhyncophora.

*New Part of 'Transactions.'*

Part iv. of the 'Transactions' for 1875 was on the table.

*Annual Meeting, January 24, 1876.*—Sir SIDNEY SMITH SAUNDERS, G.M.G., President, in the chair.

An abstract of the Treasurer's accounts for 1875 was read by Mr. J. Jenner Weir, one of the auditors, showing a balance of £286 0s. 11d. in favour of the Society.

The Secretary then read the following:—

*Report of the Council for 1875.*

In accordance with the Bye-laws the Council presents to the Society the following report:—

Since the last annual meeting, 15 members and subscribers have been elected, whilst 8 have been removed by resignation or death. The Society has lost Henry Doubleday, one of the original members, and John Edward Gray, a former President. Prof. Burmeister has been placed on the list of honorary members, in the room of the late Prof. Zetterstedt.

The Transactions for 1875 contain 21 memoirs, besides an appendix on Entomological Nomenclature, the whole forming a volume of 380 pages, exclusive of the Proceedings, with nine plates. A donation of ten guineas from Mr. Robinson-Douglas, to be applied to the publication of papers on British or European Entomology, has been appropriated to Mr. Edward Saunders' Synopsis of British Hemiptera-Heteroptera; and the whole expense of printing the paper on Nomenclature has been defrayed by the author, Mr. W. Arnold Lewis.

The financial statement of the year may be summarized as follows:—

RECEIPTS.		PAYMENTS.	
Contributions of Members	- £190	Publications	- - - £141
Sale of Publications	- - - 91	Rent and Office Expenses	- - - 94
Life Compositions	- - - 31	Compositions Invested	- - - 31
Interest on Consols	- - - 6	Library	- - - 5
Donations	- - - 28	Tea at Meetings	- - - 12
	<u>£346</u>		<u>£283</u>

The unusually large balance in hand of £63 is, however, more apparent than real, and the greater part thereof will be required to meet expenditure in the Library, which has been already authorized. So long as the Library remained in Bedford Row, few purchases were made for want of space; whilst its removal to Chandos Street is so recent that time has not sufficed

to do all that is desired. The next step will be to place in the binder's hands every volume now unbound, and the Council has given instructions to that effect.

The largely increased sale of the Society's publications is a satisfactory feature of the financial summary. And the Council has resolved that, in future, metropolitan members and subscribers who, in addition to their subscription for the current year, shall at or before the April meeting pay a further contribution of half-a-guinea, shall be entitled to a copy of the Transactions for the year. In other words, a town member, by making this additional fixed payment beforehand, will be able to place himself, as regards the receipt of our publications, in the same position as a country member.

The removal of the Society to its present abode and the re-union of our Library and Meeting-room under the same roof are unquestionably the chief incidents of the year in the Society's affairs. This has necessitated an alteration in our day of meeting from Monday to Wednesday; but on the other hand the original practice of one scientific meeting in each month throughout the year has been restored.

The Library has been re-arranged; and some new book-cases have been presented, for which, and for defraying all the expenses attendant upon removal, the Society is indebted to Mr. Dunning.

One circumstance which greatly influenced the Council in the selection of new rooms, was the opportunity afforded, by entering into friendly relations with the Medical Society, of giving greater facilities for the use of the Library. In the infancy of the Society, and when our books were few, the requirements of the case were sufficiently met by a weekly attendance of the Librarian; but as our stores have accumulated until the Library has become a valuable repository of works on all branches of our Science, it has been increasingly felt that some new arrangement was required, and that to keep the books inaccessible except on one day out of seven was a measure to be justified only by dire necessity. Consulted or not consulted, the books ought to be accessible; and whether the privilege is much used or little used, our members ought to have the power of consulting them, and have a right to require that the Society shall do its utmost to render such consultation possible. It is with great pleasure the Council announces that, by availing ourselves of the services of the Sub-librarian of the Medical Society, who resides on the premises, it will be feasible to have the Library open every week-day from 1 to 6 p.m., and on the days of meeting till 9 p.m., either for purposes of reference or for borrowing books in accordance with the Bye-Laws. It is with this view that the Council recommends the election of Mr. Poole as Librarian.

It deserves consideration whether it would not be desirable to make an alteration in our Bye-Laws, by repealing the provision which excludes the

Librarian from the Council, appointing as Honorary Librarian one of our own body, who shall be *ex officio* one of the Council, like the Treasurer and Secretaries, and employing a salaried officer as Sub-librarian. The Council will be glad to ascertain the opinion of members on this question, with a view to taking action thereon during the ensuing year. In the meantime, one of the Secretaries, or some other member of the Council, will endeavour to attend at the Society's Rooms on the Wednesday in every week.

The Council gladly avails itself of this opportunity to express its appreciation of the self-denying manner in which Mr. Janson has facilitated the new arrangements in connexion with the Library; unable himself to give a daily attendance at the rooms, he has not allowed his own interest or desires to stand in the way or interfere with measures designed to extend the usefulness of the Society. He retires, not without regret, from an office to which he was first elected in 1850; what was then a mere handful of books has, during his custodianship, expanded into a library not unworthy of the Society; and the Council feels sure that his services of more than a quarter of a century will receive at your hands the recognition they deserve.

The Librarian is not the only officer who retires. The Treasurer and the junior Secretary do not desire re-election; and the Bye-Laws require us to choose a new President.

It is seldom that so many changes occur simultaneously in the Society's staff. But in electing Prof. Westwood to the chair, the traditions of the past will be preserved; and relying on the co-operation of all the members, the Council has confidence in the future of the Society, whose continued prosperity betokens a widening sphere of usefulness.

January 24, 1876.

The following gentlemen were elected Members of Council for 1876:—Sir John Lubbock, Bart., Sir Sidney Smith Saunders, Professor Westwood, and Messrs. H. W. Bates, A. G. Butler, G. C. Champion, J. W. Dunning, F. Grut, R. McLachlan, R. Meldola, Rev. R. P. Murray, H. T. Stainton, and J. Jenner Weir.

The following officers were elected for the year 1876:—President, Professor Westwood, M.A., F.L.S., &c.; Treasurer, Mr. J. Jenner Weir; Secretaries, Messrs. F. Grut and R. Meldola; Librarian, Mr. W. E. Poole.

The President read an address on the progress of Entomological Science during the past year, which was ordered to be printed.

A vote of thanks was given to the President and other officers for their services, especially to the Treasurer (Mr. McLachlan) and the Librarian (Mr. Janson) on retirement from their offices.—*F. G.*

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*Notes from North Devon and West Somerset.*

By the Rev. MURRAY A. MATHEW, M.A.

DECEMBER, 1875.

10th. Bishop's Lydeard. Saw a little flock of tree sparrows to-day, a species I have not yet detected breeding in this neighbourhood. Mr. Cecil Smith describes it as extremely local in Somersetshire, and speaks of a colony established at Wiveliscombe. A few summers since I noticed this sparrow at Burnham in this county, and was told by Dr. Morris, a brother of the Rev. F. O. Morris, that it nested in some pollard willows about which I had seen several of the birds.

11th. A freshly killed landrail was hanging up to-day in a poulterer's shop in Taunton; and in the market I counted upwards of a score of woodcocks which had probably fallen to the guns of shooters of small birds. In hard weather woodcocks are frozen out of the large woods, and resort to orchards, withy beds and sheltered hedgerows, where they may often be seen upon the ground. Indeed, one day this winter, when there was no frost, I saw two woodcocks upon the ground in a wood we were shooting, and one of our party actually shot one while it was squatting under a bush. No doubt the instinct of the birds leads them to repose confidence in the close resemblance between the shades of their plumage and the colour of the ground when strewn with withered leaves, and they often lie close and escape being flushed, although a beater or a dog may have passed within a few feet of the spot. I recollect one day a keeper and I had both emptied our guns at rabbits when we became simultaneously aware of a woodcock sitting almost under us upon a moss-covered stone. Directly the bird caught our eyes it took wing and made off; but would probably have remained motionless had we failed to detect it.

I heard to-day of a fine specimen of the black-throated diver, almost in complete plumage, having being sent to the Taunton birdstuffer. It had been obtained on a pond on the estate of the Countess of Egremont, near Williton, and Mr. Cecil Smith tells me it is the first instance of this diver, so far as he knows, having occurred in the county. The birdstuffer at the same time had received a great northern diver in an advanced state of plumage

from the flooded country not far from Taunton, and a Manx shearwater from Watchet.

22nd. Siskins and common redpolls were noticed to-day on some alders by the village brook. About this date a little auk was caught on the Taw, near Barnstaple, and brought to the local bird-stuffer; and a second fine example of the roughlegged buzzard trapped on Exemoor was sent in by the keeper of Mr. F. W. Knight. The winter of 1875-6 has been a great one for rough-legged buzzards; numbers having occurred in Scotland, Norfolk, and other parts of the United Kingdom. Mr. Clark-Kennedy describes (S. S. 4795), the capture of twenty buzzards in the neighbourhood of Edinburgh, but does not mention whether these were *Buteo vulgaris* or *Archibuteo lagopus*. They were probably the latter.

29th. Driving down the lane from Bagborough to Bishop's Lydeard this morning, I noticed a gray shrike, which I took to be *Lanius excubitor*, in the hedge.

31st. Towards the end of the year the Barnstable birdstuffer received a very curious buzzard which had been trapped in North Devon. This bird is of a dark olive-brown all over, the colour appearing iridescent on the scapularies and upper wing-coverts. It has feathered tarsi, and is a larger-looking bird than any specimen of the roughlegged buzzard with which I have compared it, and stands higher on its legs, the tarsi measuring three inches and a half in length, while those of *A. lagopus* are less, a female measured by Mr. J. H. Gurney having its tarsi but two inches nine lines; and one described by Mr. Sharpe, in his book on the 'Birds of Prey,' three inches and one line. Mr. Gurney, senior, informs me that a melanism of *A. lagopus* is extremely rare, while dark varieties of an allied North-American species, *A. Sancti-Johannis*, are not infrequent. It is thus probable that the dark buzzard I have been describing belongs to the American species of *Archibuteo*; if so it is its first occurrence, as far as Mr. Gurney knows, in Europe.

#### JANUARY, 1876.

A sharp frost, with a little snow. Flushed a green sandpiper from a warm ditch close to my house this morning, and saw it on several occasions subsequently. This is a bird which yearly becomes scarce. I am told it used to be frequently seen on the

margins of the cattle-pits in many of our fields, and Mr. Cecil Smith believes it formerly bred with us. The one seen to-day is the first I have come across in a six years' residence in this parish.

22nd. Observed the occurrence of a great bustard on the Sussex Downs, recorded in the 'Field' for this date. Surely there must be some mistake about the weight, which is put down at eight pounds, and the bird is described as an unusually fine example and in its second year. A young bustard would scale nearer sixteen than eight pounds: the old males weigh as much as twenty-five or even thirty pounds. The birdstuffer in Taunton showed me a fine old male goosander to-day which had been shot in the moors near the town.

29th. A fine mallard smew, in very perfect plumage, was in the hands of the Taunton stuffer to-day. It had been obtained on North Curry Moor, a considerable distance inland for an oceanic diver.

#### FEBRUARY.

3rd. Sniping to-day over some high ground near Ilfracombe, we sprung a little flock of short-eared owls from some high grass on a swampy spot. They were of all shades of colour: the darker ones were no doubt young birds, while the light-coloured ones (some looked almost white as they flitted heavily away) were the heads of the family.

4th. We were shooting on the Braunton Burrows to-day, where my brother noticed a little rail running on the ground between some clumps of the tall spiked rush, and shooting it picked up a very beautiful example of Baillon's crake.

MURRAY A. MATHEW.

Bishop's Lydeard, February 8, 1876.

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*Notes from Castle Eden.* By Mr. JOHN SCLATER.

(Continued from Zool. S. S. 4750.)

#### JULY, 1875.

*Woodcock.*—In the last week of July a young bird was shot near Castle Eden: the man who shot it did not know what it was. The bird had a strange appearance on the wing: he had shot at and missed it some days before. "It was in the moult, pen-feathered,

and had part of its first coat on." This is the only instance I know of the woodcock breeding in this neighbourhood, but Mr. Hancock says, in his 'Catalogue,' that a nest with four eggs were taken at Medomsley, on the Derwent, in April, 1872; and in the same year three broods were found in Chopwell Woods, in the valley of the Derwent; and that several other nests have occurred in Northumberland and Durham, adding that "between the years 1868 and 1872, seven nests of the woodcock were found on the banks of the Tyne, between Dilston and Prudhoe, in April and May." Although the Tyne seems to be a favourite locality, there are no doubt many other scattered instances unknown or unrecorded in both counties.

#### AUGUST.

*Lesser Blackbacked Gull.*—Plentiful on the coast.

*Merlin.*—On the 11th a young female was taken in a pole trap on the sea banks. I was for a long time rather puzzled with this specimen on account of its sporting a dark brown moustache or whisker, and having its eyes encircled with black, as in the young female redfooted falcon. Its general markings and dimensions, however, are certainly those of a merlin; and Dr. Tristram, to whom I have shown the bird agrees with me in this decision, but says it might be easily mistaken for a young hobby.

*Chiffchaff and Willow Wren.*—On the 16th I heard the notes of the chiffchaff close to my window: it was a young bird. Next day I heard the song of the willow wren; also a young bird. On the 27th I again heard the song of the willow wren.

*Teal.*—On the 31st large flocks of teal appeared on the coast, chiefly young birds. A young female I obtained had the breast so red as to have the appearance of being stained with blood; indeed it was not till I had sponged it with hartshorn that I could decide it was not, and it was only the gloss and smoothness of the feathers to the touch that saved it from being plucked.

#### SEPTEMBER.

*Woodcock.*—On the 11th I saw a woodcock in the Dene; another on the 14th, but it might have been the same bird: this or these were most likely home-bred birds, as I have little doubt the majority of "early woodcocks" recorded from time to time are bred in the district where they are seen, but generally escape observation until covert shooting commences.



*Missel Thrushes and Blackbirds.*—25th. I have noticed for the last few days that these birds are feeding almost entirely on haws, which seems to me very unusual, considering that the weather is so open.

*Song Thrush.*—I was stealing along a footpath in the Dene, trying to get a shot at some wood pigeons that were sitting on a tree, when a tapping noise attracted my attention: thinking it was a woodpecker, I began to scan all the nearest trees. Seeing nothing, I walked quietly through some bushes in the direction from which the noise came, and there I saw a song thrush pegging away with its beak at a rotten hazel: the stick was lying on the ground, the thrush standing by it with both feet on the ground, and must have been thus engaged for a considerable time, judging by the quantity of chips. The bird was probably seeking for insects; but although I took the bark off carefully and broke up a quantity of the stick I found none. This habit of the thrush was entirely new to me. I have three or four times seen them breaking snail-shells, but never in the manner quoted by Mr. Hancock from the work of Mr. Charles St. John, who says of the thrush:—"When it finds a snail which it cannot extract from the shell it carries it to some favourite stone which happens to have a convenient chink in it, pinning the shell so that it cannot slip, and then soon breaks it up, using its strong bill like a pickaxe." Now I much doubt whether a thrush could succeed in extracting a snail without first breaking the shell. However, in every instance which has come under my notice, the thrush held the snail in its beak; and if it missed its hold it would stand by motionless until the snail again exposed itself sufficiently for the bird to regain its hold, when it would again seize the snail, and keep hold of it until it had so smashed the shell against a stone as to be no longer a protection to the snail: just as they will patiently keep hold of a large worm until they succeed in drawing it quite clear of its hole; but, as soon as they find the worm has lost its grip, they will lay it down—close to or even covering the mouth of the hole—until they have mangled it to their liking.

#### OCTOBER.

*Thrush.*—On the 8th I observed that a great number of thrushes had arrived in the Dene.

*Heron.*—On the same day I saw a heron sitting on the top of a fir tree.

*Goldcrest*.—On the 18th I saw a flock of goldcrests flitting about a hedgerow near the sea.

*Kestrel*.—I examined the stomach of a male kestrel taken in a pole trap. I found it contained five large caterpillars and a small beetle.

*Fieldfare*.—On the 21st I saw a single bird, the first this season; no more until the 28th, when I saw seven.

*Woodcock*.—I hear of a good many having arrived in the neighbourhood.

#### NOVEMBER.

*Royston Crow*.—A great many have now arrived. I do not remember ever finding so few birds on the sea-shore as at present: there is seldom anything to be seen but a few kittiwake gulls and a few great blackbacks, mostly young birds, one or two whimbrels, and a pair of carrion crows.

*Jack Snipe*.—On the 5th, one killed by flying against the telegraph wires. A day or two since a goldcrest was picked up on the railway, probably killed in the same manner.

*Sparrowhawk and Woodcock*.—The gamekeeper here and two others were waiting by appointment to meet some shooting gentlemen in the Dene. The keeper, having just given his gun to one of the men to try his hand at a rabbit or two, sat down: the next instant he observed a woodcock on the open ground about fifteen yards in front of him, and a sparrowhawk sitting on a tree watching it; a second or so brought another sparrowhawk, and then came a third to the same spot. The keeper broke silence by calling out to the man to bring his gun, when off went the woodcock, followed by two of the hawks, the other flew away in an opposite direction. One of the hawks was seen to strike at and miss the woodcock; they then got out of sight. I have not before heard of the sparrowhawk hunting in company.

*Fieldfare*.—25th. Large flocks of fieldfares have appeared in the Dene. On the 26th many more were moving southward.

*Golden Plover*.—30th. Immense flocks are at present on the coast.

#### DECEMBER.

*Fieldfare and Redwing*.—4th. I do not remember ever seeing so many as are now about the Dene, and fortunately for them there are extraordinarily large quantities of haws for them to eat; but the

silly creatures throw nearly as many to the ground as they consume on the tree; these become covered with snow, and are therefore lost to them; but the pheasants gain by it, for they have less difficulty in obtaining them. I have noticed the pheasants this winter feeding on the berries of a shrub, on the lawn, which I never before saw them eat; the name of the shrub, I am told, is "Parry's thorn."

*Song Thrush.*—Has entirely disappeared since the frost and snow set in.

*Wood Pigeon.*—I have noticed for the last three months that there are not more than from twenty to thirty wood pigeons about the Dene, and they move about in one flock; nor do I meet with them in the fields in this neighbourhood. This appears to me very remarkable, considering the immense numbers usually to be seen here. After appearing in such vast numbers in December, 1874, they left us all at once, almost to a bird; and it is curious that not more than one-fourth of the usual number have been seen since; but few having bred here last season, the farmers declare it "a good job."

JOHN SCLATER.

Castle Eden, Durham.

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*Note on Picus leuconotus.* By EDWARD NEWMAN.

FROM a note by Mr. Gurney, jun., it appears that Mr. Gould has identified a specimen obtained at Halligarth by the late Dr. Saxby (S. S. 4695) as the whitebacked woodpecker (*Picus leuconotus* of Bechstein); and the Rev. S. H. Saxby has added an interesting note from his brother's journal (S. S. 4723), mentioning the unusual size of the cutaneous nerves in the woodpecker family, as well as the closeness with which the skin adheres to the body—a subject to which Mr. Corbin alludes in another communication. I have taken the liberty of offering a few more lines on the subject of the Halligarth woodpecker, the first record of which will be found at page 7932 of the first series of the 'Zoologist;' but the specimen was then supposed to be the greater spotted woodpecker. The addition I now desire to make is from a letter of my late friend Henry Doubleday, whose practice it was to criticise each number of the 'Zoologist' as it appeared, for my private benefit, and who never had the slightest intention of hurting the feelings of his

brother naturalists; but so long a time (thirteen years) having elapsed since it was written, and since both ornithologists now enjoy that "grata quies" which is the eventual lot of all men, whatever their opinions, I think I need no longer hesitate to give publicity to Mr. Doubleday's views. After expressing a very decided opinion on Dr. Saxby's communication my friend proceeds:—

"No woodpeckers ever appear 'in great numbers'—mostly one or two at a time. No woodpecker frequents the roofs of houses, or dung-hills, or meddles with horse-dung on the open ground among heather, or feeds upon mountain-ash berries."

I will now extract the final statement about these woodpeckers as published at page 7932 of the first series of the 'Zoologist,' and reprinted at page 138 of Dr. Saxby's invaluable 'Birds of Shetland':—

"In a recent number of the 'Zoologist' (Zool. 7754) I recorded the capture of two specimens of the spotted woodpecker (*Picus major*) in the island of Unst. During the next few weeks many more were killed, not only in Unst, but also throughout nearly the whole extent of the Shetland Isles: the wind was blowing steadily from the south-east at the time. I am also informed that about the same time several were killed in Orkney.

"The sudden and almost simultaneous appearance of large numbers of this species in various localities, where it is evidently considered an uncommon visitor, is a fact well worthy of the attention of ornithologists, inasmuch as a careful investigation might tend to throw considerable light upon the question of migration. It would be interesting to ascertain the proportion of the sexes among those specimens which were obtained, as well as the direction of the wind at the time of their arrival. Having heard that woodpeckers only attack such trees as are unsound, I was at first unwilling to kill more than the two already mentioned, but as the leaves began to fall, observing that large portions of the bark had been stripped from some of the healthiest and most vigorous of the trees in Dr. Edmonston's garden at Halligarth, I at length obtained a very reluctant permission to shoot as many of the unfortunate but mischievous birds as ventured within the forbidden enclosure. To those of my countrymen in Old England who have never wandered far from their own green woods, and to whom the loss of a few small trees would be a matter of little importance, the above may appear a somewhat cruel proceeding, but for all that it

was a necessary one, otherwise it would not have been sanctioned by Dr. Edmonston, who is too thorough a naturalist to countenance anything like wanton destruction of life, and who, it should be borne in mind, has for the last twenty years and upwards been very successfully endeavouring to introduce trees and shrubs into the island, notwithstanding the ill-natured ridicule with which his early attempts were received by certain of the inhabitants who ought to have known better. Having thus so far justified myself, I will confess that no less than seven birds fell to my gun alone; besides this, many others were brought to me from various parts of the island; but, strange to say, not one female was to be found among them, and, with one single exception, all were first year's birds. The first two presented nothing unusual in their appearance, but on taking the third one into my hand I at once remarked the worn look of the bill, tail and claws. I immediately suspected that this was caused by the scarcity of trees having driven the bird to seek its food among stones and rocks, and, upon opening the stomach, my suspicions were confirmed by the discovery, among other insects, of several small beetles which are found only upon the hills. I may mention that these beetles are very abundant in Shetland, although I do not remember having seen any of the kind in England: they are about the size and shape of one-half of a split-pea, black, edged with scarlet.\* I afterwards saw spotted woodpeckers on various parts of the hills, on walls, and even on high sea-cliffs; I also saw them on roofs of houses and upon dung-hills, and although several were killed upon corn-stacks I never found any grain in the stomach. They were frequently to be met with upon the ground among heather, where at all times they were easily approached, but more particularly in rainy or misty weather, when, their plumage becoming saturated with moisture rendering them too heavy for a long flight, many were stoned to death, by boys.

“Those in the garden fed largely upon seeds of the mountain ash, which they broke open to procure the berries, sometimes dropping a whole cluster upon the ground and descending to feed, but more frequently breaking the berries to pieces as they hung upon the trees. But even in the garden they did not confine themselves to the trees: at one time they might be seen busily searching among moss and dead leaves; at another in the midst of a tuft of

\* The beetles referred to are *Chrysomela sanguinolenta*.

coarse weeds; and again intently examining the spiders' webs upon the walls.

“It was quite a common occurrence to see them in open meadows scattering aside the horse-dung with their bills, and thus procuring abundant supplies of worms and grubs. I once crept very close to one thus engaged, and was amused to observe how cleverly it used its bill, first striking off large masses, and then dashing them into fragments in all directions by a rapid and peculiar movement of the head from side to side. Although *telescopic* evidence is usually of a somewhat doubtful nature, yet I spent many a happy half-hour in observing these interesting birds by means of a powerful pocket-glass. In this manner I could see them climbing the face of a large rock or of a rough stone wall, curiously peering into every crevice, and occasionally varying the amusement by a smart tap or two upon the unyielding surface of the stone. I once saw two upon the ground engaged in desperate combat, tearing, fluttering, and tumbling about in a most comical manner, at the same time uttering a shrill noise, which was half scream and half chatter. Upon my approaching a little too near they hastily took wing, and were immediately afterwards to be seen perched upon the top of a neighbouring rock, enjoying the warm sunshine, and apparently already in happy forgetfulness of their ‘little difference.’ The longer the birds remained in the island the more worn their tails and claws became, but it was only in a very few instances that any injury to the bill could be detected. I carefully dissected several of the victims above mentioned, but without observing anything particularly worthy of note, with the exception, perhaps, of the large size of the cutaneous nerves, and the closeness with which the skin adhered to the body. I should be glad to ascertain whether these peculiarities have been remarked in the green woodpecker, for possibly that bird’s well-known susceptibility to atmospheric influences may thus be in some measure accounted for, though why such a peculiarity should be so strongly developed only in certain genera is a question of a totally different nature, and one upon which I will not at present hazard my own imperfectly matured conjectures.”

It occurs to me to make two remarks in reference to the subject: *first*, that I have the most entire confidence in every statement Dr. Saxby has published; and *secondly*, that Mr. Doubleday could not by any possibility have been acquainted with the habits of *Picus*

leuconotus, and therefore may have erred in making his objections to Dr. Saxby's statement.

EDWARD NEWMAN.

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*Ornithological Notes from Devonshire and Cornwall.*

By J. GATCOMBE, Esq.

(Continued from Zool. S. S. 4785.)

JANUARY, 1876.

*Cornish Chough.*—Judging from the specimens occasionally received by our local birdstuffers, I should think that the number of choughs on the Cornish coast has been gradually increasing within the last ten years. On the 4th instant I examined two at the shop of Mr. Luckraft, Stonehouse, and found the stomach of one to contain the remains of a large dung-beetle and, as usual, a quantity of fine sea-sand. What a great pity it is that these interesting birds should be killed at all!

*Gannet.*—During the past week hundreds of gannets have appeared in the channel off Rhame Head, near Plymouth, when several were obtained both with the gun and baited fish-hooks. One man described their numbers as being so great that they appeared, when fishing, to “fall like a snow-shower”—not a bad simile, I think.

*Shorteared Owl and Black Redstart.*—January 8th. Observed some redstarts on the coast; wind N.E. and very cold. Two more shorteared owls have been brought to Mr. Peacock this week; one was an unusually large specimen, the stomach of which contained, besides mice, some feathers and the entire leg of a redwing. There were some immature goldeneyes and tufted ducks in the market to-day.

*Plumage of Guillemot and Razorbill.*—January 13th. These birds are exceedingly plentiful on our coasts just now, and I was rather surprised to find that many of the former had already acquired their full breeding dress. I was also informed by a friend that some were killed three weeks before in the same forward state. From which it would appear that the winter dress of the adult guillemot is of but short duration. Almost every razorbill was in perfect winter plumage, a very few dark feathers only just appearing on the throats of one or two of them.

*Lesser Spotted Woodpecker.*—January 20th. One of these pretty little birds was shot in the vicinity of Plymouth, and another heard in the woods of Port Eliot, St. Germans. The cold weather seems to have greatly affected the young herons in this neighbourhood, so many having been lately killed and brought to our birdstuffers. Several redthroated divers have appeared in Plymouth Sound within the last week.

*Strange Captures of the Kestrel and Peregrine Falcon.*—A week or two since I examined a fine adult male kestrel, which had been captured in the following singular manner:—A gentleman living near Plymouth observing a hawk intently engaged in tearing up a thrush which it had just killed, thought he would cautiously creep up behind it, and to his great surprise was thus allowed to come so close as to capture it by placing his stick on its back before the hawk was aware of his presence. It then began to show fight in the most determined manner, and was so much injured in the struggle that it had to be killed. The poor bird is now stuffed and under a glass shade with the headless thrush in its grasp. Such voracity is rarely met with in the kestrel; and, strange to say, the bird was very fat, and altogether in the finest condition. A large portion of the flesh of its victim, mixed with feathers, was found just swallowed. A very similar occurrence took place some years ago near Plymouth. A labourer at work near the coast saw a peregrine falcon strike down a gull (*Larus canus*) a few hundred yards from where he stood. He then approached the spot with the greatest caution, and so intent was the falcon upon her prey that this man actually put his foot on her back and held her down whilst he untied his garter, with which he secured his prize. The peregrine was admirably stuffed by Mr. Bolitho, of Plymouth, in the act of devouring the gull, and is now in the possession of Mr. W. E. Matthews, of Plymouth.

JOHN GATCOMBE.

Durnford Street, Stonehouse, Devon.

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**Hedgehogs in Ireland.**—In one of the late editions—if not the very latest—of Bell's 'British Quadrupeds,' it is stated that there are no hedgehogs in Ireland. This is a mistake. There are plenty, at least in Leinster. Lately I kept some in my garden in boxes full of hay, and with holes to get in and out as they pleased. In summer they fed on snails and slugs; in winter I gave them bread and milk. I never knew them to sleep more



than three or four days at a time. They first appeared to become somnolent on the 31st of October: four weeks afterwards they again became lively, and mixed quantities of leaves and grass with their hay beds. I weighed them about once a week, with the following results in pounds and ounces:—

	lb. oz.	lb. oz.	lb. oz.	lb. oz.
February, 1875.—Male - - - - -	—	1 14½	1 13½	—
March.—Male - - - - -	1 12½	—	1 11	—
May.—Male - - - - -	2 4½	2 3	2 7	2 1
June.—Male - - - - -	1 14	—	2 4	2 4
Female - - - - -	—	—	1 10	—
July.—Male - - - - -	2 6½	2 1½	2 1½	1 15
Female - - - - -	1 8½	1 9	1 9	1 13
August.—Male - - - - -	2 1	2 3	2 2½	2 1
Female - - - - -	1 12½	1 12½	1 12½	1 11
September.—Male - - - - -	2 2	2 2	—	2 2
Female - - - - -	1 11	1 12	—	1 11½
October.—Male - - - - -	1 14	1 13	1 14	1 13
Female - - - - -	1 9	1 9	1 14½	1 15½
November.—Male - - - - -	1 10½	1 10½	—	1 10½
Female - - - - -	1 9	1 9	1 9	1 9½
December.—Male - - - - -	1 8½	1 8½	1 8	1 8
Female - - - - -	1 6	1 7½	1 7	1 6
January, 1876.—Male - - - - -	1 7½	1 7½	1 7½	1 8
Female - - - - -	1 6½	1 6½	—	—

The female died on the 9th of January, 1876, and the male on the 8th of February next following. I have had other hedgehogs that died. There must be something wanting to their health in an ordinary garden; and I have concluded that it is not right to keep them in confinement.—*Alfred Webb*; 74, *Middle Abbey Street, Dublin, February 8, 1876.*

[I observed the mistake in the Second Edition of Bell's 'Quadrupeds' on the very day of publication, and wrote to the author respecting it. With that obliging courtesy with which he has ever received any observation of mine, Mr. Bell immediately admitted the error, and had a slip printed for pasting in each copy of the work: this was doing every thing in his power, and as the error does not occur in the first edition, we may assume it was introduced by his assistant editors: it was fully noticed at the time in the 'Zoologist.' The weights are interesting, showing that hedgehogs are heavier in summer than in winter, and also that the males are almost continuously heavier than the females.—*Edward Newman.*]

**Wild Cat.**—In the 'Zoologist' for February (S. S. 4791) I note Captain Hadfield's communication on the wild cat. It may interest you to know that for some weeks past a pair (male and female) of the veritable *Felis Catus* have been exhibited alive in Glasgow, and have called forth a good deal of local discussion. They were brought forward at a meeting of our Society—the Natural History Society of Glasgow (*vide* 'Glasgow Herald' of 29th January)

—on the evening of the 25th January, by the owner. I examined them carefully both on this and on a prior occasion, and am thoroughly satisfied as to their identity. They are undoubtedly wild cats, as the term is rightly understood in Scotland—typical *Felis Catus*. They were also sent from Inverness-shire,—doubtless from the same locality as Mr. Hargitt's specimens,—and I have one in our collection here also from Inverness, and another from Sutherland. Captain Hadfield's description answers well for the male in every point, as far as I can speak from memory. Notably the head is smaller and more pointed at the muzzle, and I may add flatter than in ordinary specimens of our domestic cat; the tail is short, bushy, and not tapering. These differences, along with the distribution and arrangement of the markings, are what I take to be distinctive ones, and are very apparent in the Glasgow specimens. The female is a much smaller animal, and is said to be younger, but the markings and above-mentioned peculiarities are equally apparent. Size, and roughness of coat, I do not think can be considered of much importance if taken apart from the other items of description, because tame cats run wild often attain to a large size. As to the right to specific distinctness of our domestic cat, that is another question. I only speak of the visible differences between a wild cat (*vera*) and a tame cat run wild,—or in other words, between a wild cat (*Felis Catus*) and a wild tame cat (*Felis domesticus*). It may further interest you to hear that Mrs. Puss is fairly in the way of becoming doubly interesting, and we may look forward to seeing a family of "real ringtailed squealers" in due course of time. I did not measure the specimens.—*John A. Harvie Brown; Dunipace House, Larbert, February 3, 1876.*

**Arrival of another African Leopard.**—The collection of the Zoological Society has just received an African leopard, called "Mesa," which was captured in the province of Mozambique, Quintangonha district, and brought up by hand by Captain d'Adriao, of the Portuguese navy. Subsequently she was given to Mr. Elton, H.B.M. Consul, who sent her home, under the kind charge of Lieut. Willison, R.N., by the Union S.S. Company's Line, to be presented to the Zoological Gardens. Mesa, the leopard, had a brother, whose tail unfortunately was injured, and Mesa so attentively licked and nibbled at the wound that the whole tail eventually disappeared, and the brother died of gangrene. She is, however, perfectly quiet and docile, and was petted like a cat at H.M. Consulate previous to sailing for England.—*'Field,' February 5, 1876.*

**Enormous Elephant's Tusk at Zanzibar.**—One of the first things that attracted my attention was an ivory merchant's store, in which was a lot of the finest ivory I had ever seen, so infinitely larger than the largest Ceylonese tusks that I stopped to examine them. The Arab owner pointed to one giant in a corner by itself, and on my asking its weight pointed to some Arabic numerals marked on it, and explained, through my interpreter, that

it was a single tusk, no fellow to it being known, and that it weighed 360 lbs. It was reserved, and specially set aside to be sent to Mecca. I judged its length to have been about nine feet, and its girth was prodigious. Probably the elephant had but this one; the other being destroyed by some disease, the whole vital force had gone to form this mighty mass.—*E. L. Layard.* ('*Field,*' February 5, 1876.)

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**Rare Birds in Essex.**—The following rare birds have come into my possession this winter (1875-76):—

*Great Gray Shrike.*—A male, in full plumage, was shot at Ramsey, near Harwich, on the 9th of November: its stomach contained a house sparrow.

*Gray Phalarope.*—A specimen, in full winter plumage, was shot at Harwich on the 24th of November.

*Sanderling.*—Seven were shot on the beach at Dovercourt in November.

*Great Crested Grebe.*—A specimen was shot at Dovercourt on the 26th of November.

*Rednecked Grebe.*—One was caught by a dog in a pool of water on the sea-shore at Dovercourt on the 26th of November.

*Eared Grebe.*—Two specimens of this pretty little grebe were shot on the river Stour, at Harwich, on the 3rd and 10th of December.

*Blackthroated Diver.*—Two specimens (male and female) of this rare bird were shot in Harwich Harbour on the 20th of December.

*Tufted Duck.*—A pair were shot in the harbour on the 12th of January.

*Redbreasted Merganser.*—Twelve of these birds (all females and immature) were sent me from Dovercourt. One killed itself by flying against the lighthouse.

*Goosander.*—A female was shot in the harbour on the 17th of January.

*Gull with Black Head.*—On Sunday, January 9th, whilst walking on the Esplanade at Harwich, I saw a gull with a black head as far as the eyes. The bird came quite close to me, so I am not mistaken. Could it have been the blackheaded gull? I never saw one have a black head before March.—*F. Kerry; Harwich.*

**Small Birds and Reed Beds.**—It is well known how attractive a bed of reeds is to several species of birds; for instance, who living in a favourable locality has not seen the countless numbers of the swallow tribe which frequent and roost in such situations in the latter days of summer? or of an evening who has not watched the large flocks of starlings which resort to the same roosting-place? or seen the whole reed-bed almost alive with a host of the sprightly wagtails as they flit and dance, with a merry note, from one part to another? Doubtless the insects found amongst the rushes are the great attraction during the day time or evening; but why is such a locality chosen to roost in? Is the temperature of such a situation more

evenly balanced, and consequently more agreeable, than in a shrubbery or a wood? and why is the reed-bed chosen only in the autumn? One evening at the end of October I saw a flock of some thirty or forty small birds upon some alders near the river, which by their gestures I thought were lesser redpolls. I watched them for some time, and found that my conjecture was correct, only that a few siskins were amongst them, which in habits they much resemble. After feeding upon the alder seeds for some time the whole flock descended from the trees to a reed-bed at no great distance, where, after some amount of twittering and shifting quarters, I believe they settled down to roost. I had never seen these tiny and interesting birds in such a situation before at roosting-time, although I have seen the lesser redpoll more than once amongst the reeds, inspecting them during the day time, and indeed their roosting in such a place may be well known to many other readers of the 'Zoologist,' who perhaps will explain to us the reason why such a roosting-place is chosen by many species of birds.—*G. B. Corbin ; Ringwood, Hants.*

[This predilection of birds for reed-beds has frequently been noticed. I have often observed and been unable to explain it, except on the theory that it is a protection against cats: reeds always grow in wet places, and cats have a peculiar antipathy to wetting their feet.—*E. Newman.*]

**Food of Peregrine, &c.**—In Mr. Gunn's remarks on rare birds in Norfolk and Suffolk in the 'Zoologist' for January (S. S. 4785) there is a notice of a peregrine trapped by a keeper on the Taverham estate, near Norwich. The poor bird had been observed for some days in that locality feeding upon wood pigeons, and from the numerous remains of these birds found in the park it was evident that there had been many victims. Were our larger birds of prey permitted to go unmolested for a few years we should doubtless hear less than we do now of the destruction caused by wood pigeons. The late enormous increase of these pests in every part of the country—a nuisance alike to the farmer, the game-preserved and the sportsman—is undoubtedly mainly due to the destruction of our larger Falconidæ. The wood pigeon is the natural food of these birds, and from its habits, large size, and attractive colour, far more likely to be knocked down than either pheasant or partridge. When will our gamekeepers and their employers learn wisdom, and understand that the presence of the larger birds of prey on their estates is not incompatible with plenty of game? Now, however, no sooner is a large hawk seen, or its presence suspected, than Velveteens and his myrmidons are on the alert, and no time or trouble is spared till the poor victim falls to steel-trap or gun. From Mr. Gunn's note on the roughlegged buzzard, seven examples of which have lately passed through his hands, it appears, from the fur found in their stomachs, that rabbits constituted their principal food; he also found the remains of a water vole and a common rat. We believe the amount of running vermin,

inimical to game, destroyed, both by the common and roughlegged buzzard, more than counter-balances any occasional raids on the rabbit-warren. A friend lately told me that in June, 1872, he went down a rock in North Wales to a buzzard's nest: there were two young partly-fledged birds in the nest, and besides them lay two moles, two stoats and a pine marten. I could say much more on this subject did time permit. I have read Captain Morant's most amusing and interesting book on 'Game Preservers and Bird Preservers,' and although I fully endorse his opinions on many points, I cannot agree with him in recommending the annihilation of the larger Falconidæ. There is a great deal of sound common sense in his book; but there are always two sides to a question.—*John Cordeaux; Great Cotes, Ulceby, February 4, 1876.*

**Notes on the Roughlegged Buzzard.**—Confirming Mr. Gunn's experience (S. S. 4786), I also found unmistakable fur of the rabbit in a roughlegged buzzard shot here on January 22nd. With regard to the common buzzards mentioned by Mr. Stevenson as seen by us (S. S. 4775, 4777), we thought they were such at the time; but I am disposed now to think they were the roughlegged species, which has occurred in some numbers. Several have occurred at Northrepps before, but not for a long time. I believe the last one was many years ago. Capt. Hadfield doubts if this buzzard would prey on any ducks except lame ones (S. S. 1058). In October, 1868, an example was seen hovering over some tame ducks near Saxmundham, and was shot in the act of swooping at one of them. This has been recorded (S. S. 1513, 1697). I have one other observation to make, which is that Yarrell seems in error in remarking that the roughlegged buzzard shows a preference for marshy districts ('British Birds,' 1st ed., vol. i., p. 82), but perhaps if any one has any evidence in support of this statement he will advance it.—*J. H. Gurney, jun.; Northrepps, near Norwich.*

**Buzzards.**—Roughlegged buzzards have been unusually abundant this autumn and winter in Scotland, especially in the counties of Perth (east coast) and Stirlingshire. A few of the common buzzards have also been obtained, but the former species has been much the more abundant of the two. Mr. James Lumsden, some time ago, at a meeting of the Natural History Society of Glasgow,\* made mention of most of the specimens obtained, and Mr. Robert Gray also took notice of them at a meeting of the Royal Physical Society in Edinburgh. Since then several more specimens have been added to the list.—*John A. Harvie Brown.*

**Common Buzzard.**—A common buzzard in my possession was caught in a somewhat similar place—if not manner—to that mentioned by Mr. G. F. Mathew. A gamekeeper near Wantage, in Berkshire, was going his usual rounds one morning (I think in June, 1853, but have not my notes to hand),

\* Natural History Society of Glasgow, Session xxv., 1875-76, third meeting of the Session, 26th November, 1875. See the 'Glasgow Herald' of December 4, 1875.

when a retriever, which had been at his heel, suddenly rushed forward and pinned something in a thick quickset hedge, which eventually proved to be a buzzard, which had in some way got entangled or jammed in the thick hedge. The keeper, with more sense than most of his brethren, took it home with him and kept it alive, and it subsequently passed into my possession, and a capital bird it is. With a clipped wing, it has the run of our walled kitchen garden, a treatment which combines the advantages of preserving the bird's health in the highest degree, and also requiring a minimum of attention. As a bird-scarer, I have always found a captive hawk a complete failure, which no doubt is a very general experience, although I feel sure a handicapped hawk keeps his eye on the small birds, even when one would the least suspect it. The gardener was one day defending the early peas from the attacks of small birds, and having shot a sparrow walked forward to pick it up, but before he could do so out strutted the buzzard from behind the peas, and ran off with it. Their run always reminds me of the pictures of hunted ostriches; with wings partly raised, head lowered and neck outstretched, they stride away in grand style and at a great pace. This winter, whenever a spell of sharp weather has brought redwings and fieldfares about, the gardener has occasionally shot one for the buzzard's benefit; he tells me that they (or at least the individual in question) quite understand the use of the gun, and keep on the look out for the spoil, so much so that when he the other day winged a redwing, which began to run, this buzzard was after it, and caught it directly. As buzzards are said to breed in captivity, and have done so on two or three occasions at the "Zoo,"—although, from one cause or another, the young have never been reared,—I was anxious to try my luck. Mr. Bartlett very kindly gave me a mate for my bird from the Zoo: the only difficulty was as to the sexes; I believed my bird to be a female, as it is a very big one; so he promised me the smallest specimen he had, by way of making sure of getting a male, and it is the smallest buzzard I have seen. It is a good deal different from my old one, besides the size; the cere, legs and feet being of the palest possible yellow, while in my old one they are bright yellow; and the plumage, which in my old one may be roughly described as brown on yellow ground, in this specimen is brown on white—more like the markings of a female sparrowhawk; but these are, doubtless, in no way sexual differences. My old bird proved itself to be a female, as on several occasions this summer the garden labourers, while at their work, observed her collect two or three pieces of stick or straw, and then sit for a few hours upon this apology for a nest. The gardener and this bird are repeatedly having some amusing "rows." One day, seeing her tramping about on a newly-sown bed, he drove her off, but directly he turned round to go away she also turned and came after him. About this time, too, she hit upon the ingenious method of "scoring off" him by pulling up (with her foot)

the labels stuck into the ground to mark where seeds were sown, and among others pulled up two marking the position of tall and dwarf varieties of some annual intended for bedding out in the flower-garden, and he had to trust to guess-work not to plant the dwarf variety at the back of the border with the tall variety completely eclipsing it in front. At one time a tame jackdaw used to visit our kitchen garden, climbing up the wall by means of a lean-to shed: the gardener for many successive days caught it and put it back again; but at last he left it to take its chance, and it was very happy in the garden for some few days, until at last, in an evil moment, it endeavoured to appropriate this buzzard's food, which she had dropped. This appears to have been more than she could stand, for pouncing down upon the jackdaw she killed it, but without in the least mauling it or attempting to eat it, though no doubt, as she had dropped her own food, she was not hungry. However, no kind of animal food comes amiss to me—this unlucky jackdaw was very acceptable to my otters. I have not had an opportunity of trying my buzzards with any snakes, but have seen a buzzard (I did not identify the species), in a forest in Bavaria, eating one. They will eat frogs, though they do not finish them up clean, but leave the hind legs. To my surprise my tame bird refused to eat the only mole I have yet offered her, although I believe I gave her a fair trial. The garden labourers say they forage a good deal for themselves, during the open weather, among the slugs, worms, &c.—*Alfred Heneage Cocks; Great Marlow, Bucks, January 25, 1876.*

**The Melanism of Montagu's Harrier.**—At Zool. S. S. 2260 is a letter from Mr. B. Bates, of Eastbourne, about a black Montagu's harrier,—a melanism now pretty generally known,—and at page 2306 is another letter from him saying that its mate and young ones had been seen and the latter shot. In this second letter Mr. Bates gives a description of the young, and wishes to know if they differ from the common Montagu's harrier. I have seen one of them, and am able to say that it does not differ in any degree whatever. I have also seen the old female, which was afterwards shot, and that agrees in plumage with a normal female Montagu's harrier. This is no corroboration of the hereditary theory propounded at page 42 of the 'Birds of Norfolk.'—*J. H. Gurney, jun.*

**Gregarious Habit of the Longeared Owl.**—About the middle of this month (January) I was shooting in a wood in this parish when five longeared owls got up. One of the keepers said that they had come from the adjoining parish of Trimingham, where, for at least half a dozen years, there have been a party of about six, and where I have paid them several visits (*cf.*, p. 3045). In spite of the numbers which are to my knowledge killed by the keepers, it is now a very numerous species on this coast, and I understand it is on the increase in other parts of England.—*Id.*

**Abundance of the Shorteared Owl near Kingsbridge.**—Great numbers

of the shorteared owl (*Otus brachyotus*) have made their appearance this season in this district. Many have been shot, and on several occasions six, eight, ten and even twelve have been flushed in a single field.—*Henry Nicholls; Kingsbridge, Devon.*

**Barn Owl and its Castings.**—The other day I was examining some pellets or castings of the barn owl, and found they consisted principally of entire skulls of the house sparrow. There was one skull of the short-tailed field mouse, and to my surprise one of the common shrew, showing that if hard up the bird will overcome the repugnance it has to shrews as food.—*Robert Mitford; Haverstock Place, Hampstead, July 9, 1876.*

**Great Gray Shrike in East Yorkshire.**—This bird seems to have been scarcer than usual in this part of the county this autumn. When the tide of migratory birds sets in from the north, and woodcocks, shorteared owls, redwings, fieldfares, &c., make their appearance on this coast, a few great gray shrikes are generally shot, but so far only one specimen has come under my notice; it was shot at Spurn the last week in October, and was a very clearly marked bird. Mr. Richardson, in whose hands I saw it for preservation, had saved the body for my inspection, but it was in such a bad state I could not make out the sex, and was unable to ascertain its age, though, judging from its general appearance, it would be taken for an old bird, the markings were so distinct and pure; still its breast was barred, and we are told in Prof. Newton's "Yarrell" that this is an unmistakable sign of youth: we are also told, quoting from Sharp and Dresser, that the double white bar on the wings—caused by the basal half of the secondaries and primaries being of that colour—is more fully developed in adult birds. I wish to point out that I have just compared a few specimens, and am inclined to think, with all due deference to such an eminent authority as Prof. Newton, that the barred breast is not always a sign of youth: the younger birds are no doubt more distinctly barred (though I am not quite sure that this is so in all cases); nevertheless, adults—birds showing the double bar very clearly, and having their secondaries broadly margined with white—have still their breasts slightly barred, whilst I have a bird without any trace of bars on the breast, and apparently a fine old bird that has not the double bar on the wings.—*F. Boyes; Beverley.*

PS. Since the above was written, I have heard of at least four specimens of this bird being obtained in East Yorkshire.—*F. B.*

**The Claim of the White-collared Flycatcher to a Place in the British List.**—Messrs. Pratt and Sons, the well-known taxidermists, informed me that they saw a pied flycatcher with a distinct white collar on the 24th of April, 1871, at Brighton, which may have been a white-collared flycatcher (*Muscicapa collaris*). This species was introduced by Mr. Gould into the British list. In his 'Birds of Great Britain,' began in 1862 and completed in 1873, he has given a beautiful figure of it. I fear it must, however, be



turned out again. As long ago as 1837 it set up its claim to be a British bird in the same author's 'Birds of Europe,' upon which authority it was subsequently inserted in Jenyns' 'British Vertebrates' (p. 98), among the indented birds without descriptions; and it is also placed in the doubtful list at the end of Doubleday's 'Nomenclature of British Birds;' and other books which I do not know of may possibly notice or include it. But what we have to do with is its more recent admission into Gould's 'Birds of Great Britain,' for which I am mainly accountable. I stated to Mr. Gould that in Mrs. Clarke's collection I had seen an undoubted male specimen which she believed was shot in Norfolk, and which was marked in the Catalogue as "a fresh specimen." Since then that noble collection—containing among other rarities, one of the most perfect specimens of the great auk known to exist—has been most generously presented to the Norwich Museum, and I have been able to look it over at leisure. With the assistance of Mr. Reeve, the Curator, I have made a slight but rather important discovery concerning the white-collared flycatcher. The birds are all marked with small tickets, and this one is marked "No. 3," corresponding, as I hitherto supposed, with "No. 3\*" in the Catalogue; but there is also another "No. 3" in the case, which is a pied flycatcher, and another "No. 3" in the Catalogue. It is therefore impossible to say to which in the case "No. 3\*" in the Catalogue (the one marked as "a fresh specimen") refers, but the inference naturally is that it refers to the pied flycatcher, and this is strengthened in my mind by observing that two other foreign birds have been admitted, evidently in mistake for their duller and commoner English representatives. The gentleman who formed the collection made it a rule to admit none but the very finest specimens obtainable, and I suspect that the white-collared flycatcher was selected and put in as a very bright example of the pied flycatcher.—*J. H. Gurney, jun.*

**On the Redwing Nesting in England.**—The first supposed instance of the redwing's breeding in England, brought forward by Mr. Feilden in a quotation from the 'People's Magazine,' appears to have been recorded in the 'Zoologist' before (see Zool. 6563, 6638, 6675). I say supposed, because, from the evidence there given, it appears very doubtful what bird the eggs were really laid by. At the same time I have no more doubt that the redwing does occasionally stay and nest than I have of its singing in England, though both these events are very much rarer than certain writers would have us believe.—*Id.*

**Curious Situation for a Robin's Nest.**—I was shown a nest the other day as curious as any that have been recorded for a long time, in regard to the situation which the bird (a robin) adopted. A velvet scoter had been stuffed and cased, but the glass of the case had been accidentally broken. Through the fracture the bird obtained ingress, and in the case it made a snug nest under the velvet scoter's tail, and laid some eggs, I believe; but,

as might be expected, they were not hatched. This adds another to the list of curious places chosen by robins to nest in.—*J. H. Gurney, jun.*

**Unusual Situation of a Redstart's Nest.**—In the 'Zoologist' for 1869 (S. S. 1801) is an account, by Mr. J. Ranson, of a redstart building its nest on the branch of a trained pear tree. Last May, whilst in pursuit of *Melitæa Euphrosyne*, I started a redstart from the bottom of a small hawthorn; and on searching I found the nest carefully hid in the midst of a large tuft of grass, and containing five eggs. To be sure that I was not mistaken in the bird, I retired a short distance and waited till it returned to its nest; the bird on its re-appearance confirmed my first impression. This is a curious departure from the redstart's usual custom of building in a hole.—*John Kempster*; 4, *Prince's Place, Clifton, February 8, 1876.*

**Migratory Flock of Wagtails.**—During the severe weather of the 15th and 16th of January we had a large migratory arrival of wagtails here. On the 16th there were several hundreds along the banks of the river, principally of the white and pied species (if they are distinct) and a few gray wagtails amongst them. The wind was N.E. at the time and bitterly cold; on the change of wind to the S.W., a few days later, the greater number departed. On the 29th I saw a grayheaded wagtail—the only one this winter.—*Id.*

**Grayheaded Wagtail.**—There are some remarks in the 'Zoologist' for February (S. S. 4793), on my 'Catalogue of the Birds of Northumberland and Durham,' by Mr. J. H. Gurney, jun., on which I wish to say a few words. Mr. Gurney doubts my assertion as regards the breeding of the grayheaded wagtail in our district. The so-called *Budytes flava* and *B. Rayi* are both well known to me; and, at page 60 of the 'Catalogue,' I give a detailed account of the whereabouts and the capture of the birds in question. I went myself to the spots where the nests were, and saw the old birds, as well as the young, before they were shot; and in the 'Catalogue' I state how the young of *B. flava* differs from that of *B. Rayi*. I think this ought to have sufficed, and saved my friend the trouble of making those remarks. He goes on, however, to say, "But I should like to know who could distinguish the female (of the grayheaded) from the female of the yellow wagtail, still less the young." If Mr. Gurney will call upon me in Newcastle, I will undertake to prove to him in five minutes how to distinguish between the two females (when they are well developed), and I think after he has examined the large series of these interesting wagtails which I have, he will perhaps see there is reason for saying "he does not know what constitutes a species." I have read the criticisms made by the late Mr. Doubleday, and those by others in the 'Field' newspaper (which Mr. Gurney alludes to), but I see nothing in any of them to alter in the least the opinions I have stated in the 'Catalogue.' Should at any time, however, facts be brought forward sufficient to make me change those opinions, I should be

the first to acknowledge they were wrong.—*John Hancock*; 4, *St. Mary's Terrace, Newcastle-on-Tyne, February 15, 1876.*

**The Calandra Lark a British Bird.**—The Calandra lark (*Melanocorypha Calandra* (Linn.) is said to have occurred once at Plymouth and once at Exeter. With regard to the latter specimen I have my doubts about it; nor is the former entirely without suspicion, though the specimen which is in my collection has not the appearance of having been a foreign skin. When I purchased it I obtained, through Mr. Gatcombe's intervention, the following certificate:—"I certify that this Calandra lark was killed by St. John's Lake, and I had it in the flesh and mounted it myself.—*Abraham Pincombe.*" It is said to have been killed by a man named Kendall, now dead. It agrees very well with specimens obtained by me in Spain and Algeria.—*J. H. Gurney, jun.*

**Whitewinged Crossbill near London.**—When you have perused the enclosed note, I think you will agree with me that we have had without doubt a visit from a specimen of that rare bird, the whitewinged crossbill, in the vicinity of London.—*Robert Mitford*; *February 9, 1876.*

[I subjoin the letter obligingly forwarded by Mr. Mitford, and written by his son:—

"East Molesey, February 7, 1876.

"My dear Father,—The bird in question was by itself when I saw it—once, and then only for a second or two. It was very shy. Ross saw it two or three times, but he has not seen it lately: it has always been by itself,—no others of the same or any sort of crossbill were with it,—although during the time it was about Lady C.'s place there were a good many of the common crossbill there. Just at that time, a fortnight or three weeks ago, I was up there a good deal, and saw several crossbills every day I was there. Ross knows all the birds he saw there just as well as I do, and he told me before I saw the bird in question that he had seen a beautiful crossbill with white bars on its wings (these were his own words). I immediately thought of the whitewinged crossbill. \* \* \* Although I only saw the bird for an instant, yet I feel perfectly convinced it was a crossbill, because it had a peculiar flight; the black and white bars on the wings were very conspicuous, and such as I had never seen before in any bird."

I believe I had the pleasure of first recording the occurrence of a second species of whitewinged crossbill in England, in the 'Zoologist' for November, 1848, and of correctly applying the specific name and synonyms as now adopted, but my late friend Henry Doubleday, as there stated, deserves all the credit of detecting that the species generally known by that name was not identical with the whitewinged crossbill of the Continent. In the third edition of his 'History of British Birds' (dated 1856), Mr. Yarrell confirms this decision of Mr. Doubleday's, and points out that De Selys-Longchamps, in his 'Fauna of Belgium,' had previously differentiated the two birds.

Mr. Yarrell has paraphrased the differentiation, as under, at page 28 of his second volume:—

*The American Whitewinged Crossbill.*

*Loxia leucoptera* (Gmel.)  
*fulvirostra* (Latham).

In size smaller than a sparrow.

Beak small, very much compressed, the points slender and elongated.

The tail greatly forked.

The males I have seen have the plumage of a brilliant crimson, the tail black; the feathers with little or no bordering.

Inhabits the United States of America and about Hudson's Bay.

*The European Whitewinged Crossbill.*

*Loxia bifasciata* (Nilsson).

In size larger than a sparrow.

Beak almost as large as that of the common crossbill; less compressed than the same part in the American, and the points less crossed over and less elongated.

The tail less forked.

The males I have seen have the plumage dull brick-red, the tail-feathers more obviously bordered with yellow.

Has been observed accidentally in winter in Belgium, England, Sweden and Bavaria.

It would appear from this that *Loxia leucoptera* is a purely North-American bird, and *Loxia bifasciata* merely an accidental winter visitor in Europe. It was not admitted by Temminck into the second edition of his 'Birds of Europe.' According to Harting's 'Handbook,' between twenty and forty specimens of *Loxia bifasciata* have been obtained in Britain, and six of *Loxia leucoptera*, besides a large flock seen near Banff by Thomas Edward, and reported in the 'Zoologist' for 1859. Of course it cannot be decided to which of the two species the bird seen by Mr. Mitford belongs.—*Edward Newman.*]

**Starling's Mode of Feeding.**—May I ask Mr. Gurney, jun., to turn to page 3648 (S. S.) of the 'Zoologist,' where he will find a short note of mine on the starling's mode of feeding? and I will only add that, from what I remember then seeing I am inclined to think that both mandibles are thrust into the ground, or rather, as I before said, into the grass-roots, and if seen would, I think, leave similar impressions to those left by the rooks on piercing the puff-balls. I should be glad to hear whether starlings have been observed to pierce the bare ground in the same manner. Perhaps you will allow me to ask—supposing it to be a habit of the starling to seek for grubs in the manner indicated—how comes it that so few upper mandibles are worn away in the operation?—*John Sclater; Castle Eden, February 3, 1876.*

**Starling Feeding with open Beak.**—With reference to the note in the February number of the 'Zoologist' (S. S. 4796), I have repeatedly observed the starlings, on the lawn behind my house, "picking the ground with their mouths open," not being aware at the time that there was any controversy

on the subject. The beak of a starling seems to be an inferior instrument, or at least wielded with very inferior power to that of a blackbird or a thrush.—*W. Southall; Alneley, Sir Harry's Road, Birmingham, February 14, 1876.*

**Starlings Pecking with Beak open.**—Some years ago I had a tame starling, which was a most impudent though confiding little pet, and often afforded us many pleasant moments watching his interesting habits. One of his most favourite amusements was to perch on the back of one's hand, or stand close to it when it was extended flat on the ground with the fingers pressed close together. He would then insert his beak between the fingers, open his lower mandible, and strive to force them apart, peering, when he had accomplished this feat, for anything which might be hidden beneath, and was often rewarded for his trouble by the discovery of some tid-bit which had been placed there for his especial benefit. From watching the habits of this pet, added to careful observations made a few days ago as four birds were feeding beneath our windows at Instow, I have come to the conclusion that the beak is not thrust into the ground *open*, but that immediately it has pierced the ground to its base the lower mandible is opened to its widest extent, and the bird, whose eyes are fixed so near the base of its bill, can easily detect and secure any creature in the little round space it has opened out to view. Tame jackdaws that I kept had also the habit of pushing their beak between one's fingers, and trying to prize them apart by suddenly opening the lower mandible; and I dare say many of your readers have noticed a jackdaw place its beak beneath a stone, and endeavour to raise or turn it over by the above movement. My little starling was a most knowing creature, and it was great fun watching him with a piece of bread and butter: there was no digging or pecking then, but he deliberately turned his head down, and with a side motion of his lower mandible against the upper, completely scraped off all the butter, without eating a morsel of the bread; but, with all his little quaint ways, he was—like his companions, the jackdaws—a terrible thief.—*Gervase F. Mathew; H.M.S. 'Britannia,' Dartmouth.*

**Migration of Rooks.**—In Mr. Stevenson's notes for November (Zool. S. S. 7466) he remarks on the large increase of rooks, apparently migratory, at Northrepps and Sheringham on the 7th. In a letter which I received from Heligoland, dated Christmas Day, 1875, Mr. Gätke says, speaking of this last autumn's migration, "an abundance of rooks there has been, as nobody ever witnessed before on this island: these last ten years together have certainly not seen here so many of these birds as this one autumn alone."—*John Cordeaux; February 3, 1876.*

**Jackdaws with Pied Heads.**—Mr. J. H. Gurney, jun., in the 'Zoologist' for February (S. S. 4797), mentions two instances of jackdaws with pied heads. I can now add a third, which came under my notice some years

ago, and which I recorded in the 'Huddersfield Naturalist's Journal' (vol. i., p. 148). The bird was an adult male, and was shot in this neighbourhood in June, 1861. I have now in my possession an old jackdaw very prettily pied with white feathers on the wing-coverts and rump, somewhat in form of a crescent now the wings are closed; it has also a patch of white on the abdomen, and each of the outer tail-feathers are also white.—*T. E. Gunn; Norwich, February 5, 1876.*

**Woodpeckers.**—I can bear testimony to the correctness of the remark quoted from the journal of the late Dr. Saxby (S. S. 4723), as to the "closeness with which the skin adheres to the body" of woodpeckers, and this is especially the case down the vertebræ, where it sometimes seems as if the skin is glued to the flesh, so firmly does it adhere. I have also observed the same thing, but in a less marked degree, in a specimen or two of the barn owl, but in every instance the bird was in poor condition: I never observed it in a bird that was fat. Woodpeckers are seldom fat, though sometimes plump—at least this is the case with the few I have handled; but I have no wish to prove that leanness is the cause of adhesion to the skin, although it has a tendency in that direction.—*G. B. Corbin.*

[The rarity or almost entire absence of the common green woodpecker in the Isle of Wight has long been a subject of great interest with me. The naturalists residing in the island repudiate this idea, and a correspondent for whom I have the most sincere respect assures me that he clearly recollects his grandfather having told him that he *had once seen a green woodpecker in the island.* The Rev. C. A. Bury also says (Zool. 915), "The green woodpecker is generally distributed over the county, and, although so abundant on the opposite coast of Hampshire, is with us a *rarissima avis*: R. Lee has seen it once." Has this bird a disinclination to cross salt water? and has a similar distaste for the briny deterred *Picus martius* from visiting Britain?—*Edward Newman.*]

**Plumage of the Great Spotted Woodpecker.**—The white woodpecker (*Picus major*) having a red head, mentioned by Mr. Capper (S. S. 4797), is evidently in immature plumage. The young of both sexes have the crown of the head red: this is entirely lost in the plumage of the adult female, and retained only at the back of the head in the male. This forms the chief distinction in the sexes in mature plumage. I remember in two instances having specimens of *Picus major* (in the adult state) with partly brown wings and tail.—*T. E. Gunn.*

*Erratum.*—Zool S. S. 4786, eight lines from the top, for summer falcon read lanner falcon.—*T. E. G.*

**Toucans in England in the Seventeenth Century.**—The following are two curious extracts from old works which treat of Natural History. Apparently they refer to the same species, though not to the same bird. No one would think now of letting the toucan into our fauna, yet these old worthies looked

upon it as a migratory straggler. Possibly they were two birds which had escaped: the Zoological Society has had many living specimens sent over from America; and yet it is odd that their owners did not take better care of them, great rarities as they must have been in that day.

“In the year 1644 the *Pica Brasiliensis*, or Toucan, whose beak is near as big as its whole body, was found within two miles of Oxford, and given to the Repository in the Medecine school, where it is still to be seen; which argues it a bird of a very rank wing, there being a necessity of its flying from America hither, except we shall rather say it might be brought into England by ship, and afterwards getting away, might fly hither.”—*Extract from Plot's 'Natural History of Oxfordshire'* (1677).

“The Brazilian Magpye; this was driven upon the coasts by the violent hale-storm described in Mr. Burgher's first Plate, and found dead upon the sea-coasts in Lancashire.”—*Extract from Leigh's 'Natural History of Lancashire'* (1700).

This storm is stated to have taken place about 1698; the plate referred to is a picture of it in the book. On another plate is given a figure of the toucan, copied from Willughby.—*J. H. Gurney, jun.*

**Wall Creeper (*Tichodroma muraria*) in Lancashire.**—On the 8th of May, 1872, a fine specimen of this continental species was shot at Sabden, a village a few miles from here, at the foot of Pendle Hill, and as I am not aware of its ever having been noticed before in this country, I send below the particulars. It was seen flying about by itself,—its bright colours drawing the attention of a lot of mill-hands,—did not appear to have a mate, and was at length shot by a man named Edward Laycock, who took it to Mr. W. Naylor, of Whalley, an accomplished naturalist, and who has for many years been President of the Accrington Naturalist's Society. Large slugs had been used to kill it, and it was so mangled that Mr. Naylor could not determine the sex, and had great difficulty in making it at all presentable; however, it was managed somehow, and remains in his possession still. It was noticed at the time that the grasshopper warbler (*Avicula locustella*) was heard for the first time that spring on the same day. The following are its dimensions, &c., as taken from the stuffed specimen:—Tip of bill to tip of tail, five inches and seven-eighths; wings, outstretched, tip to tip, eight inches; bill, seven-eighths of an inch; hind claw, thirteen sixteenths of an inch; middle front claw, fifteen-sixteenths of an inch; tarsus, one inch and one-eighth. Top of head, back, and upper tail-coverts ash-coloured. Throat and breast gray, becoming much darker, almost black, on the belly, vent and under tail-coverts, which last are tipped with white. Tail-feathers black, ten in number; the two outer on each side white-tipped; the rest tipped with ashy-gray. Primaries underneath, a white band at the base, and a rhomboidal white spot three-eighths of an inch long towards the top on the inner webs. Secondaries underneath, a pale reddish band at the

base on the outer webs, and about the centre of each feather a triangular pale red mark on inner webs. Primaries above have a rhomboidal white spot as underneath. A bright crimson bar, about one inch wide on the average, runs across primaries and secondaries, the colour being on the outer webs, and the secondaries having a triangular spot as underneath. Greater wing-coverts a mixture of crimson and ash-colour, with black tips. Lesser wing-coverts same colour, without the black tips. Bill slightly bent.—*F. S. Mitchell; Clitheroe, Lancashire, February 12, 1876.*

[The reader is referred back to the 'Zoologist' for 1874 (S. S. 4664), where the occurrence of a specimen of *Tichodroma phœnicoptera* at Stratton Hall is recorded by Mr. Bell. Are these the same bird? and has the Linnean specific name of *muraria* lasted long enough? It is very characteristic of the habits of the bird.—*Edward Newman.*]

**The Nuthatch** (*Sitta casia*, Wolf).—"A little bird, sometimes seen, but often heard in the Park at Woodstock from the noise that it makes, commonly called the Wood-cracker: described to me (for I had not the happiness to see it) to be about the bigness of a Sparrow, with a blue back, and a reddish breast, a wide mouth and a long bill, which it puts into a crack or splinter of a rotten bough of a tree, and makes a noise as if it were rending asunder, with that violence that the noise may be heard at least twelve score yards, some have ventured to say a mile from the place."—*Extract from Plot's 'Natural History of Oxfordshire' (1677).*

This is evidently the nuthatch, a species not omitted by Willughby, as Mr. Plot supposed. The account he gives of its habits is not accurate. Though it can, as is observed in Yarrell ('British Birds,' 4th ed., vol. i., p. 474), make a good noise upon a nut when it has fixed one in a chink, yet it does not make nearly so much as a woodpecker, nor does it do it in the same manner. Tunstall was the first to notice the mistake (Syn. of the Newc. Mus., p. 61), and after him Montagu (article Green Woodpecker), but Pennant and Donovan quote the passage with approbation.—*J. H. Gurney, jun.*

**The Roller.**—The beautiful roller has occurred in several well-authenticated instances in Norfolk, but Mr. Stevenson remarks that except in two or three cases he has been wholly unable to trace the specimens ('Birds of Norfolk,' vol. i., p. 311). I have just ascertained the fate of one of these lost rarities, which was shot at Antingham, near here, and, still better, had the specimen presented to me. It appears that it was taken to Mr. Spink, a barber and birdstuffer (why do these trades so often go together?) at North Walsham, and some attempt was made to keep it alive, but, being a good deal shot in the legs, it died on the third day. My father happened to be passing through, bought the bird, and gave it to the gentleman who has now most kindly—after having it in his possession thirty years or more—made a present of it to me. The earliest notice of the



roller in Great Britain is by Sir Thomas Brown in 1664, and the next, apparently, by Borlase in 1765 (see p. 41 of additions to Borlase, 'Natural History of Cornwall,' in the 'Journal of the Royal Institution of Cornwall'). This latter is said to have passed into Donovan's collection, which was dispersed in 1817. Linneus, with his usual accuracy, says that rollers feed on small frogs, which is perfectly true.—*J. H. Gurney, jun.*

**The Barn Swallow of America.**—I have a specimen of the American barn swallow (*Hirundo horreorum*, Barton), which is interesting from the place of capture. I am told by the taxidermist of whom I purchased it that his nephew caught it on board ship, three hundred miles off the island of Cuba. The following are points of distinction, given in the 'North American Birds' (vol. i., p. 339), between the English swallow and the American—too much stress must not be laid on them, as they are very variable:—"Hirundo rustica is perfectly distinct, though closely allied. It differs essentially from the American *H. horreorum* in much longer outer tail-feathers, and in having a very broad continuous collar of steel-blue across the jugulum, entirely isolating the chestnut of the throat; the abdomen appears to be much more whitish than in the American species." The supposition that *H. horreorum* is a visitor to this country (Zool. 5035, 5039; 'Birds of Middlesex,' p. 124) has met with no confirmation. General opinion decided that it must be the Egyptian swallow (*H. Savignii*, Steph.), which, from geographical reasons, was more likely, and which in the adult bird has the under parts dark chestnut; but now the opinion seems to be that it is only examples of *H. rustica* (which in a certain state of plumage are very chestnut underneath, though not so much so as *H. Savignii*), which have been mistaken for something rarer in different parts of Europe. Mr. Dresser says that he has "as yet failed in finding any example of *Hirundo Savignii* from a locality north of the Mediterranean" ('Birds of Europe,' pt. xxxvii.).—*Id.*

**Late Swallows and Martins.**—On the 13th of November last martins were seen by my friend Mr. Montagu Knight, of Chawton House, in this neighbourhood, and in the previous year swallows were flying on the 12th and martins on the 21st of November.—*Thomas Bell; The Wakes, Selborne, Alton, Hants; January 24, 1876.*

**Swallows in December.**—Stragglers of the Hirundines were occasionally seen up till the end of November, but the snow at the beginning of the following month seemed to cut short their wanderings. On the morning of the 14th or 15th of December, almost before the sun had risen, I saw three swallows flying dreamily and silently about a stack of chimneys in the street. The snow had disappeared, but there had been a sharp frost during the night, and the swallows, which were doubtless birds of the year, looked quite out of place skimming over the frost-covered tiles of the houses. Where could they have been, and what were their powers of abstinence?—*G. B. Corbin.*

**Stock Dove.**—The stock dove (*Columba ænas*) has been commoner than usual this autumn, and I think I may say that it is increasing considerably in this neighbourhood. This bird used to breed plentifully in the rabbit-holes in the warrens on the wolds, and when these were brought under cultivation they were of course dispersed, and I at first thought the increase might have arisen from this source; but now that I meet with them breeding almost everywhere, and quite close to the town, I begin to think they must be on the increase. Their mode of nesting is very various, sometimes on the ground under whin bushes, and when the warrens were ploughed out many nested the first year at the bottom of the hedges near, but they have all disappeared from there now, and breed in the same situations as the common ring dove—if anything higher up in the fir trees. I have found several quite at the top: they are very fond of the hole in a tree, when such is to be found suitable; but the demand very much exceeds the supply, and they have in consequence to be content with the holes about the roots. Our low grounds are much frequented by them in the winter and spring, and I have noticed they are usually in flocks by themselves or in pairs, and not mixed with the ring dove, though in the woods both kinds flock together. They resort to the same places for food as the ring dove—viz. old stubbles, reeds, &c.—and in snow to the tops of turnips. They are much more frequently seen in the game shops now than formerly; at least I think so. The keepers hereabouts call them “rock pigeons,” not distinguishing between them and the true *Columba livia*. The latter bird, by the way, visits our pigeon-cotes in numbers in the winter, mingling with the tame birds, but they all leave again in the spring, if permitted to do so, which I fancy is not very often.—*F. Boyes.*

**Deinornis.**—New Zealand papers just to hand report an interesting discovery of moa bones in that colony farther north than any have previously been found. No remains of the extinct bird having been discovered north of the town of Auckland, the moa region was supposed to have lain altogether to the south of that place. The advices now received, however, state that numerous bones, representing the skeletons of fifteen moas, have been found along the beach for many miles north of Whangarei Heads, sixty miles to the north of Auckland. The discoverers were Mr. George Thorne and Mr. Kirk, the Secretary of the Auckland Institute. With the moa bones were discovered several human skulls and a complete human skeleton in a sitting posture (the position in which it was usual to bury Maoris); also many large pebbles, such as the moa was in the habit of swallowing with its food, a rude stone hatchet, and some chips of obsidian. The spot where the remains were discovered was at one time covered with vegetation, but this having been burned by bush fires the ground had been covered by drifting sand, the disturbance of which by the wind has exposed the bones. The natives in the district had no knowledge whatever of the existence of

any of the remains discovered, whose antiquity is believed to be considerable. Further researches in the same locality may possibly be productive of interesting results.—‘*Nature*.’

**Notes on Cranes.**—I shall make no apology for referring again to a short paper on the migration of cranes which marked the year 1869 (S. S. 1841) which I drew up at the request of the Editor, where I have stated that I received a very fine specimen—it weighed ten and a half pounds—in July, from Hickham Moor, near Lincoln. This bird is decidedly older than my Cheltenham example (S. S. 1803), which only weighed eight pounds and three quarters. It agrees pretty fairly with a specimen in the Lynn Museum, which was one of the same flight, and which, though supposed at the time to be a young female (S. S. 1910), is, I suspect, an old one in change, and also with a specimen in my collection which the late Dr. Saxby shot in Shetland in 1865, and of the chase and capture of which he has given one of the most graphic descriptions I ever read (Zool. 9767—9772); where, among other things, he mentions the ova of some kind of parasite on the axillary feathers; and, again, he observes the same thing on another specimen (Zool. S. S. 1764). Both mine were infested in this way. According to the late Mr. Denny it would be the ova of *Lipeurus ebræus* (Mon. Anopl. Brit. 179, pl. xiii.), an opinion confirmed by Mr. Cocking, to whom I submitted them. Mr. Newcome, of Feltwell, has a crane unlike any that I ever saw. It has a white neck and back, and is white spotted all over. It was shot in 1836, and is the first one mentioned in the ‘*Birds of Norfolk*’ (vol. ii., p. 128).—*J. Gurney, jun.*

**Purple Heron in Norfolk.**—In my note on the species in the last number of the ‘*Zoologist*’ (S. S. 4775), I described the bird as “recorded by Lord Kimberley in ‘*Land and Water*’ of October 23rd,” whereas I should have said, recorded by the Rev. F. O. Morris, on the authority of Lord Kimberley. His lordship, in a letter to Mr. Morris, dated October 15th, announces the capture of the heron as “a few days ago,” and not being aware of the exact date on which it was shot, I stated in my note that it was just prior to the 15th, the date of Lord Kimberley’s letter. Mr. Gunn, however, in his record of the same bird (S. S. 4787), says, it was killed on the 25th of September, and brought to him next day in the flesh, by Lord Kimberley. I draw attention to the discrepancy in the above statements, because the date of capture of a rare species is often important, and it seems strange that Lord Kimberley should have written on the 15th of October, that the bird was killed “a few days ago,” if it was procured just three weeks before.—*H. Stephenson; Norwich, February 21, 1876,*

**Night Heron near Kingsbridge.**—A young spotted specimen of this bird was shot on the 7th of January: it was flushed from a bed of reeds in the vicinity of the River Avon. Some twelve years since, in October, I procured a similar specimen, except that some of the down was quite visible

at the tip of the feathers from about the same locality; and a full dressed male a few years before. How many moults does this bird make in attaining the full dress, and does it ever breed in this country, having occurred in its nestling dress as early as October?—*Henry Nicholls, jun.; February 8, 1876.*

**Glossy Ibis.**—In the 'Zoologist' (S. S. 1917), Baron von Hügel notes the occurrence of a glossy ibis on the river Dart; he describes the specimen at some length, which he states "is nearly in full plumage." Through his kindness it is now in our collection. Though very good for a British one, it is some way off being in full plumage, being speckled with white feathers about the head, and lacking the rich bay which characterises the adult. I said some time ago (S. S. 3023) that the purple heron, squacco heron and night heron, though always accidental migrants in Norfolk, had been much more plentiful prior to 1833 than they had been since. The same remark seems to apply to the glossy ibis. Mr. Stevenson ('Birds of Norfolk,' vol. ii., p. 191) enumerates eleven specimens between 1818 and 1833, as against two since.—*J. H. Gurney, jun.*

**Woodcock's Mode of Carrying its Young.**—At p. 3260 an extract is given, from a work on the Natural History of a part of Hampshire, in corroboration of the breeding of the woodcock in that portion of southern England. The extract begins:—"Many a time in the cold days of March have I seen the woodcock in the new plantations of Wootton, carrying their young under their wing, clutching them up in their large claws." I hope I shall not be deemed an unreasonable critic if I say that this sentence needs amending. In the first place, I presume that by "claws" toes are meant. This is a mere slip; but how could any woodcock fly away with its young ones under its wing? The absurdity of the idea must strike any person on reflection. The woodcock neither uses its wings nor its toes for this operation, The young bird is borne away between the tarsi or legs, next to and touching the bird's belly.—*Id.*

**Baillon's Crake at Braunton Burrows.**—I shot a fine specimen of this pretty little crake by the side of one of the numerous pools on Braunton Burrows, on February 4th. When first observed, it was feeding out in the open; but as soon as it caught sight of me it scuttled off as fast as it could to the shelter of the thick rushes which surrounded the pool; and as it thus half run, half flew, I fired and winged it; and it was only by searching each clump of rushes carefully with my hands that I succeeded in finding it, as it had crept into one of the thickest tufts, where it had crouched down and was completely hidden. I have on former occasions caught glimpses of a small crake both on the burrows and marshes, but have never been able to secure one, as they were invariably close to shelter, and immediately on being seen ran off swiftly and hid themselves; and would never afterwards be flushed. I have no doubt it is not an uncommon species; but, on

account of its retiring habits, seldom seen.—*Gevrase F. Mathew; Instow, North Devon.*

[See Zool, ante, S. S. 485, *E. Newman.*]

**White Spotted Crake.**—A specimen of a pretty little rail has been received at the Zoo. I am doubtful by what name to call it, no name being assigned it at the time of my visit. So far as I am able to ascertain, two examples only of the bird have been previously received by ornithologists, and all three have a similar habitat assigned them—"captured at sea:" this little fellow is under the care of Mr. Travis in the Western Aviary, and appears full of health and vigour: he came on board off Santa Maria; the latitude and longitude of the other specimens I am unable to give.—*E. Newman.*

**Is the Common Waterhen Migratory or not?**—In the 'Field' of the 30th October last Mr. Cordeaux asks this question, and, though I am unable to answer it, I can tell him something about the bird in this district. With us on our river the waterhen is certainly not resident all the year, but arrives in great numbers in the spring to breed in the coarse grass, sedge and reeds which fringe the River Hull all the way north of Beverley, to a distance of, say seven miles, which is as far as the tide ebbs and flows, and where there is a lock erected across the river: perhaps, to be perfectly correct, I ought to say that the tide does not actually run so far up as this,—usually not much beyond Beverley,—still it backs up the water and enables it to rise considerably as far as this lock. This rising of the water causes it to overflow, in many places, the oozy portion of ground between the ordinary bed of the river and the real banks—a distance in most places of twenty or thirty yards; and this being grown over with sedge, &c., is a favourite place of resort for waterhens, spotted crakes, snipes, &c., and as I have before stated numbers of the former annually arrive to nest, and after having reared their young and moulted—for the waterhen is one of those birds which casts all the large feathers of the wings at once, and is then wholly unable to fly—they leave us, though it is difficult to say where they go; still they must migrate in quantities, as all the blow-wells, springs and margins of streams in this neighbourhood are tenanted in the summer by waterhens which are there for nesting purposes, and which no doubt rear great numbers of young; and before winter comes on, the great majority of them leave us, for the number which frequent running streams, blow-wells (which never freeze), old moats, &c., then bear no comparison to those we have in the summer. Still it is but fair to mention that the birds on our river are in a great measure driven away to seek a more sheltered locality, as a large part of the sedge is annually cut and taken away: then again the result would be much the same if this mowing did not take place, as the tides in the winter are so high that the whole of their haunts are submerged, and, shelter being no longer possible, the birds would be compelled to migrate elsewhere; and after all, they may leave the country,

but only take up their winter quarters in a more suitable and sheltered district. That the waterhen possesses good powers of flight there is no question. I have myself flushed one on the riverside which rose high in the air like a pheasant, and flew straight away for nearly a mile that I could see, and it seemed to be going as quickly and as high then as ever. I have also frequently had them pass me at night, going very quickly, and uttering occasionally a peculiar cry, that is usually said by the people hereabouts to proceed from an owl, and which noise is often heard at night far away from any place where waterhens are known to be. I have never known them to make this cry except when on the wing, and it is different altogether from the note (crick) so often heard from amongst sedge, &c.; that it is a waterhen, and not an owl which makes this noise, I have proved over and over again, though I confess it was years before I did so. In severe weather, and when the ground is covered with snow, waterhens commonly climb into thick whitethorn bushes, hedges, &c., and remain there during the day. I think they resort to these places for concealment, and not for the purpose of getting ivy berries, haws, or anything of the kind. What makes me almost certain that such is the case is I knew a stream frequented by waterhens, and which had no shelter in the shape of coarse grass, &c., in which the birds could hide themselves, and they always climbed into a very tall whitethorn hedge, and remained in the thickest part amongst old sparrows' nests, &c., and when night came on they sallied out to the stream.—*F. Boyes.*

**The Original and correct Spelling of Shieldduck.**—I observe that the name shelduck is generally printed shieldduck or shieldrake in the 'Zoologist.' As naturalists are now pretty well agreed that shelduck is the right spelling, it might be well to spell it so in future. *Sheld* is an ancient word, meaning particoloured. The old writer Willughby says, "It is called sheldrake, from its being particoloured, *sheld* signifying dappled or spotted with white" ('The Ornithology, p. 28, cf. p. 363): and the Rev. C. A. Johns in his excellent work upon 'British Birds' says that the word "shelled" in the sense of variegated is still current in the eastern counties of England (p. 493.) Walcott in his 'Synopsis of British Birds' writes, "*Sheld*, particoloured; inde sheldrake," and refers to p. 85 of 'Ray's Collection of English Words,' a work I have not in the house; but I am sure that Ray was much too careful to give a word in his collection, on the faith of Willughby or any other person, which he had not himself verified. Other authorities might probably be raked up, but enough has been said to show that we ought to go back to the original spelling, which is the correct one, and not leave the incorrect one now in use until it becomes too firmly established to be got rid of. There are other birds which for the same reason as the shelduck have received names with the same beginning, but I will only call up one of them as evidence, the goldeneye, which was called *shelden*, according to Willughby (*l. c.*, 18), and Morton, 'Natural History of Northamptonshire' (1712), p. 431.—*J. H. Gurney, jun.*

**Smew near Old Malton.**—A male specimen of this bird in full plumage was shot on January 14th, on the Derwent, near Old Malton, and is now in the possession of Mr. George Edson.

**Smew at Taunton.**—On Wednesday, January 26th, Mr. Petherick, of Taunton, shot a male smew (*Mergus albellus*) near Durston. The plumage of the head is loose and silky. The head, neck, breast, wings and under body are white: the wings are crossed with black; the centre of the back and wings are also black. In the female the colour tends to chestnut. The smew is a rare bird in this locality.—*H. R. Prince; Fore Street, Taunton.*

[Mr. Prince does not mention that a female was obtained.—*E. Newman.*]

**Hooded Merganser.**—Having lately been devoting some attention to the subject of rare and doubtful British birds—a subject in which I already see there is a great deal to be done—I am interested, and at the same time perplexed, to find a record of the death of a pair of hooded mergansers near Sheerness, in the 'Zoologist' for June, 1870. I trust I shall not be considered as arrogating to myself any special knowledge over and above Mr. G. F. Mathew, if I intimate a doubt as to these birds being correctly named. I have no wish to act the critic, but I do respectfully wish that he would make further investigations, so as to satisfy me and other readers as to what the birds were. I have seen the original specimen which was shot at Yarmouth, and which after passing through several hands was added to the collection of Mr. Selby, at Twizell. It is in the plain "dun diver" dress. It had never been stuffed, and I believe it is now in the magnificent collection of skins at Cambridge. That occurred in 1829. Sixteen others are supposed to have been shot or seen since.—*J. H. Gurney, jun.*

**Retention of Summer Plumage by Grebes.**—Mr. Boyes thinks that some grebes retain much of their summer dress through the winter (S. S. 4299). I do not think they are so prone to it as divers (*Colymbus*). I have however received the great crested grebe with a complete tippet as early as the 25th of March. I have frequently noticed that the feet of grebes, and also of coots and waterhens, give out a kind of oil long after they are skinned, to the great detriment of other specimens which may be in the same drawer with them. A damp room, which is the worst thing there is for a collection of birds, will draw it out.—*Id.*

**Waterford Great Auk.**—At p. 1449 (S. S.) I gave some previously unpublished matter about the Waterford Harbour great auk obtained from Dr. Burkitt. I now wish to supplement my paper with some additional remarks, which through his kindness I am able to do. Dr. Burkitt informs me that being formerly in the habit of preserving the bones of the sternum, back, neck and thighs of all but common species, he did preserve the bones of the great auk also; but it is not known whether they are now in the Dublin University Museum, or where they are. The following is an

extract from a letter addressed to Dr. Burkitt by Mr. S. D. Goff, dated "Horetown, New Ross, April 30, 1868":—"I perfectly recollect, many years since, my late father purchasing—I think from a Tramore man—what I until now supposed was a penguin—a large brown and white bird, sitting up straight on the tail, and with very small wings; but I can give no information as to the time, place or circumstances of the purchase. Before forwarding to Horetown, he had it for a short time in what was then called the wash-house garden, at Mary Street, but which is now absorbed in the brewery yard; it had then only a pan of water." Dr. Burkitt retains Mr. F. Davis's letter "which accompanied the bird," which may one day be thought a curiosity.—*J. H. Gurney, jun.*

**The King Penguin at the Zoo.**—After a residence of thirteen weeks at the Zoological Gardens, this beautiful bird has succumbed to the fate of all such captives—dying of lung disease. I continually visited him, and saw from a peculiarity in his breathing that his end was approaching. My object, however, is not to pen an obituary notice of my feathered friend, but to state that he suffered from another disease—*hydrophobia*, the dread of water. Nothing could induce him to enter the water: if *compelled* to take the water, he would struggle out of it without loss of time, and thus regain *terra firma* with the least possible delay. A smaller penguin—I believe *Eudyptes demersus*—is also dead; but this individual had no horror of water, as was evinced by his keen pursuit of gudgeon and dace in his stone basin.—*Edward Newman.*

**Iceland Gull at Aldeburgh.**—An immature specimen of the Iceland gull was shot at Aldeburgh, Suffolk, on the 15th of January, 1876.—*F. Kerry; Harwich.*

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## Proceedings of Scientific Societies.

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### ZOOLOGICAL SOCIETY OF LONDON.

January 18, 1876.—ROBERT HUDSON, Esq., F.R.S., Vice-President, in the chair.

Prof. A. H. Garrod read a paper on a peculiarity in the carotid artery and on other points in the anatomy of the ground hornbill.

Mr. E. R. Alston read a paper on the classification of the order Glires. Lilljeborg's suborders Glires simplicidentati and duplicidentati were recognised, the former being divided into sections equivalent to Brandt's suborders Sciuromorphi, Myomorphi and Hystricomorphi. A third suborder was proposed for the reception of the fossil form *Typtotherium*.

A communication was read from Mr. E. A. Liardet, containing notes on the land shells of Taviuni, one of the Fiji Islands, with descriptions of several new species.



Mr. E. A. Schäfer read a paper prepared by himself and Mr. D. J. Williams, on the structure of the mucous membrane of the stomach in the kangaroos, in which he gave a minute description of the histological characters of the different portions of this organ.

A communication was read from Mr. W. H. Hudson, containing notes on the habits of the rails of the Argentine Republic.

The Hon. W. H. Drummond read a paper on African rhinoceroses, in which he gave reasons for believing in the existence of five species in Africa, including *R. Oswelli*, which, however, might probably be merely a variety of *R. simus*.

[The following abstract of Mr. Drummond's paper on the species of African rhinoceroses appeared in the 'Field' of January 22:—

“At the last meeting of the Zoological Society, held on the 18th inst., amongst various papers read was an interesting communication from the Hon. W. H. Drummond on the subject of African rhinoceroses, in which the author expressed his views on the much-vexed question as to the number of species which inhabit the African continent, and detailed his personal experience of the species which he had himself met with. It has generally been supposed that two species only existed in this part of the world—*Rhinoceros simus* and *R. bicornis*; but the published observations of sportsmen and travellers within recent times certainly point to the existence of a third, the so-called *R. keitloa*. Mr. Drummond has good reasons for believing that there are at least four, if not five, species, which have been more or less hitherto confounded. The species he would discriminate as follows:—

“1. *R. simus*, an animal measuring somewhat over 12 ft. in length, and about 5 ft. 10 in. in height, having a square nose and large rounded horns, the anterior of which averages about 2 ft. 6 in. in length, though not uncommonly found measuring 3 ft. 6 in., or even over 4 ft.; the posterior rarely or never exceeding 15 in., and generally speaking not being more than 12 in. It inhabits all the country south of the Zambezi, and there is some reason to believe in its existence in Central Africa. It feeds solely on grass and small herds are sometimes seen together.

“2. *R. bicornis major*, a much smaller animal, about 11 ft. in length, and 5 ft. in height, with an elongated head, and prehensile upper lip; the horns being thicker in proportion to length than those of *R. simus*. The anterior averages 20 in. or 22 in. in length, and never attains to more than 20 in. or 28 in.; while the posterior averages 10 in. or 12 in. It is found in all the country south of the Zambezi; inhabits thorn thickets chiefly (in which *R. simus* is never found); but occasionally occurs in other jungle or open. It feeds chiefly on thorn leaves and branches, though also eating grass, and is gregarious, five or six being sometimes found together.

“3. *R. keitloa*, whose measurements differ but little from those of *R.*

*bicornis major*, excepting in the formation of the head, which is somewhat shorter and broader, with a less prehensile lip. Its chief characteristic is the posterior horn, which is flattened at the sides, being of almost equal length to the anterior, and even being occasionally the longest, 20 in. and 22 in. being above the average. They exist sparsely in all the country south of the Zambezi, being very rare, and not gregarious, though a bull and cow are generally seen together.

“4. *R. bicornis minor*, the smallest of all, being seldom over 10 ft. in length, or more than 4 ft. 7 in. in height. The head is the most elongated, and the nose the most prehensile, of all the species, while the legs are shorter in proportion, and the foot smaller. The anterior horns rarely exceed 12 in., and the posterior 7 in. or 8 in. They are only, within Mr. Drummond's personal knowledge, found between Zululand and the Limpopo river, though he mentions one instance of two having been killed further north, not far from the Zambezi. They are not gregarious, two full-grown ones, and a calf being the most ever seen together, and they live solely on thorns, leaves and shoots, being rarely, if ever, found out of thorn jungle.

“5. *R. Oswellii*, which in no way differs from *R. simus*, except in the fact of the front horn pointing forward, or in some cases even downwards, and which Mr. Drummond does not consider to be a distinct species, but merely an accidental and local variety.

“Whether Mr. Drummond's views will prove to be correct or to require modification, the value of his testimony on the subject must be admitted. It is impossible for scientific naturalists at home to determine the question of species by a mere examination of horns in a museum, ignoring, or at least undervaluing, the observations of those who have seen and studied the wild animals in their native haunts. A solution of the difficulty can only be arrived at by a careful consideration of the anatomical differences revealed by diagnoses of the skulls of each of the so-called species (and several specimens of each), and the variations of haunt, habit, food, and other peculiarities, as detailed from actual observation of the wild animals. The real desideratum at the present time is a collection, or series, of skulls, accompanied in each case with particulars of the animal to which it belonged, when and where killed, colour, and external measurements of the whole animal, and estimated age in the opinion of the captors. Any sportsman or traveller who may have the means, or the opportunity, for bringing such a series to London for the use of the Zoological Society—and we believe Mr. Drummond has already expressed an intention of so doing—will by this means render a most important service to zoological science.”]

A communication was read from Mr. E. Pierson Ramsay, containing a continuation of his remarks on the birds met with in North-Eastern Queensland, chiefly at Rockingham Bay.

A communication was read from M. L. Taczanowski, containing the description of a spotted deer found in Southern Ussuri—district of Amoorland, for which he proposed the name *Cervus Bybowskii*.

Mr. A. G. Butler communicated a revision of the Lepidopterous genus *Teracolus*, with descriptions of the new species.

February 1, 1876.—G. R. WATERHOUSE, Esq., Vice-President, in the chair.

The Secretary read some extracts from a report of a recent visit made by H.M.S. 'Petrel' to the Galapagos Islands, communicated by the First Lord of the Admiralty, and referring to the tortoises met with in the different islands of the group.

Mr. Sclater exhibited and made remarks on an antler of a *Rusa* deer, living in the Gardens of the Acclimatisation Society of Melbourne which had been sent to him for identification.

Mr. Frederick Selous, jun., exhibited and made remarks on a series of horns of African rhinoceroses procured by himself in South Eastern Africa.

Prof. Huxley, read a paper on the position of the anterior nasal aperture in *Lepidosiren*, which he showed to be strictly homologous with the position of these organs in other Vertebrates.

Mr. A. H. Garrod read a paper on the anatomy of *Chauna Derbiana*, and on the systematic position of the screamers (*Palamedeidae*), in which he controverted Prof. Parker's collocation of this form with the Anseres, and showed that it should occupy an independent position with relations to the Struthiones, Gallinæ and Rallidæ.

A communication was read from Mr. F. Jeffrey Bell, containing notes on the myology of the limbs of *Moschus moschiferus*.

A communication was read from Dr. T. Spencer Cobbold on Entozoa, forming the third of a series of papers on this subject brought by him before the Society.

Mr. Herbert Druce read a list of butterflies collected in Peru, with descriptions of new species. To these were added some notes on some of the species by Mr. Edward Bartlett.

Mr. A. G. Butler read some notes on a small collection of butterflies received from New the Hebrides.

A paper by Mr. P. L. Sclater and Mr. O. Salvin was read, in which they gave descriptions of some new birds obtained by Mr. C. Buckley in Bolivia.

February 15, 1876.—Prof. MIVART, F.R.S., in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of January, 1876, and called particular attention to a Le Vaillant's *Cynictis* (*Cynictis penicillata*) presented by Viscount Mandeville; a white spotted crane (*Porzana notata*), captured

at sea off Cape Santa Maria, Uruguay, and received January 19th; and a panda (*Ailurus fulgens*), purchased.

Mr. Sclater exhibited the parrot called, in Tschudi's 'Fauna Peruviana,' *Conurus Illigeri*, and observed that it had been certainly wrongly determined. Mr. Sclater was of opinion that the bird belonged to a species hitherto unrecognised, and proposed to call it *Ara Couloni*, after M. Coulon, of Neuchatel, who had sent the specimen for exhibition.

Dr. Cobbold exhibited and made remarks on a parasite (*Echinorhynchus*), obtained from the Tamandua anteater, which had died in the Society's Menagerie.

Mr. W. K. Parker read the second portion of his memoir on *Ægithognathous* birds.

A communication was read from the Rev. O. P. Cambridge, in which he described a new order and some new genera and species of Arachnida from Kerguelen Island, from specimens collected by Mr. T. Eaton during the Transit of Venus Expedition.

Mr. G. French Angas communicated descriptions of four new species of land shells from Australia and the Solomon Islands, which he severally proposed to name *Helix Noresbyi*, *Helix Ramsdeni*, *Helix Beatrix*, and *Helix Rhoda*. Mr. Angas also made some remarks on the nomenclature of *Helix Angasiana* of Pfeiffer and *Helix bitaniata* of Cox.

Mr. Sclater read some notes, by himself and Mr. Salvin, on some of the blue crows of America, taken from specimens lately examined, and pointed out certain changes which it would be necessary to make in the nomenclature of the group adopted in their 'Nomenclator Avium Notropicalium.'—*P. L. Sclater, Secretary.*

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#### TO CORRESPONDENTS.

Messrs. WOODWARD.—The birds arrived safely. Mr. Gurney has kindly affixed a label and name to each as under:—

The large yellow-bellied shrike	<i>Laniarius icterus</i> .
The small yellowbellied shrike	„ <i>quadricolor</i> .
The reddish-breasted shrike .	„ <i>rubiginosus</i> .
The broad-beaked flycatcher .	<i>Platyrhynchus capensis</i> , female or young.
The bird with yellow margin to the wing- and tail-feathers }	<i>Campophaga nigra</i> , young male in change.

Mr. Gurney adds:—"The five species are all given in Layard's first edition, but his description of *Laniarius icterus* is incorrect, the specimen he described having in reality belonged to another species, which he afterwards explained in the 'Ibis.' Your friends may like to know this."—*J. H. G.*

*Mr. Saville Kent's Lecture, at the Society of Arts, on "The Aquarium: Construction and Management."*

IN my review of Mr. Lloyd's 'Official Handbook to the Crystal Palace Aquarium' (S. S. 3661, 3701, 3741), I think I have incorporated and—by the accident of a heliacal rising—forestalled all the information to be derived from Mr. Kent's lecture just delivered at the Society of Arts—always carefully excepting his notes on whitebait, herring and lobsters, which are valuable, and in great measure new. Mr. Kent represents his success as complete in proving whitebait to be the young of the herring, a fact previously asserted by Dr. Günther, from an examination and comparison of the structure of these two supposed distinct species of fish: he also states that he reared a "remarkably large shoal" of that invaluable crustacean, the lobster, hatched out from a fine hen in the summer of 1874—two achievements of the highest scientific interest as well as commercial importance, of which more hereafter.

The lecture,—a copy of which I have received from Mr. Kent,—by contrasting two systems of management, as Mr. Kent has done, conveys an erroneous impression, which I must attempt to remove: he speaks of one in action at Brighton as the "aërating system," and one in action at the Crystal Palace as the "circulating system." The facts of the case may be stated thus:—At Brighton the so-called "aëration" is effected "by passing through the tanks a stream of atmospheric air discharged through pipes into the bottom of the water," and rising in large bubbles to the surface. The Crystal Palace Aquarium "effects the oxygenation of the water by its actual circulation from place to place, thus presenting fresh oxygen-absorbing surfaces to the atmosphere." Now the fact is that the Crystal Palace Aquarium and all similar ones are not constructed on the circulating system *only*, but on the aërating system *also*, the Crystal Palace Aquarium possessing an infinitely more complete and efficient mode of aëration than the Brighton. The term "oxygenation" is in perpetual use by the managers of aquariums and the writers thereanent, without their appearing to make much attempt to explain or even to understand its meaning.

In the Crystal Palace, where every tank is exposed to view, we

all see the water introduced by the two methods: *first*, by that simple and well-understood law of gravitation by which water always seeks and finds its level: by this simple power it flows from tank to tank until it reaches the *lowest*, when it plunges into the dark reservoir underground, thence to be pumped up again into the *highest* by steam power, to recommence its descent. This is essentially the "circulating system," the water being constantly in motion,—in fact, being a sea-water stream, always running in a ring,—and, were it not for the apparent contradiction in terms, I should say always fresh and health-imparting.

The *second* method is also achieved by the power of steam, which drives a second and a smaller stream of water into each tank with such force that it carries atmospheric air with it to the depth of two feet, more or less, below the surface of the water already in the tank; by this process the air becomes divided into minute bubbles—infinitesimally minute they certainly are. These bubbles, after descending as low as the force exerted can possibly impel them, quietly reverse the direction of their course, and ascend in the most deliberate manner to the surface, thus presenting a spectacle exactly similar to that produced by throwing silver sand into water, but the air moving in an opposite direction to the sand—upwards instead of downwards—a beautiful and interesting spectacle is presented—one which often takes the spectator by surprise as being contrary to the laws of gravity for the supposed sand to rise towards the surface of water. Were not this second process superadded to the circulating process, the two systems might be fairly contrasted, but when either of the aquariums possesses the merits and advantages of both, surely all comparison and contrast is out of the question: when you desire to test the respective merits of two horses you do not harness them abreast: the Crystal Palace does this because it does not aim at competition, and therefore superiority is inevitable. Were not this process superadded to the circulating process the two systems of management might be fairly contrasted; but as the matter stands the Crystal Palace has all the advantages of the circulating system combined with the most perfect aëration that has yet been devised: it would therefore be more exact to say that Brighton makes use of but one system while the Crystal Palace avails itself of both.

Having set this matter in its proper light, I proceed to quote, *in extenso*, Mr. Kent's remarks on the culture of whitebait,

which it is impossible to read without feelings of the deepest interest.

“Referring to Mr. Lee’s report upon the salmon, the ‘Field’ newspaper has indicated the desirability of gaining a similar intimate knowledge of the life-history of the ‘whitebait.’ The furthest step, I believe, in this direction, but towards which there are yet some few links wanting, have been achieved by myself at the Manchester Aquarium, the only institution of the kind where this fish, as whitebait, has up to the present time been permanently established. As is already generally recognised, this whitebait is not, *sui generis*, a distinct species of fish, as formerly described, but, as proved by Dr. Albert Günther, of the British Museum, the young or fry of the herring (*Clupea harengus*), which, in this young or ‘whitebait’ stage, visits the estuaries and shallow waters generally around our coasts. During the summer and autumn of the year 1874 several hundreds of these little fish were imported to Manchester by me from Mr. J. S. Parry Evans’s salmon weirs at Colwyn Bay, North Wales, a distance of some seventy miles. A number of these are still in a flourishing condition, and have, during the eighteen months or more of their captivity, grown, in the most favourable instances, to fully half the size of a full-grown herring, with which species there is now no gainsaying their identity. In the open sea, where the supply of food is much more varied and abundant, and the fish is not submitted to the artificial conditions inseparable from an aquarium, it may be predicated that the growth is even more rapid, and that from two to three years is at the outside the total length of time required for the development of a newly-hatched whitebait into an adult herring. In the ‘Handbook to the Crystal Palace Aquarium’ it is stated that these fish (herrings) have not been kept at all at that institution, and that the failure cannot be accounted for by reference to any known cause, as also that it has not been shown yet that the species can be maintained for any but comparatively short periods in any aquarium yet devised. This last statement should certainly have been altered or excised in the present edition, herrings having been among the most interesting fish permanently on exhibition at the Brighton Aquarium for many years past, while at Manchester they have, in their younger stage, thriven equally. The causes operating against the maintenance of these fish at the Crystal Palace, again, are surely not so occult as to justify Mr. Lloyd in altogether despairing of

adding them to his *menage*. London is not situated so far from a prolific whitebait ground as is Manchester, and it would appear that Mr. Frank Buckland has already succeeded in bringing specimens up the Thames to the metropolis alive, although these died soon after, for the want of a tank suitable for their reception. The precautions requisite for preserving whitebait in health certainly exceed those that need be taken in association with many of the more ordinary varieties, the food question at Manchester proving in the first instance especially vexatious. Herrings, whether old or young, are partial to living food, feeding chiefly, in the latter instance, on Entomostraca and the larval conditions of the higher Crustacea. Such pabulum being difficult to obtain so far inland, a variety of substitutes were offered by way of experiment, but for a long time none successfully. Ultimately an irresistible *bonne-bouche* suggested itself, in the form of the hard part or adductor muscle of the common mussel. This substance minced fine, being clean, hard and white, with probably a somewhat crustacean flavour, was devoured with avidity by the little fish, and has constituted the chief staple of their existence ever since. In the course of a few weeks these whitebait became so accustomed to confinement as to readily take their prepared food from the keeper's hand—a circumstance which would seem to indicate that young fish, like the young of other animals, are more readily susceptible of domestication, adult herrings not being known to display an equal amount of confidence towards those who tend them. The food question being settled, another difficulty presented itself, and this time one that threatened, sooner or later, to accomplish the extermination of the whole shoal. Immediately succeeding their advent, a large number of these little fish were found dead each morning at the bottom of their tank—a circumstance which at first seemed inexplicable in association with their quiet behaviour throughout the day. A night inspection, however, happily revealed the cause of their rapid destruction. It was then seen that the nocturnal movements of the herring, at least in confinement, are altogether distinct from what obtain in daylight. In the latter instance these movements are very quiet and uniform, the fish swimming round their tank in one shoal and one continuous stream. At night, on the contrary, the shoal is entirely broken up, each fish taking an independent path and darting from one side of the tank to the other with an amount of agility scarcely to be anticipated by a mere daylight acquaintance



with the species. It was during these active nocturnal movements that the fish struck against the rockwork of their tank and came to an untimely end: this mortality, however, was soon arrested by placing a dim light over their tank, which illuminated the outline of the rockwork just sufficiently to enable them to recognise and avoid it. With this dim light the fish still retained their active habits, and it was noticeable that during these night hours they were more than ordinarily alert for food, dashing vigorously at any entomostracan or other minute organism that passed through the water. This circumstance would seem to explain why 'drift-net' fishing for herrings can only be carried on successfully at night, that being the time when the fish rise to the surface of the water, to feed on the innumerable organisms that there abound. They are, in fact, so ardent at such times in pursuit of their food that they needlessly strike into the meshes of the net and get caught, just as the individuals under artificial conditions dash against the rockwork of their tank, if sufficient light is not provided them for its avoidance. This plan of dimly illuminating the whitebait tank was practised with equal benefit in association with other species that exhibited a tendency to injure themselves during the dark hours of the night, such species again being usually free rangers of the sea. The picked dogfish (*Acanthias vulgaris*) was one of these, and a variety so given to rendering itself an unsightly object by knocking its head against the boundaries of its tank, till it lays the cartilage of its snout quite bare, that it is frequently refused admittance in aquaria. Observations made at the Manchester Aquarium, however, revealed that this self-mutilation was invariably effected during the night, and a small light enabling the fish to see and avoid the rocks was found an effectual preventive remedy."

But this is not the only success to which Mr. Kent lays claim: another is the artificial cultivation of the lobster; this, however, does not appear so entirely complete. I hope, not only for Mr. Kent's credit, but from its importance as a commercial enterprise, this second success may rival the first: here it is:—

"A remaining subject that occupied my attention at the Manchester Aquarium related to the artificial cultivation of the lobster. A remarkably large shoal of this crustacean was hatched out from from a fine hen in the summer of 1874, and a number of these were isolated in small glass vessels, and reared successfully through their numerous singular metamorphoses, until, at the end of two months,

the perfect form, though small, of the adult animal was attained. At this stage, unfortunately, a fishing excursion obliged the abandonment of their personal charge for a few weeks, and during that interim the little animals died. Such, however, was the measure of success up to this point, that I feel convinced that, with intelligent superintendence and adequate appliances, the artificial culture of the lobster might, if systematically pursued, become a very highly remunerative commercial enterprise. This subject will also be prosecuted, and it is to be hoped to a still more successful issue, at the aquarium now constructing at Great Yarmouth."

EDWARD NEWMAN.

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*Notes from Castle Eden.* By Mr. JOHN SCLATER.

(Continued from Zool. S. S. 4780.)

JANUARY, 1876.

*Great Blackbacked Gull and Missel Thrush.*—On the 4th I went to the sea-shore and saw nothing but a few great black-backed and common gulls. In coming home up the Dene my attention was drawn, by the harsh notes of some missel thrushes overhead, to a great blackbacked gull—mobbed by seven missel thrushes—flying inland up the Dene: one of them kept swooping so near at the gull as to leave me in doubt whether it did not actually strike it. The gull kept sailing on in a straight line, apparently taking little notice of its assailants. After keeping up the attack for about a quarter of a mile, six of the thrushes wheeled back to some lofty trees, leaving one to continue the chase some distance farther: this was no doubt the old cock, as they were most likely one family. In the autumn and winter I often find them moving about in small flocks of from twelve to fifteen. I have only once met with a larger flock: I saw twenty-seven on the 7th of October last, and thought they had probably assembled preparatory to leaving us; I saw them, however, several times up to the first week in December in the same locality, but not since. I am quite certain that the missel thrush is much more common in this neighbourhood than it was a few years ago.

*Roughlegged Buzzard.*—On the 10th a female of this species was brought to me, which had been seen about the Dene for

nearly six weeks, and though hunted all that time had eluded all attempts to shoot her: at last she was trapped, the trap being baited with a rabbit. One of the keepers declared that he got several partridges one day in consequence of her flying about overhead. The dimensions of this specimen are as follows:—Length, twenty-two inches and a half; expanse of wings when full spread, four feet seven inches and a half; from the carpal joint to the end of the fourth feather (the longest in the wing), seventeen inches; tail, nine inches and a quarter; the wings when closed reach a little beyond the tail. As to the plumage, which is altogether very dirty, I have carefully read what Professor Newton says, in his edition of Yarrell, and have come to the conclusion that it is a bird of the second year: the general markings are more like his description of the adult than the young bird; but the iris in this specimen is straw-coloured, thickly sprinkled with minute gray spots; the ear-coverts are nearly uniform grayish white; there is scarcely any trace of fawn on any part except the tibiæ and tarsi; the long feathers of the former are, in front, streaked down the shaft, and have two diamond-shaped brown spots; the remainder are irregularly barred with brown; the tarsi is marked with oblong brown spots; there is a new feather in the tail not quite grown—about half an inch short—in which the broad distal bar has an irregular fawn-coloured spot in each web, passing outwards into grayish brown, almost making another bar; this feather is deeply tinged with fawn and tipped with the same: the upper tail-coverts have two brown bars, except the two centre feathers, which have only a large spot of brown near the tip. The stomach of this bird contained the remains of a rat.

*Scarcity of Birds.*—On the 24th I went to the sea-shore and stayed about an hour without seeing a bird of any kind. I went again to the sea on the 25th, and walked seven miles along the beach, and only saw a few herring gulls, a small flock of ring plovers, and a young glaucous gull. I have never known so few birds about as at present: the fineness of the weather may have something to do with it—it is just like spring here. I heard the song of the missel thrush in different parts of the Dene on the 27th.

#### FEBRUARY.

*Spring Birds.*—Chaffinch singing on the 1st. A good many song thrushes had returned by the 4th. Great tit singing on the 9th.

*Redwing*.—On the 9th the snow brought the redwings back to the lawn and Dene, and I observed that their chief feeding-ground was under the yew trees; in turning over the dead leaves they were very quarrelsome. I have not seen a fieldfare since the 24th of January.

*Greater Spotted Woodpecker*.—One seen on the 10th a little north of the Dene. During a residence here of sixteen years I have only twice before met with this species.

*Kestrels and Royston Crows*.—On the 18th I observed the kestrels were already returning to their nesting quarters. I stood and watched for a long time two males and a female wheeling about the edge of a high rock; they were at last joined by two Royston crows, and it was really very pretty to see them swooping at each other; the crows apparently wanted to settle on the trees at the top of the rock, and the kestrels were determined they should not. The Royston crow has far more power on the wing than I had expected to see: they are very numerous here just now: they find plenty to eat in the shape of wounded or dead hares and rabbits, and an old horse quartered and hung up for the dogs is much frequented by them, but unfortunately for them it is too near the keeper's gun, and not a few, I see, have feasted and died there.

*Ring Dove, &c.*—On the 19th I heard the note of the ring dove. On the 23rd the partridges were screeching in almost every field: although there was a strong north-east wind and pelting rain, the sheltered parts of the Dene were ringing with song.

*Curlew, Stint and Ring Plover*.—I walked from Hartlepool to the Tees on the 24th, and did not see more than a dozen gulls, and on the "slake" I saw a flock of about fifty curlews and a large flock of what I thought were knots, but although I had a good glass I could not clearly make them out. There were also two large flocks of stints and a few ring plovers, all very wild; and no wonder, for I suppose, as there are so many "gunners" go there, that the birds get no rest. One of these "gentlemen" told me that he had never known a winter when birds were so scarce.

JOHN SCLATER.

Castle Eden, Durham.

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*A few Rough Notes from Beverley for the Close of the Year 1875.*

By F. BOYES, Esq.

THE close of the year was not remarkable in an ornithological point of view. East Yorkshire escaped the severe frosts and heavy falls of snow that were pretty general throughout the rest of the United Kingdom; indeed we had no snow worth mention, and the frost was never keen enough to freeze fairly over the floods in the carrs, nor was the ice at any time sufficient to bear on the shallow waters left from the floods. This district shared the fate of many others in the country: the river overflowed its banks, inundating the low-lying carrs for miles; and, as usual on such occasions, we were visited by large flocks of gulls, principally the common and blackheaded species—a large proportion of them immature birds. These carrs are annually visited by vast flocks of peewits, and they were more numerous than ever this autumn. I think we had an increase of golden plovers, too; also numbers of dunlins. The latter birds, though very wild in the daytime, can be approached as near as you please in the dusk of the evening: they are not worth a charge of powder at any time, but their lively motions, as they run along the edges and swim across the small pools of water, are very interesting: they are very active little fellows. The gulls could be seen arriving in straggling parties shortly after daybreak, and in the evening rising in a great body, or two or three large flocks, and going straight away, apparently towards the Humber. Whilst the water lasted we had a nice lot of ducks, but it was difficult to get near them; they were all, or nearly all, the common wild duck. Pochards, teal, &c., have been most unusually scarce, so much so that I have not seen a teal all the winter, and I attribute the scarcity of pochards, &c., on the river to the weather here not being severe enough, as the river was in grand order for them, not having a particle of ice on it.

Shorteared owls were unusually abundant, and our local bird-stuffer, Mr. Richardson, was fully occupied for weeks in making them into "screens," &c. An eagle was seen near the village of Easington for the greater part of the month of October, and a few buzzards and a peregrine or two were also observed in the same neighbourhood, but they made no stay.

Altogether there appears to have been scarcely anything worth

recording in this locality during the autumn and up to the close of the year.

DECEMBER, 1875.

*Snow Bunting*.—1st. Sharp east wind. Though there were no signs of winter at Beverley, we could see all the wolds were whitened over with snow, and on my driving there I found there had been a very sharp frost and a slight sprinkling of snow. I saw a few snow buntings.

*Shieldrake*.—3rd. An adult male shieldrake was shot at Etton, a village about four miles west of Beverley, but whether an escaped bird or not I could not tell: it bore no marks of having been in confinement.

*Stock Dove*.—4th. Wind E.N.E. Began to snow fast early in the morning and covered the ground over. Saw a quantity of stock doves (*Columba oenas*).

*Peewit and Golden Plover*.—5th. More snow; ground covered to the depth of about two inches; hard frost. Peewits and golden plovers passing over all day long, going directly southward. These birds leave us after the first heavy fall of snow and hard frost,—that means, as soon as they are no longer able to get food,—and very seldom return in any numbers, be the weather ever so mild, until the spring. Heard that a flock of swans, numbering twenty birds, had been seen flying along the river, but could not ascertain the date.

*Larks*.—6th. Wind still easterly and bitterly cold. Larks going north—a most unusual circumstance and unprecedented in my recollection: they were all flying the same way, flock after flock, though the flocks were not very large. I cannot account for it, unless they were birds that had been south, and found so much more snow there than here, and were returning.

*Merlin*.—7th. Slight thaw. An adult female merlin shot at Beverley to-day, also an adult male on the 8th, and a young male on the 14th: they have been quite common this winter.

*Green Sandpiper*.—8th. Thaw. Green sandpiper, male, shot at Beverley. I have several times previously known this bird to be shot in the winter.

*Blacktailed Godwit and Goosander*.—9th. A general thaw; nearly all the snow gone. An old female blacktailed godwit shot by E. Wheldrake on the foreshore of the Humber near Spurn.

A very fine old male goosander shot on the river to-day; and on the 13th another old male and a young male were both shot in the neighbourhood of Burton Agnes, near Bridlington.

*Rednecked Grebe.*—10th. A rednecked grebe, female, shot on the river. The stomach, as usual, was crammed with the feathers off its own breast, mixed with part of the backbone of a fish and a few pieces of vegetable substances.

*Brambling.*—24th. Saw a very large flock of bramblings containing some hundreds of birds: there have been numbers feeding beneath the beech trees lately.

*Birds at Spurn and on the Humber.*—27th. Weather extremely mild. Took a run down to Spurn—a place I have been in the habit of visiting for many years. There were numbers of snow buntings, many of them fine old birds. Saw a merlin and a stonechat. Very few birds on the mudflats—a few small flocks of knots, dunlins, curlews, &c.; but very few in comparison with what I have generally seen. On the Humber there were hundreds of ducks,—flocks that would almost cover an acre of ground,—and when they rose it was like distant thunder; they seemed principally what are called by the natives “black pokker” (scaups, &c.), though I saw a number of wigeon, mallards, &c.; and at night, along with the “whee-u” of the wigeon and “quack” of the wild duck, I heard once or twice the “creck” of the teal.

*Wild-fowl in the Game Shops.*—Where did all the wild-fowl come from that were to be seen in game-shops last November and December? Manchester, Birmingham, and all the large towns were supplied with immense numbers of ducks, teal, woodcocks, snipes, plovers, &c., and teal, I am told, were offered in Birmingham at fourpence each. This district could have contributed only a very small share of them. There must have been great slaughter somewhere.

F. BOYES.

Beverley, East Yorkshire.

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*Notes from West Sussex.* By W. JEFFERY, Esq.

NOVEMBER AND DECEMBER, 1875.

*Dotterel* (*Charadrius morinellus*).—A bird of the year was killed at Sidlesham on the 10th of November, and within a few days a second specimen in the same locality: the former I saw in the

flesh. The dotterel is rarely met with in this neighbourhood. I have no knowledge of its occurrence since May, 1859, when three were killed at Runcton, near Chichester, one of which is in my collection.

*Divers.*—The blackthroated diver (*Colymbus arcticus*) has been the most common of the three species along the coast this winter. I examined one at Chichester, on the 17th of November, which had a few black feathers only remaining on the throat. On the 1st of December I obtained a specimen from Pagham Harbour, in nearly perfect summer plumage, the upper part of the throat only having a few white feathers intermixed, giving it a gray appearance, the rest of the patch being of a pure glossy purplish black; the upper part of the head and back of neck a clear gray. The same day I saw two others, neither of which had any trace of the black throat; one of them was a very small specimen,—probably a bird of the year, perhaps a late-bred one,—measuring an inch less than two feet from tip of beak to tip of tail; bill, along ridge, one inch and three-quarters; carpus to tip, ten inches and a half: I examined this bird in the flesh. Several others occurred about the same time, some having a few of the black feathers, others none. In 1860 the redthroated diver (*C. septentrionalis*) was very numerous: I remember seeing seven or eight hanging in a bunch one day in Chichester Market, and for some years after this was the most common of the three species. Since then the great northern (*C. glacialis*) has predominated, the redthroated only occurring sparingly; and now, this winter, as before observed,—and as I see, by notes, from other parts,—the blackthroated has been of frequent occurrence, though generally said to be the most rare. On the 6th of December, 1864, I obtained a great northern in equally perfect summer plumage; and I see Mr. Gatcombe writes (*Zool. S. S.* 4783), “I have known this state of plumage as late as the middle of December.”

*Smew* (*Mergus albellus*).—December 5th. A smew, with red head, was killed at Bosham; and on the 10th I shot a female at Ratham. Two others—one an adult male—were killed about the same time in the neighbourhood. The stomach of my specimen contained freshwater shrimps, boat-flies and other insects.

*Spotted Redshank* (*Totanus fuscus*).—Saw one, in the flesh, on the 1st of December, killed at Pagham Harbour.



*Shorteared Owl* (*Otus brachyotus*).—Very numerous in November and December, great numbers finding their way to the bird-stuffers, being in demand for making into fire-screens.

*Fieldfares and Redwings*.—Fieldfares and redwings have been unusually scarce this winter.

W. JEFFERY.

Ratham, Chichester, February 21, 1876.

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### *Hereditary Hippopotamus Hunters of the Loangwa.*

IT is so seldom that we find much in the journals of African explorers, except the wearisome record of bargaining for cloth and beads with avaricious and treacherous tribes, that I thought the following description of hippopotamus hunting, the hereditary occupation of a tribe in Central Africa, might be acceptable to the readers of the 'Zoologist.' It is from the pen of the late Dr. Livingstone,\* and seems to depict the native African as somewhat higher in the manly characteristics of a savage life than we have been accustomed to regard him. It appears to have been written at Unyanyembé on the 7th July, 1872; but the doctor crossed the Loangwa, a northern tributary of the Zambesi, on the 15th December, 1866, in about lat. 12° 45' S., long. 32° 10' E., when and where, apparently, the hunters were met with. It is to be regretted that we have such meagre accounts of the domestic character of the members of this tribe, the men of which display great courage in their daily pursuits; whose bodies are finely proportioned and whose muscles are thoroughly developed—two characters which are probably largely dependent on the forced exercise to both lungs and muscles, in their frequent under-water swimming, necessitated by the destruction of their canoes and by the revengeful anger of their prey. It is notable that the members of the tribe bear entirely good characters amongst their neighbours, and that the women are tillers of the soil.—*F. W. F.*

“At the Loangwa of Zumbo we came to a party of hereditary hippopotamus hunters, called Makombwé or Akombwé. They follow no other occupation, but when their game is getting scanty at one spot they remove to some other part of the Loangwa, Zambesi, or Shiré, and build temporary huts on an island, where their women cultivate patches: the flesh of the animals they kill is

\* 'The Last Journals of David Livingstone.' 2 vols. 8vo. London, 1874. See vol. i., p. 159, and vol. ii., p. 206.

eagerly exchanged by the more settled people for grain. They are not stingy, and are everywhere welcome guests. I never heard of any fraud in dealing, or that they had been guilty of an outrage on the poorest: their chief characteristic is their courage. Their hunting is the bravest thing I ever saw. Each canoe is manned by two men; they are long light craft, scarcely half an inch in thickness, about eighteen inches beam, and from eighteen to twenty feet long. They are formed for speed, and shaped somewhat like our racing-boats. Each man uses a broad short paddle, and as they guide the canoe slowly down stream to a sleeping hippopotamus not a single ripple is raised on the smooth water; they look as if holding in their breath, and communicate by signs only. As they come near the prey the harpooner in the bow lays down his paddle and rises slowly up, and there he stands erect, motionless, and eager, with the long-handled weapon poised at arm's length above his head, till coming close to the beast he plunges it with all his might in towards the heart. During this exciting feat he has to keep his balance exactly. His neighbour in the stern at once backs his paddle, the harpooner sits down, seizes his paddle, and backs too to escape: the animal surprised and wounded seldom returns the attack at this stage of the hunt. The next stage, however, is full of danger.

“The barbed blade of the harpoon is secured by a long and very strong rope wound round the handle: it is intended to come out of its socket, and while the iron head is firmly fixed in the animal's body the rope unwinds and the handle floats on the surface. The hunter next goes to the handle and hauls on the rope till he knows that he is right over the beast: when he feels the line suddenly slacken he is prepared to deliver another harpoon the instant the hippo's enormous jaws appear with a terrible grunt above the water. The backing by the paddles is again repeated, but hippo often assaults the canoe, crunches it with his great jaws as easily as a pig would a bunch of asparagus, or shivers it with a kick by his hind foot. Deprived of their canoe, the gallant comrades instantly dive and swim to the shore under the water: they say that the infuriated beast looks for them on the surface, and being below they escape his sight. When caught by many harpoons the crews of several canoes seize the handles and drag him hither and thither, till, weakened by loss of blood, he succumbs.

“This hunting requires the greatest skill, courage and nerve that can be conceived—double-armed and threefold brass, or whatever the ‘Æneid’ says. The Makombwé are certainly a magnificent race of men, hardy and active in their habits, and well fed, as the result of their brave exploits; every muscle is well developed, and though not so tall as some tribes, their figures are compact and finely proportioned: being a family occupation it has no doubt helped in the production of fine physical development. Though all the people among whom they sojourn would like the profits they secure by the flesh and curved tusks, and no game is preserved, I have met with no competitors to them except the Wayeiye of Lake Ngami and adjacent rivers.

“I have seen our dragoon officers perform fencing and managing their horses so dexterously that every muscle seemed trained to its fullest power and efficiency, and perhaps had they been brought up as Makombwé they might have equalled their daring and consummate skill; but we have no sport, except perhaps Indian tiger shooting, requiring the courage and coolness this enterprise demands. The danger may be appreciated if one remembers that no sooner is blood shed in the water than all the crocodiles below are immediately drawn up stream by the scent, and are ready to act the part of thieves in a London crowd, or worse.”

**Measurements of a Wild Cat.**—I have lately had an opportunity of measuring a rather small and young female wild cat,—one of a couple I received from Scotland in January,—having died from the injury to its paw from the steel trap in which it was caught. The other is alive and rapidly recovering from its trapping, and will I hope do well. The measurements of the specimen which died are:—

	Feet.	Inches.
Extreme length . . . . .	2	10
Length of head . . . . .		4½
„ tail . . . . .	1	½
„ body and neck . . . . .	1	5
Breadth of head . . . . .		3
Length of ear . . . . .		2
Breadth of ear . . . . .		1¾
Round chest, immediately behind fore legs . . . . .		11¼
Upper canine from the gum . . . . .		¾
Fore leg, toe to elbow . . . . .		8
Hind foot, toe to hock . . . . .		5½
Longest mystachial bristle . . . . .		2¾
Weight (twenty-four hours after death) . . . . .	5 lbs. 7 oz.	

The weight and chest-measurement must, of course, only be taken for what they are worth, the cat being (I need hardly say) in poor condition. The greatest proportionate discrepancies between these measurements and those given by Captain Hadfield (S. S. 4793) seem to be in—the breadth of the head, which I think the difference of sex sufficiently accounts for; the length of the mystachial bristles, from the same cause, and also perhaps age; and the width of the ears. Captain Hadfield makes a trifling error (no doubt from taking his description from a stuffed specimen), in calling a wild cat's nose black. In all the individuals I have seen alive the nose has been flesh-coloured; and this is the case with, I think, every species of the Felidæ represented in the Zoological Gardens, except the lions and the black variety of leopard. While looking at the cats' noses in the "Zoo" the other day I noticed that the only two species of the family whose noses differ in shape from the regulation flat type are the lions—who have round noses—and the exceptionally pretty little animal, the eyra, who has a prominent button-like nose. I compared this young female wild cat's skull with those of some tame cats, and found that it exceeded in length that of a fine adult domestic tom by about one-sixteenth of an inch. Being no anatomist, I will only mention three points which especially struck me: the brain-cavity of the wild cat is somewhat larger than that of its domestic relative; the under jaw is much more massive; and, when set up on end, the lower jaw of the wild cat stands almost true on coronoid process, condyle, and the angle, leaning over towards the upper side. In the tame cats these bones balance on angle and condyle, the coronoid process not touching the ground, and they incline over towards the lower side. My old pair of wild cats bred last year, three kittens being born on the 13th of June; two (females) were either born dead or died almost immediately; the third (a male) died in the night of August 31st, from distemper. His mother's milk failed, and we were obliged to put him under a tame cat as wet nurse. The gestation was nearly sixty-eight days, or twelve days longer than the ordinary gestation of a tame cat. My old tom cat weighs eleven pounds and three-quarters.—*A. H. Cocks*; 42, *Great Cumberland Place, Hyde Park, W.*, March 14, 1876.

*Correction of an Error.*—As I cannot boast of having kept my tame buzzard for upwards of twenty-three years, may I correct the "1853" in the fourth line of my letter (S. S. 4829), which is a misprint for 1873.—*A. H. C.*

**Wild Cats.**—I have read with interest the notes on the wild cat which have recently been published in the 'Zoologist.' Gamekeepers and others have often told me that the domestic cat (*Felis domesticus*) will, if allowed to run wild, breed with the wild cat (*Felis Catus*); but I have never been able to get an authentic specimen of the cross, and do not know any person who has seen one. Perhaps some of the readers of the 'Zoologist'

can give information on the subject, or a description of the hybrid, if such exists.—*James Lumsden, jun.; Arden House, Alexandria, N. B., March 9, 1876.*

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**African Birds.**—With reference to the list of Natal birds in your notice to correspondents in the 'Zoologist' for March (S. S. 4852), it may be desirable to add that the specimen of *Laniarius quadricolor* is *immature*: I had intended so to label it, but may perhaps have omitted it. Also for *Campophaga* read *Campephaga*.—*J. H. Gurney; Northrepps, Norwich, March 1, 1876.*

**Birds near Rainworth.**—Green plovers have already come to their breeding haunts, and may be seen chasing one another over the fallow fields. Partridges have not all paired yet: this has been the worst season in Nottinghamshire for the last twenty years. Common wild ducks have been paired for the last fortnight. Already a pair of wagtails are about the thatch-stacks in my yard, where they build every year, looking for a place for their nest. We have had a great number of fieldfares and redwings—more than I ever remember—all over the county this winter, and I hear it is the same in Leicestershire: they come to roost in a fir cover near me by hundreds.—*J. Whitaker; Rainworth Lodge, near Mansfield, Feb. 22, 1876.*

**Birds Pied about the Head.**—One of your correspondents asks if it is not the experience of others that pied blackbirds are oftener pied about the head than any other part of the body. It certainly is mine, and it has struck me more or less that the same applies to the ring ouzel and several other birds, though I have no idea what the reason can be.—*J. H. Gurney, jun.; Northrepps Hall, Norwich.*

**Monstrosities.**—I do not remember exactly where to refer to the passage, but a short time ago Mr. Gatcombe recorded an extraordinary monstrosity of a rock pipit, which he met with upon some rocks at Plymouth, and which, if I remember right, had certain supernumerary limbs over and above what are usually given to birds. I have now before me a somewhat similar monstrosity of a robin. It possesses three legs, and a most ghastly little object it is. The hind leg, which is the extra member, comes out of the abdomen: it is as long as the others, but dreadfully misshapen. For some years we had in our yard a tame drake with four legs; the hind pair hung down and were not made any use of; but I do not think it so remarkable in a tame bird. I once had a duckling which also possessed some supernumerary legs. It would be easy for me to cite several other instances from respectable works; but, for the most part, they only refer to domesticated birds, about which I apprehend the readers of the 'Zoologist' are less interested than about wild ones. I will, however, cite one: Mr. Morton, in his 'Natural History of Northamptonshire,' tells his readers of "a monstrous young quail found dead in the nest at Middleton Cheyney field, in

August, 1704, by Mr. Wodhall, of Thengford. In the head, body, and wings, it differs not considerably from others of the kind just disclosed of the shell, as this was. But 'tis a four-legged bird." The above is literally copied. At p. 463, pl. xiii., he gives a figure of it.—*J. H. Gurney, jun.*

**Kestrels near Banbury.**—I saw the last kestrel hawk on the 25th of November, 1875. I strongly suspect that this bird migrates from these parts in the winter. There is a scarcity of game, fieldfares and redwings, but carrion crows, nuthatches and green woodpeckers are common. The kestrel appeared again on the 16th of February, 1876, and by the 26th were getting very plentiful.—*C. Matthew Prior; Bloxham, Banbury.*

**Sparrowhawk and Woodcock.**—Mr. Selater's remarks on the mode of feeding of the starling (Zool. S. S. 3648) are very interesting, and so also is his narrative of the woodcock and the sparrowhawks: the unfortunate bird seems to have had a good many assailants. I only once remember seeing a hawk strike at a woodcock. It was a few months ago. I have no doubt it was a sparrowhawk. It was in an open field, and the woodcock, which we had just put out of a cover, was flying in a slow aimless manner when the pursuer appeared.—*J. H. Gurney, jun.*

**Archibuteo Sancti-Johannis.**—Since forwarding you my notes the other day I have seen Dr. Coues' book, 'The Birds of the North-West,' published by the United States' Geological Survey, in which I find that the North-American roughlegged buzzard, although generally a much darker bird than the European one, is not considered specifically distinct from it, but merely a climatic race. Still the example I possess from North Devon of this uniformly dark roughlegged buzzard, which has been termed *Archibuteo Sancti-Johannis*, is, as far as I can learn, the first which has been obtained in this country.—*Murray A. Mathew; Bishop's Lydeard, near Taunton, February 25, 1876.*

**Roughlegged Buzzard at Rufford.**—On the 16th of December one of Mr. Savill's keepers saw a large hawk flying about over the heather at Rufford; on seeing it near the same place again next day he placed a trap, baited with a dead rabbit, near the spot, and watched it from some bushes close by: the bird came, but, seeing him, was sweeping away, when the keeper—thinking he might not have another chance—fired; after rising about fifty or sixty yards it fluttered down dead to the ground, one corn having gone through its lungs: it was a roughlegged buzzard. Formerly this hawk was not uncommon about here, but it only occurs now once in every two or three years. The bird was a female, and on examining it I noticed the feathers to be very owl-like in their texture and colour. Another specimen of this hawk, a young male, was shot on the 24th of January, near the same place.—*J. Whitaker.*

**Owl-pellets: Correction of an Error.**—I see that my note on the owl-pellets in the March 'Zoologist' (S. S. 4832) is dated July 6. This will

not fit the "hard-up" theory: it should have been February 6, 1876.—*Robert Mitford; Hampstead, N.W.*

**Barn Owl and Rat.**—The following instance of instinct at fault, which has not been recorded, was communicated to me some time ago:—In the autumn of 1865 a fine barn owl was brought to be stuffed. It belonged to a Mr. Wallis, farmer, of Leigh, near Tonbridge, Kent. The farmer's wife told me she had picked up the bird dead on the barn-floor, and that beside it, also dead, was a very large rat. There is little doubt but that an encounter had taken place between them, the injuries received by each being sufficient to cause death. The bird had evidently been severely bitten by the rat.—*J. H. Gurney, jun.*

**Barn Owl and Shrew.**—It is not altogether so unusual as Mr. Mitford supposes for barn owls to feed on shrews. I have once or twice—and my father has repeatedly—found skulls of the shrew in pellets of the barn owl. It would seem that in Germany shrews are their principal food. According to the investigations of Dr. Altum, as quoted in the fourth edition of "Yarrell" (vol. i., p. 148), 706 pellets were found to contain the remains of 1590 shrews. In England, however, they cannot be said to be very fond of them, though several writers mention the shrew in their bill of fare. The Rev. L. Jenyns gives a remarkable instance of their catching them and bringing them to the nest, and afterwards rejecting them. It seems that they will make shift with them, but only (in England) when they cannot get anything more to their taste. In different countries owls have different tastes, or perhaps in Germany shrew mice are not so "strong."—*Id.*

**Snowy Owl in County Fermanagh.**—When shooting last week on the mountains near the village of Sack, I observed a specimen of this rare bird. My brother and I spent the day in pursuit of it; it never allowed us to approach nearer than a hundred and fifty or two hundred yards, but did not fly more than a quarter of a mile or so on being disturbed. We found the remains of a hare and two grouse destroyed by it. It had been seen by the keepers for some days previously, and also on the following day, after which it moved to an adjoining moor.—*H. B. Murray; February 29, 1876. (From the 'Field.')*

**Scandinavian Variety (?) of the Dipper at Beverley.**—On the 29th of October last a blackbreasted dipper, which I believe to be the Scandinavian variety (*Cinclus melanogaster*), was shot on our river by a person named Priestman. The dipper (*C. aquaticus*) is not a resident in this part of the country, and it is a most unusual thing for one to be shot here. Whether or not the two or three that have occurred in my recollection have been of the *C. melanogaster* form, I cannot say, as I have not seen them; but I suspect it will turn out to be so, as *C. aquaticus* is rather a stationary bird. Delighting as the dipper does in swift and rugged mountain streams, there is little wonder at its absence from here, where our streams are

slower and flow generally through a flat chalky country. I am not aware of any locality for the dipper in East Yorkshire, though it is not uncommon in the West and North Ridings, where the country is much more hilly, and where our chalk is replaced by hard rocks. I shall be glad to be corrected on this point. The Rev. G. H. Tuck, in the 'Field,' mentions the occurrence of *C. melanogaster* at Filey, and Mr. J. H. Gurney, jun., also possesses a Yorkshire specimen of this type.—*F. Boyes; Beverley.*

*Addenda.*—It will be noticed that I am not quite certain in the identity of the above bird, because I have not seen the Scandinavian variety. I only know the bird has no chestnut on the breast; but then, again, I do not know the autumn plumage of the young common dipper. A fine old bird in my collection I shot last June on a mountain stream in Sutherlandshire, near Inchnadamff, where they were common. I saw both old and young flying about. I also saw a nest—empty, of course, so late as June.—*F. B.*

**Fieldfares, Sky Larks and Lapwings on Salisbury Plain.**—Now that the bustard has virtually disappeared from its ancient habitation, we of the "living present" must be content to admire smaller but perhaps no less interesting game. During a drive in the neighbourhood last autumn the immense numbers of lapwings and sky larks were very noticeable, especially on or near the cultivated tracts, and a ramble in the same locality during the Christmas holidays revealed the fact that these two particular species had almost entirely disappeared, but were replaced by equal numbers of rooks and starlings, whose habit of congregating together is well known, together with vast flocks of fieldfares, which, although not congregating with the other two species, were often flying about in the air with them. I have seen almost incredible numbers of fieldfares in the New Forest in winter feeding upon the numerous berries which that locality affords, but I should think that the supply of berries on the Salisbury Downs must be very scanty.—*G. B. Corbin.*

[With respect to the association of rooks and starlings, it is impossible for any naturalist resident in the country not to have observed it. The cause of the association is not quite so manifest. May it not be that the starling acts as a guide or indicator, and has a more delicate perception of the presence of larvæ at the roots of grass than is possessed by the rook? The favourite species with both birds are these:—*Tipula oleracea* (Diptera, Tipulidæ), *Chareas Graminis* (Lepidoptera, Noctuidæ), *Amphimalla solstitialis*, *Melolontha vulgaris*, *Serica brunnea*, and several species of *Elateridæ* (Coleoptera): the service these birds thus render the farmer is incalculable. I have used the word "association": the phenomena can scarcely be so called with rigid propriety: the starlings arrive at their feeding-ground in a compact phalanx, seemingly moved by a common impulse; the rooks in a straggling file; first a single rook spies the well-disciplined and silent



phalanx of starlings, and uttering his familiar cry perches on some pollard tree in a hedgerow; others, obedient to the summons, following their leader, "a blackening train o' craes." The starlings are never mistaken; they trust to their own perceptive faculties, whether of sight or smell. The rooks, too, are never deceived; they know their guides are infallible.—*E. Newman.*]

**Blackcap's Head in Winter.**—It is certain that all male blackcaps do not lose their black caps in winter; indeed I doubt if any lose them after having once obtained them. It is also certain that a portion of the young males, particularly in certain countries, retain their red heads to the age of nine or ten months; and I think it will probably be found, when further investigations are made, that they even breed in that plumage.—*J. H. Gurney, jun.*

**Quarrels of Titmice.**—A remarkable incident happened at Sandy, four miles from here, this morning, in presence of my son. Two blue tits were engaged in a furious battle, and so intent were they in the struggle that, after watching them some time, he sent a lad in his employ to pick them up, when one of them was found to be dead, and the other so exhausted that it died in his hand. So tenacious was their hold on each other that it was a difficult matter to separate them without tearing the skin, as they fought with both beak and claws, and the dead bird was found to have fast hold of the other one's eyelid with its beak, the claws of both being firmly fixed in each other.—*J. King; Langford Road, Biggleswade, February 23, 1876.*

**Variety of Blue Titmouse.**—A beautiful variety of the blue titmouse has been flying about here during the present winter. The whole plumage, as far as I can see, is of the uniform yellow colour usually found on the breast of the blue titmouse, excepting a few feathers about the head, which are of the usual blue colour. When I first saw it I took it to be an escaped canary, but on watching it I found it had all the actions of a titmouse. Not then being able to get very near to it, I was not quite satisfied as to its identity; but meeting, a few days after, the gentleman in whose grounds I saw it, I asked him if he had seen a canary about his garden lately: he then told me he had seen a yellow bird; that it was not a canary but a "tomtit," as he had plainly observed some blue markings about the head, and that he had seen it about during the whole of the winter. I have seen the bird again to-day; it allowed me to approach nearer than I have been able to do before, and I could plainly see the blue about the head, and clearly identified the bird as the blue titmouse.—*Stephen Clogg; East Looe, Cornwall, Feb. 21, 1876.*

**Great Tits eating Bees.**—A short time back, in the 'Field' newspaper, I saw some mention of the great tit eating bees, but as I had not time then to state my own experience, there will perhaps be no harm if I now do so in the 'Zoologist.' Here these birds have long been known to frequent the beehives to get the bees; it is during the winter and early spring that they

do so. I am not quite certain that they take the hive-bees, though they are always accused of so doing. I fancy the dead bees, which are so often at the mouths of the hives at this season of the year, first attract them, and when they have got all they can reach I have known them to peck a large hole into an old straw hive to try and get more: perhaps this disturbance at the entrance of a hive brings some of the half-torpid bees out to see what is the matter, and *Parus major*, likely enough, improves the occasion by devouring them. This tit seems more insectivorous than the tomtit (*Parus caruleus*), which does not, so far as I have seen, after many years of observation, indulge in this habit.—*F. Boyes.*

**Waxwings without Wax** (Zool. S. S. 4723).—The few British-killed waxwings which I have seen all possessed the wax-like appendages to the wings; but last year I had the pleasure of inspecting a number of bird-skins from North America, amongst which were several of our rarer or reputed British species, as the goldenwinged woodpecker, redwinged starling, belted kingfisher, &c., and amongst them were seven or eight of the waxwing, and its near ally, the cedar bird: I noticed that only *two* of the number possessed the appendages in question, but whether these were waxwings or cedar-birds I did not notice, but most of those lacking the decoration were undoubtedly the latter species, as the under parts of the plumage were yellowish and the wings unbarred with white, which, in my ignorance, I had attributed to the skins being those of females. This note must be taken for what it is worth, as I had but a casual look at the skins, and now I write from memory.—*G. B. Corbin.*

**Grayheaded Wagtails.**—Mr. Hancock's letter (S. S. 4834) is so sensible and temperate that anyone must feel disarmed in any further attempts at criticism. What both he and I wish for is not to enter into any recrimination against one another, but by honest investigation to arrive at the truth. I may say that I have always been accustomed to look upon him as such a practical out-of-doors naturalist, that it was with not a little diffidence that I ventured to oppose my views against his in the matter of the wagtails, and now I am willing to withdraw my opinion if I am convinced by his series of specimens that I am wrong.—*J. H. Gurney, jun.; March 3, 1876.*

**Note on the Plumage of the Yellowhammer.**—Of our common yellowhammer Mr. Yarrell writes, "The bright yellow colour in very old males is extended over a larger surface" than in young males ('British Birds,' 1st ed., vol. i., p. 447). Whether this is true or not, everybody knows how much variableness there is of yellow in this bird. Sometimes one sees an example which instantly attracts attention by its unusual brightness, whether on a hedgerow, in a cage, or in a collection of stuffed birds. I find that birdcatchers very neatly clip off the tips of the feathers about the head, &c., to produce this appearance. On closely scrutinising two or three very bright specimens I distinctly made out that they had been so

served. And yet occasionally it is not artificial: a wild bird shot at Sprowston, near Norwich, on the 17th of July, 1871, and which, to the best of my belief, had never had its locks shorn, exhibited a very pale yellow head, with hardly an admixture of any other colour; and another specimen, which had never known a cage,—before me as I write,—is so pervaded by this colour that not only is the head mainly yellow, but the whole of the neck and shoulders, and even a portion of the wings and back. I have never seen a pure yellow yellowhammer, but I have an albinism and a melanism; at least the latter is a dark chocolate colour, blackest about the throat and fore parts, as melanisms often are.—*J. H. Gurney, jun.*

**The Male Chaffinch Nest-making.**—In glancing over the long-looked-for 9th part of Professor Newton's "Yarrell," I observe at p. 72, in describing the nest of the chaffinch, it is stated that "This exquisite fabric seems, on the evidence of more than one observer, to be the work of the hen bird only." Now I have myself seen the male bird in the act of nest-making. I was walking leisurely along, smoking a pipe, about fifty yards from the stable-yard gates, when I observed the nest of a chaffinch in some sprouts at the side of an oak: the tree stands down a hill, bringing the nest low enough for me to see down into it. The nest seemed almost finished, except the lining, and in it sat the male bird busily engaged in weaving the hairs into it with his bill, sometimes looking over the side, and every now and then sinking low into it and turning round in a rolling motion—in fact, he seemed to understand nest-making quite as well as the female. I am sorry I did not send you a note of this at the time. I knew then it had been stated that the female only worked at the nest-making, which made me more interested in what I saw. It had, however, entirely escaped my memory until I again read it the other day.—*John Sclater; Castle Eden, Durham.*

**Tree Sparrow and Wood Pigeon building in a Magpie's Nest.**—The tree sparrow is very fond, not exactly of nesting in a magpie's nest, but of building its own nest inside. I once found, in a thorn tree, a magpie's nest which in April had five eggs in it: I took the eggs out, wanting a tree sparrow to take up its residence therein; but imagine my surprise when one day I saw a wood pigeon fly out, and on getting up I found that the bird had put sticks on the bottom, and had laid three eggs—a fact almost without a parallel in the annals of Natural History: the wood pigeon hatched two of her eggs, and the third proved unfertile.—*Charles Matthew Prior; The Avenue, Woburn Road, Bedford.*

**Greenfinch.**—I have a yellow or yellowish greenfinch; the tint is strongest on the rump and primary quills; but my object is not so much to record this, which was killed some time ago (at Blofield, in Norfolk) as to ask Mr. Forbes, or any of your correspondents who are interested in varieties, whether they have ever seen a white greenfinch. I never have, and I have

collected varieties of a great many species. My bird has not a particle of the original green about it; but it is not an albino, on account of the beautiful yellow hue with which the plumage is suffused. I have also a pied greenfinch, but I do not think that affects the question.—*J. H. Gurney, jun.*

**Crossbills on Salisbury Plain.**—Skirting the high road, in several places are narrow belts of fir, larch, and other trees, and in such situations I observed numbers of the lesser redpolls in most grotesque attitudes, accompanied by a smaller number of goldencrested wrens; but was somewhat surprised in observing that the common crossbill was by no means rare on the larch, upon the cones of which the birds were feeding. In their habits they remind one much of a parrot, as they took the small larch-cones in their claw, and pulled them to pieces with their beak; but when the cones were larger they picked them to pieces as they hung on the branch, and not unfrequently descended after the cones which had fallen; and in their attitudes upon the branches, as well as their descent to the ground, they somewhat resembled—in this case—their companions, the lesser redpolls. The males sometimes uttered a wild, peculiar trichord sort of song, ascending in tone and repeated at intervals. Whether this is the

“Songs, like legends, strange to hear,”

which Longfellow has translated in his poem, I am not prepared to say, but it certainly was quite new and interesting to me. I believe it is a generally received opinion that the crossbills keep a sentinel on guard upon the top-most branches of the trees upon which they are feeding, to give the alarm in case of danger. I noticed that one or more birds were conspicuous upon the highest branches and made a sort of harsh noise as a warning, but the other birds did not seem to take the least notice of it—in this respect unlike the fieldfare in a similar situation; indeed, I noticed that the crossbills were exceedingly lethargic and very careless about my near approach; a stone thrown into the trees had the effect of dislodging some of them, but they always returned to the same spot without appearing much annoyed. The strength of the mandibles of the crossbill must be immense, as they will pull a cone to pieces in an incredibly short space of time; in fact, much quicker than would be possible to accomplish the feat with one's fingers, and their peculiarly hooked and crossed formation of the mandibles must greatly facilitate the operation. These observations were made on December 27th, but whether the species visits the same neighbourhood annually, or merely pays an “occasional visit,” I am not in a position to say; certain it is that their habits are not always identical, as I have seen them more than once about the fir woods in the neighbourhood of Ringwood, when instead of appearing fearless, as stated in the foregoing note, they were very wary and cautious, the birds on the look out giving timely warning

of danger—a warning hint soon taken for a hasty retreat; and on such occasions as these the whole flock seemed restless and easily disturbed. Possibly it is only when they are feeding or have fed to repletion that they become apparently lazy and sleepy, like other bipeds often feel “after dinner.” It was the ingenious French naturalist, Buffon, I believe, who considered the beak of the crossbill an error committed by Nature, but it is questionable, if he had closely watched the disintegration of a fir-cone by the bird, whether he would not have been inclined to alter his opinion.—*G. B. Corbin.*

[I have a crossbill in confinement, and can fully confirm Mr. Corbin's description of its peculiar note (? song), which I can compare to that of no other bird, unless it be the greater titmouse (*Parus major*). I was many months ignorant of the musician, and attributed its music to some titmouse still at liberty, for I have no specimen of that mischievous bird in my cage, fearing its taste for birds' brains, which, like Heliogabalus, *Parus major* will occasionally indulge to excess. I may state that I cannot distinguish the sexes of the crossbill.—*Edward Newman.*]

**Starlings and Elder-berries.**—Last autumn was notable for the great crops of fruit of all kinds. The elder-bushes were laden with berries, and afforded a rich banquet to the starlings, missel thrushes, &c. Starlings are excessively fond of them, and two trees in the garden were visited all day long by them; nor was it easy to send them off. I was asked by a friend to let him have the berries when ripe to make syrup of, but he delayed fetching them so long that I found these birds more than a match for me: I fired off the gun and frightened them, but to no purpose—the starlings would not be denied, and eventually they got them all. Happening to be down in Lincolnshire, I noticed just the same thing: wherever there was an elder-bush with berries on, there the starlings were.—*F. Boyes.*

*Errata.*—In my note on the stock dove (S. S. 4842), twentieth line from top, *for reeds read seeds.* In my note “Is the Waterhen Migratory or not?” last line on p. 4845, *for after all they may leave the country read after all they may not, &c.*—*F. B.*

**White Starling.**—On the 24th of October, 1875, I saw a starling of a uniform dusky white in a flock of about twenty-four: it was extremely shy. The bird afterwards joined an immense flock, out of which I suspect it fell a prey to some gunner, for I have not seen it since. I have a blackbird I obtained in Lincolnshire of the same colour.—*C. Matthew Prior.*

**Starlings pecking with Beak open.**—I was intending to offer an observation on this subject when I observed Mr. G. F. Mathew had done so already (Zool. S. S. 4837), *viz.* that the beak is closed when thrust into the ground and opened as it is withdrawn, that the bird may better observe the effect of the thrust when searching for insects, in grass or other herbage in which

it is made. I have frequently observed this action in the starling.—*William Jeffery; Ratham, Chichester, March 3, 1876.*

**Manner of Feeding of the Starling.**—The editor having called on the readers of the 'Zoologist' to record their personal observations on the feeding habits of the starling, I do so, remarking, too, on what has appeared in answer to that appeal. In a foot-note (S. S. 2632), Mr. Newman remarks, "I have observed a feature in the digging operations of starlings that I do not recollect having seen mentioned: this bird appears to dig with its mouth open, the upper mandible penetrating the ground, but not the lower." A starling with a "curiously overgrown under mandible" is referred to by Mr. J. H. Gurney, jun., also a "similar specimen" in his collection, which has "the lower mandible projecting a quarter of an inch," and he is "inclined to think that these poor birds may have worn away the upper mandible by pricking the ground with their mouths open." That one of these starlings is a monstrosity is clear, seeing its lower mandible is *overgrown*, and probably the other bird's is so too, it not being likely that its upper mandible could have been worn away a quarter of an inch. In Yarrell's 'British Birds' (vol. ii., p. 90), will be found the figure of a rook's head with the lower mandible an inch or so longer than the upper one. Are we, then, to jump to the conclusion that the latter had been worn away? Though I have closely examined many starlings, both common and redwinged, never did I find one with the upper mandible more worn than the lower. It is remarked by Mr. G. F. Mathew (S. S. 4837) that "the beak of the starling is not thrust into the ground open,"—which I believe to be the fact,—but that "immediately it has pierced it the lower mandible is opened to its widest extent." But how the beak can be opened in that position I cannot imagine, or how "any creature can be easily detected and secured in the space it has opened out to view." The lower mandible, being more flexible and sensitive than the upper, is required in the discovery and extraction of the grub or insect. Mr. Southall says (S. S. 4836), "The beak of the starling seems to be an inferior instrument, or at least wielded with very inferior power to that of the blackbird or thrush." But the fact is, the bill of the latter—to say nothing of the former—is comparatively weak. Having of late closely watched the starlings feeding on the lawn, I am confident in the opinion that the bill remains closed when thrust into the ground for about half its length; but that must vary with the season, grubs being found nearer the surface in summer than winter. If it were the starling's habit to force its bill down to the "base," after the manner of the rook, we should find the feathers worn, but they are not.—*H. Hadfield; Ventnor, Isle of Wight, March 10, 1876.*

[My friend Captain Hadfield will find some remarkable instances of overgrown mandibles in different volumes of the 'Zoologist':—the upper

mandible of a rook (Zool. 7429); the upper mandible of a redshank (S. S. 3999). In these instances the upper mandible is elongated, but in neither do I perceive any evidence of the lower being worn away. In the instance of the rook (Zool. 7429) the lower mandible is extremely short and perfect, the upper longer and thicker than usual. I believe we must not rest contented with the worn-away solution; certainly the fact of the mandible not meeting must conduce to this effect, but that probably arises from some anterior cause. I shall be very pleased to receive more communications on this subject.—*Edward Newman.*]

**Starlings feeding with Open Beak.**—I have observed a pet starling my brother had, after pecking with open beak, throwing the loose sawdust from side to side in the bottom of his cage; at other times he would thrust his beak into any crevice and try to widen it by opening the beak. My belief is that the starling opens its beak and uses it as a rake when feeding on soft open ground, but when feeding on hard ground it thrusts in the beak and uses it as a lever by opening it with force, which I know it can do, as I have seen my brother's bird force his beak under a loaf of bread, and by opening the beak turn the loaf off the table.—*Thomas Darragh; Belfast Museum.*

**Jackdaws with Pied Heads.**—I have observed a jackdaw, on the chimneys and on our wall, with the throat, breast and belly all splashed with white.—*Id.*

**Large Flock of Magpies near Banbury.**—On the 16th of November, 1875, I counted no less than thirty-four magpies in one flock feeding in stubble: six or eight are of common occurrence.—*C. Matthew Prior.*

**Woodpeckers.**—If woodpeckers really are so excessively rare in the Isle of Wight, which I am inclined to doubt, it can hardly be from any dread of salt water. The greater spotted woodpecker is an annual migrant to the east coast, and towards the end of the year large numbers have sometimes occurred not only in Norfolk but in Scotland, and even in the Shetlands. They must needs have crossed the North Sea, and possibly now and then a whitebacked woodpecker may come with them, as in the case of my specimen which was shot by Dr. Saxby.—*J. H. Gurney, jun.*

**Wall Creeper in Lancashire: Erratum.**—In the March number of the 'Zoologist' (S. S. 4839), for hind claw, thirteen-sixteenths of an inch read hind claw, one inch and thirteen-sixteenths.—*F. S. Mitchell.*

**Swallow and Swifts** (*Hirundo pelagica* of Wilson, *Cypselus* of Illiger, *Cypselus pelagius* of Temminck).—In my Canada notes (Zool. 6708) I remark that in appearance, manner, and rapidity of flight the chimney swallow greatly resembles the common European swift, though much smaller, but I omitted to state that, like the swift, it has but ten tail-feathers; and the *Hirundo caudacuta* of Australia, to which it is closely allied, has also ten; and both have the rounded spinous tail, and in length

of wing are swift-like. It also appears that the *Hirundo Martinicana* of Brisson, which is but three inches eight lines in length (French measure) is swift-like too, though he says it has *twelve* spinous tail-feathers, but that, I think, requires confirmation: possibly some reader of the 'Zoologist' may be acquainted with the species. Yarrell, in the generic character of the swift, says that "it differs from the Hirundines in the greater extent of wings;" and Cuvier remarks of the swifts that they are "de tous les oiseaux, ceux qui ont les plus longues ailes à proportion," but in the *Hirundo pelasgia* and the *Hirundo Martinicana* the wings are proportionately *longer*, particularly in the latter, which has "huit pouces, huit lignes de vol, est sa longueur depuis le bout du bec jusqu' à celui de la queue est de trois pouces huit lignes." Macgillivray, in the synopsis of the swift, says that it chiefly differs from the swallow in the formation of the foot; but should that *alone* in the *Hirundo pelasgia* outweigh the many points of similarity in form, structure, plumage, length of wing, rapidity of flight, manner of feeding, roosting, and nesting, too? for, like the swift, the chimney swallow builds in lofty towers, spires, and hollow trees, and the materials of which the nest is constructed are, Wilson says, "fastened together with a strong adhesive glue or gum secreted by the glands;" and Macgillivray, in describing the nest of the swift, remarks, "there were fibrous roots as well as other material, felted and agglutinated, the matter being of a gelatinous nature." Evidently the *Hirundo pelasgia* of Wilson was, by Illiger and Temminck, taken for a swift, nor had I a doubt about it, till referring to Wilson—having had favourable opportunities of observing it during my stay in Canada. Like our swift, though the last to arrive it is the first to depart; it is constantly on the wing throughout the day, hawking after the manner of the common swift, and long after the barn swallow, whitebellied swallow and purple martin have retired to roost. If birds are to be classified by the form of the foot, why not quadrupeds? but he would be a bold man indeed who attempted it. Only imagine, for instance, all cloven-footed beasts being united into one family!—*Henry Hadfield; March 6, 1876.*

[For the information of my readers who may not be so intimately acquainted as Captain Hadfield with modern works on Ornithology, I will add a few words on Swifts and Swallows: the authorities to which I shall more particularly refer are Professor Blasius—whom Professor Newton pronounces to be one of the highest authorities on this branch of Science—and Captain Elliott Coues, author of the 'Birds of the North-West,' a work which may be considered the most complete of its kind ever published. Professor Blasius, about the year 1860, compiled a list of European birds for his own private use, and Professor Newton (or rather Mr. Stevenson, of Norwich), in 1862, reprinted this list, as most of my readers are aware, for the use of British ornithologists. Captain Coues, one of the highest authorities on the birds of the United States, published his exhaustive



volume of eight hundred closely-printed pages in 1874. Professor Blasius groups his European species in seven Orders—1, Accipitres; 2, Clamatores; 3, Oscines; 4, Columbæ; 5, Gallinæ; 6, Grallæ; and 7, Anseres. In the second of these appear the Cypselidæ or Swifts, and in the third the Hirundinidæ or Swallows. Captain Coues begins with the Order Passeres, adopting the groups Oscines and Clamatores as Suborders; he then places the Family Hirundinidæ in the former, and the Family Cypselidæ in the latter. The species *Hirundo pelagica* (or more correctly *Chætura pelagica*), which he calls by the English name of “Chimney Swift,” is of course ranged with the swifts. Blasius places the Cypselidæ and Hirundinidæ as following Families, the one at the end and the other at the beginning of their respective Orders. Coues places many other Families between them; his sequence of Families shows that the Swifts naturally intervene between the Goatsuckers (*Caprimulgidæ*) and the Humming Birds (*Trochilidæ*). No notice is taken of the superficial resemblance of Swallows and Swifts—a resemblance which I have ventured to call “*extomæous*” as distinguished from the intrinsic resemblance between *Hirundo urbica* and *H. rustica*, which I have denominated “*endomæous*.” I am sure Captain Hadfield will excuse these hastily-written remarks, penned on the spur of the moment, in the hope they may be of some service to young readers.—*Edward Newman; March 7, 1876.*]

**Stock Dove breeding in October.**—On the 2nd of October, 1875, I found in a hollow ash tree a stock dove's nest containing two newly-laid eggs.—*C. Matthew Prior.*

**Loss and Reproduction of a Pigeon's Beak.**—In the May number of the ‘Zoologist’ for 1874 I described and figured the head of a shortfaced tumbler (S. S. 3999), to which the character of “shortfaced” could not be applied. It was *lucus a non lucendo*; it was the play of ‘Hamlet’ with the character of Hamlet left out. The upper mandible was exactly an inch in length, the lower fully three quarters of an inch; the two crossed like those of a crossbill, and as the extremities were sharp as needles the poor bird could not feed on peas or grain, and as he appeared in imminent danger of starvation I had both mandibles cut to a becoming length, or rather shortness; and then the bird managed his peas and wheat almost as well as ever, and soon recovered its usual plumpness, together with sundry love-making propensities at which he had formerly been proficient. During the autumn of the same year the upper mandible again exhibited a disposition to elongate, and before October was out had acquired a length which rendered the picking up of peas impossible; so he was provided with bread soaked in milk, which he ate ravenously, and which seemed to agree with his constitution admirably; but before Christmas the upper mandible, which grew excessively slender, gave way. I can give no other account of the calamity, but that the beak broke off. I never found it—perhaps never

looked for it. The bird continued to eat sop for a time, but afterwards took kindly to peas. His beak is now growing a third time, but after thirteen months it has not the length it possessed prior to the amputation. Have any of my correspondents known of a similar case of reproduction in a bird's beak?—*Edward Newman.*

**Great Bustard at Feltwell.**—A great bustard took up his abode in my fen on the 24th of January, 1876, in a piece of colesced. He seemed to consider this field quite as private property, for I do not think he was ever absent for a whole day till the 24th of February. Lord Lilford most kindly sent me a female bustard, which I turned out on Thursday, February 10th, in the presence of Professor Newton, Messrs. Harting, Salvin. E. Newton, and F. Newcome. The male flew away whilst I was trying to drive the very tame hen up the field towards him. He, however, returned before we left, in less than an hour, and, though not close together, we left them in the same field. They, however, very soon made it up, and Saturday and Sunday they spent side by side, the male bird strutting round the hen and traping his wings like a turkey cock. The fearful weather on Sunday night and the next day, alas! proved too much for the tame bird, and on Tuesday she was found dead in a ditch. This was most grievous, as they were getting on so capitally. On the 21st of February Lord Lilford sent another hen: it was a very stormy day, so I dared not turn her out after the fate of No. 1, but shut her up in a little hut of hurdles and straw which I had built for No. 1, but which she would not take advantage of. The next morning the male was not far from the hut, and the keeper went down to let the female out, but he flew away. In the afternoon he passed over the field, but did not alight, and went on to Stockwold; thence to Eriswell and Elvedon, the seat of His Highness Maharajah Duleep Singh, where he was seen in the park. This is the last place where I can hear any tidings of him. I hope he is now in a place of safety.—*H. M. Upcher; Feltwell, Brandon.*

**Stone Curlew.**—The note of Mr. Gurney, jun. (S. S. 4801), corroborating that of Mr. Rope (S. S. 3867), that this bird leaves the heaths about sunset and goes out to feed, is also quite true as regards the Yorkshire birds—now, I am sorry to say, almost extinct. They were usually pretty quiet in the daytime unless disturbed, but as soon as it was dusk they left the sandy warrens and flew, screaming, about the cultivated fields.—*F. Boyes.*

**The Common Waterhen Migratory.**—There can, I think, be no doubt on this point. Mr. Boyes states (Zool. S. S. 4845) that it "arrives in great numbers in the spring to breed" in Yorkshire. Here in West Sussex we always receive an accession of numbers in the autumn. I could now almost any day count twenty or thirty in and about the mill-ponds here (Ratham), but probably not more than two, or at most three, pairs will remain to breed. I frequently hear them, in spring and autumn, at night uttering the cry

which Mr. Boyes alludes to—a cry which at one time much puzzled me also.—*W. Jeffery.*

**Common Scoter at Minehead.**—Mr. Greday, birdstuffer, of this town, had a common scoter to preserve, which he informed me was caught in a sprat-net at Minehead.—*Frederick Stansell; Alma Street, Taunton.*

**Sabine's Gull at Bridlington Quay.**—On the 14th of October last a capital Sabine's gull was obtained by Mr. Mackin at Bridlington Quay. It was very tame, and was shot beside a drain called Watermill Beck. The plumage was that of a young bird, with a few dark feathers appearing on the occiput, indicative of the hood to come. This is the fourth Sabine's gull which, to my knowledge, has been shot within a few miles of Bridlington.—*J. H. Gurney, jun.; Royal Hotel, Scarborough, March 24, 1876.*

**Audacity of the Common Skua.**—When out dredging off Bangor, in the month of September last, I saw a common skua fighting fiercely with a herring gull: the gull was evidently trying to rise above the skua.—*Thomas Darragh.*

**Common Skua near Mansfield.**—In the last week of November as two gentlemen were returning from shooting, near Farnsfield, they saw about a dozen gulls flying towards them, and, as the birds passed over, they fired; one fell with a broken wing. Instead of flying away, its companions began to fly in circles over the wounded bird: several shots were then fired, and two more birds obtained. On going to the birdstuffer's to see the birds I found them to be the common skua. They were young birds, one male and two females, in very fine plumage. It is a very long way inland for skuas to be found, the nearest sea being more than fifty miles as the crow flies. This is the first instance, as far as I can ascertain, of the common skua being killed in Nottinghamshire.—*J. Whitaker.*

**Yellow-nosed Albatross in Derbyshire.**—The following is the passage about the albatross to which I referred (S. S. 2563):—

“*The Yellow-nosed Albatross a British Bird.*—On November [25th], 1836, a beautiful specimen of the yellow-nosed albatross (*Diomedea chlororhynchus*, Lath.) was observed sailing above the River Trent at Stockwith, near Gainsborough, and was shot nearly opposite the Chesterfield canal basin.”—*'Analyst,' April, 1837 (vol. vi., p. 160).*

The above will be found copied into Wood's 'Naturalist' (vol. ii., p. 104), and commented upon at p. 294. For a sight of it in that magazine I am indebted to Prof. Newton. Unfortunately my copy of the 'Analyst' does not go beyond 1836, but I am informed by that gentleman that the notice in the main, is correctly copied. Now a point at once strikes me, which I should have seen before if I had been able to refer to the notice when I first wrote to you:—Chesterfield is the locality where the second albatross was shot, which was received with so much ridicule, and which turned out to be a stuffed one which had been killed years before, and been ejected, as

was supposed, from some local museum, and which was made to do duty a second time. It is hardly likely that this could have been the same which there is reason to believe was really shot in 1836, and yet there must be some connection. Another point of similarity is that they appear to have both been first recorded in provincial papers and copied afterwards into journals of Natural History. That the occurrence of November, 1836, really was an albatross, corroborative proof is given by the Editor of the 'Ibis' for 1868 (Prof. Newton), who in an editorial note (at p. 294), says that two specimens of *Diomedea chlororhynchus* "seem undoubtedly to have been killed near Kongsberg, in Norway, in April, 1837,"—five months before the capture at Chesterfield. The coincidence of date is very remarkable. I submit these remarks to your readers, and I hope that something further will turn up in the matter, about which we cannot be said to have too much light at present.—*J. H. Gurney, jun.*

*Correction of an Error.*—Zool. S. S. 4698, first line, for moulting read mottling.—*J. H. G., jun.*

**Lizard Snake in Hampshire.**—The occurrence of the lizard snake (*Coronella laevis*) in the neighbourhood of Ringwood, some twenty or more years ago, is undoubtedly a well-known fact to most of the readers of the 'Zoologist'; but I have never heard that it has been taken in any other locality except upon those extensive heaths in South-Western Hampshire and the adjoining heaths of East Dorset, and even in its favoured haunts it is far from a common species. Several have been taken in the neighbourhood of Bournemouth at different times, as recorded in former volumes of the 'Zoologist'; for instance, one at Bournemouth, in 1871, by Mr. E. B. Kemp-Welch, and another at Pokesdown, the following year, by my friend the Rev. A. C. Hervey, beside a few others previously taken and recorded; but in every case it seems only a single specimen was met with. In 1874 Mr. Hervey took another specimen on the heaths near here, and having caught it alive, if I mistake not, sent it to the Zoological Gardens. In July, last year (1875), I was on the heaths, looking for *Anarta Myrtilli*, and the sun was excessively hot about mid-day, and there—upon a sandy bank—was a lovely *Coronella laevis* stretched out at full length. I had seen but one living specimen before, although I had kept my eyes open. I stood at some distance and admired the reptile, and, as it became uneasy and prepared to make its exit, its body looked iridescent in the sun. I approached nearer, and it raised its head, turning it towards me in a defiant attitude, with its little black forked tongue moving in and out, and altogether looking very fierce; but I heard no sound such as the common snake or the adder will sometimes emit if you chance to disturb or annoy them. This defiant

attitude, however, was of short duration, for as I got close it turned away again and attempted to make off. I gave it a tap with the handle of my entomological net, with an idea of retarding its progress, and was greatly surprised to see it writhe and soon die. It must be exceedingly fragile in constitution, or such a blow would not have killed it, as I am sure adders have got off comfortably with a blow of double the force. This specimen I took, and preserved it in spirits; and, strange to say, the following day I saw another on a heath at no great distance, but *that* I did not disturb. The one I caught is a fine fellow, measuring twenty-one inches long, but is of a very slender build. The lizard snake would not, I should imagine, be easily mistaken for either the common snake or adder, lacking, as it does, the white collar of the former, and the black vertebral decoration, together with the thickened and comparatively obtuse tail of the latter. The late lamented Canon Kingsley took great interest in this species, especially with regard to its occurrence in the New Forest, and wrote several times to me on the subject: he was under the impression that the lizard snake was found more commonly in the forest than is generally supposed, and was often seen and killed, in mistake for the adder, by the woodcutters or turf-cutters of the neighbourhood. For several seasons I searched and inquired closely for the reptile unsuccessfully; but eventually a well-authenticated specimen occurred in the very heart of the forest, *viz.*, in the garden at Minstead, of which I duly informed my very respected friend and correspondent. I believe I saw another last season in a part of the forest some miles from where the one in question occurred, but I cannot speak positively on the point. Under any circumstances, its occurrence in the forest is now established; but, so far as I have been able to ascertain, it is equally certain that it is a rare species. The spots where I caught my specimen and saw the other are not far from the old ground where, in 1854, the first British specimen was taken. The land is rather low and sandy, with stunted fir trees and an undergrowth of heather and coarse grass; and perhaps the only reason why I had not made the acquaintance of the reptile previously is that I seldom visit the locality till the evening, when all respectable snakes have completed their sunny perambulations. Here, as in most places, there is great antipathy to all reptiles, which are indiscriminately slaughtered whenever an opportunity occurs. Why it should be so I can scarcely comprehend, unless it is that from our earliest childhood we have been taught to shun the "old serpent," and we well know how deeply rooted are our earliest impressions.—*G. B. Corbin.*

[It is now some years since the lizard-snake was first introduced to British naturalists by the 'Zoologist.' My late lamented friend Dr. Gray was the earliest to record its occurrence in Britain, at page 6731 of the seventeenth volume, and Mr. Bond records a second specimen at p. 6787 of the same volume; the first announcement is accompanied by a description from

Lord Clermont's work on the 'Reptiles of Europe': at p. 8199 of the twentieth volume a third record is to be found, accompanied by the interesting fact that the specimen, a female, had produced six young ones at the 'Field' Office, 346, Strand; and at p. 1653 of the Second Series I gave a history of the species as British.—*Edward Newman.*]

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**Size of Gray Mullet.**—I was very much surprised to read, in the February number of the 'Zoologist' (S. S. 4806), a communication headed "Giant Gray Mullet," in which four pounds one ounce and a half seems to be considered an extraordinary weight. Now I should think such a specimen small: to give a couple of instances from last year; the largest I saw was weighed in my presence, and turned the scale on ten pounds and a half; one which I caught at the Skerries—a group of rocks between one and two miles from land, opposite Portrush, Co. Antrim—weighed very nearly seven pounds: this specimen was obtained when fishing with a crab bait for sea-bream, in a strong eddy, and is the third that I have seen caught in the same way. Besides these two examples there was a much-coveted monster, which frequented a particular part of the harbour here, and which I tried to catch in every way that I could think of, but in vain. I pointed it out several times to fishermen, and offered a good sum for it, but they were as unsuccessful as I was; their most tempting baits were passed scornfully; it never seemed to eat anything, though I have watched it for hours within a few feet of me: all it did was to take the sea-weeds in its mouth, and draw them through it from the bottom to the top: those whom I showed it to agreed that it could not be less than twelve pounds weight. If he returns next summer I hope to make a nearer acquaintance with him. Thompson records specimens from Belfast Bay of over ten pounds, and one of fourteen pounds and three-quarters. I am well aware that our Irish species is different from the common English one, but I have not been able to find, either in Yarrell or Günther, any record of the size to which *M. capito* grows: perhaps some of your readers may be able to tell me whether it is so much smaller a species than *M. septentrionalis*. Concerning the distinction between this latter and *M. chelo*, I can only say that seven specimens which I have examined constantly showed the differences pointed out by Dr. Günther ('Catalogue of Fishes,' vol. iii., p. 456), but I have never had an opportunity of comparing this species with examples of the true *M. chelo*.—*J. Douglas Ogilby; The Nest, Portrush, March 8, 1876.*

**Wolf-fish at Hastings.**—On the 29th of February last one of our Hastings fishing-boats brought in a fine specimen of the wolf-fish (*Anarrichas lupus* of Yarrell, vol. i., p. 247). It was three feet one inch in length, one foot seven inches in greatest circumference, and weighed fifteen pounds.

I examined the stomach and intestines, and found abundant remains of small crabs, more or less broken up, and portions of shells of a species of Pecten. I have made a skeleton of the ferocious-looking head. This fish is so far rare on this coast that our fishmongers did not know anything about it.—*J. S. Bowerbank*; 2, *East Ascent, St. Leonards-on-Sea, March 3, 1876.*

**Another Silvery Hairtail near Plymouth.**—On the 28th of January I identified a second silvery hairtail (*Trichiurus lepturus*), which, I was informed, was caught in the St. Germans River. It was not quite so large as the specimen noticed by me in the last number of the 'Zoologist' (S. S. 4806), measuring but two feet five inches in length and two inches in depth.—*John Gatcombe.*

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## Proceedings of Scientific Societies.

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### ENTOMOLOGICAL SOCIETY OF LONDON.

*February 2, 1876.*—SIR SIDNEY SMITH SAUNDERS, C.M.G., Vice-President, in the chair.

#### *Donations to the Library.*

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' vol. xxiv., no. 165; presented by the Society. 'Pinacographia—Illustrations of more than 1000 Species of North-West European Ichneumonidæ sensu Linnæano,' part 2; by the Author, M. S. C. Snellen van Vollenhoven. 'Transactions of the Linnean Society of London,' 2nd Series, Zoology, vol. i., part 2; by the Society. 'Bulletin de la Société Impériale des Naturalistes de Moscou,' 1875, no. 2; by the Society. 'L'Abcille,' 1875, tome xiii., livr. 20 & 21; by the Editor. 'The Naturalist: Journal of the West Riding Consolidated Naturalists' Society,' vol. i., no. 6; by the Society. 'Catalogus Coleopterorum Lucanoidum: auctore Major F. J. Sidney Parry, F.L.S.—Editio tertia;' by the Author. 'The Zoologist' for February; by the Editor. 'Newman's Entomologist' for February; by the Editor. 'The Entomologist's Monthly Magazine' for February; by the Editors. 'Notes on the Yucca Borer (*Megathymus Yuccæ*);' by the Author, Charles V. Riley, M.A., Ph.D. 'Petites Nouvelles Entomologiques,' nos. 137—140; by the Editor. 'Monographie du Genre *Erotyle*,' par P. A. J. Duponchel; by Mr. Edward Sheppard.

#### *Election of Members.*

Herbert Fortescue Fryer, Esq., of Chatteris, Cambridgeshire, and Edward Young Western, Esq., of Craven Hill, Bayswater, were balloted for and elected Ordinary Members.

*Paper read, &c.*

Mr. M'Lachlan directed attention to an article, by M. Flaminio Baudi, in the 'Petites Nouvelles Entomologiques,' respecting the habits of *Cychrus cylindricollis*, which he had taken on Monte Codeno feeding on the body of a snail (*Helix frigida*), into the shell of which the beetle was enabled to thrust its head and long narrow prothorax. Some interesting remarks were made by Mr. Bates and others on the peculiar structure and habits of the insect, which appeared to have been found only on a very sterile portion of the plateau of the mountain, and in no other part.

A valuable paper was communicated by Dr. D. Sharp, entitled "Contributions to an Insect Fauna of the Amazon Valley—(Staphylinidæ)." Of this important group of Coleoptera 487 species were enumerated as inhabiting the valley, of which 463 were described as new—suggesting forcibly how little is really known of the Staphylinidæ of Tropical America. Dr. Sharp also stated that he had devised a method of covering and hermetically sealing the type specimens, which, he believed, would accomplish their almost complete preservation, and that he hoped soon to be able to publish a description of the method. The author concluded with remarking on the great importance of certain sexual characters in distinguishing the species.

March 1, 1876.—Professor J. O. WESTWOOD, M.A., President, in the chair.

*Donations to the Library.*

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' vol. xxiv., no. 166; presented by the Society. 'Philosophical Transactions of the Royal Society,' 1871, parts 1 and 2; 1872, parts 1 and 2; 1873, parts 1 and 2; 1874, parts 1 and 2; 1875, part 1; by the Society. 'The Journal of the Linnean Society—Zoology,' vol. xii., nos. 60—62; by the Society. 'The Naturalist,' vol. i., no. 7; by the West Riding Consolidated Naturalists' Society. 'The Zoologist' for March; by the Editor. 'Newman's Entomologist' for March; by the Editor. 'The Entomologist's Monthly Magazine' for March; by the Editors. 'Journal of the Quekett Microscopical Club' for January; by the Club. 'Canadian Entomologist,' vol. vii., no. 12; by the Editor. 'Transactions of the American Entomological Society' for March; by the Society. 'The American Naturalist,' vol. x., nos. 1 and 2; by the Editor. 'L'Abeille,' tome xiii., livr. 23; by the Editor. 'Mittheilungen der Schweizerischen Entomologischen Gesellschaft,' vol. iv., heft 8; by the Editor. 'Briefe an C. Th. E. v. Siebold von R. v. Willemoes-Suhm,' nos. ii.—vi.; by Prof. Siebold. 'Annales de la Société Entomologique de Belgique,' tome xviii., fasc. iii.; by the Society.



*Election of Members.*

Dr. G. Kraatz, President of the German Entomological Society, Berlin, and Mr. Clemens Müller, also of Berlin, were balloted for and elected Foreign Members; and Mr. Oliver E. Janson, hitherto a Subscriber, was elected an Ordinary Member.

*Exhibitions, &c.*

Mr. Jenner Weir exhibited two grasshoppers in an undeveloped state, taken by himself in the Rhone Valley, *in copulâ*—a peculiarity which was frequently noticed amongst the Hemiptera. He also exhibited a remarkable moth from Madagascar belonging to the family Uraniidæ, bearing a very striking resemblance to a Papilio, except that it had the antennæ of a moth and the hind wings were destitute of tails.

Mr. Edmund Y. Western exhibited some Coleoptera, taken chiefly in Switzerland.

Mr. W. Arnold Lewis exhibited a specimen of *Argynnis Dia* taken in England by Mr. Wallace A. Smith, whom he presented to the Meeting. Mr. Smith stated, in answer to various enquiries by the President, that he captured the specimen himself in the year 1872, while sunning itself on some palings near his own house at Worcester Park, Surrey, and it was on an exceedingly hot day, though he did not remember the month. He had only commenced collecting insects in the preceding summer, and it was the first Fritillary he had ever had in his possession, and the specimen had never been out of his possession since. He was unable to identify the species at the time, and was not aware of the rarity of the insect until he showed it to Mr. Lewis. The specimen was handed to the Members and pronounced to be undoubtedly an *Argynnis Dia*. Mr. Lewis remarked that he had seen so many attacks in past publications on those who asserted that *Dia* was a British species, that he was very desirous that the testimony connected with the present capture should be recorded.

The President noticed a paragraph in 'Newman's Entomologist' stating that the collection of butterflies and Moths formed by the late Mr. Henry Doubleday was now being exhibited at the Bethnal Green Museum; and he hoped that special care would be taken of it, as it was by far the most valuable collection of British Lepidoptera in existence.

Mr. Dunning exhibited a pair of *Caradrina morpheus* taken *in copulâ* in the Regent's Park, the male being dead, and, although still attached to the female, several eggs were laid and larvæ hatched therefrom in the box in which they were placed.

Mr. Bates read a letter from Mr. Trovey Blackmore to Mr. McLachlan, stating that he was much interested in observing a notice in the 'Proceedings' of this Society respecting the habits of *Cyclus cylindricollis*, reported by M. Baudi to feed on snails. He had already called attention (in

the 'Entomologist's Monthly Magazine,' vol. xi., p. 214) to the fact that *Carabus stenocephalus*, *Fairm.*, fed on snails, which in Morocco were so very abundant as to form a marked feature in the landscape by covering the bushes so thickly as to resemble, at a distance, clusters of blossom. He had captured in all eighteen specimens of this scarce *Carabus*, and of these fifteen were obtained either feeding on snails or climbing up bushes of *Retama*, which were covered with snails, especially *Helix planata*. The *Carabus* having an unusually long head, and the prothorax being narrowed anteriorly, enabled it to thrust its head and prothorax a considerable distance within the shell in search of its food. It belonged to a group comprising several species found in North Africa, which much resembled *Cychnus* in appearance, and which possessed characters sufficiently marked to entitle them to form, if not a genus distinct from *Carabus*, at least a subgenus of *Carabus*. One of them (possibly a *var.* of *C. stenocephalus*) occurred in the more northern parts of the Atlantic coast of Morocco, and had been named by Fairmaire *C. cychnocephalus*; and another species (*C. Aumonti*, Lucas), had been found at Oran and in the Angera Mountains near Ceuta, which had a far narrower prothorax; but as he had not met with it himself he was unacquainted with its habits. He believed that other *Carabi* might be found whose habits were similar to those of *C. stenocephalus*.

Mr. Bates made some remarks on this as an instance of the modification of a form to adapt the insect to a difference of habit: it could not be considered a case of affinity, *Carabus* and *Cychnus* being totally distinct genera. The President, however, considered that the form was simply adapted to the purpose for which the insect was created.

The President drew attention to a subject now being much discussed in Germany and the United States of America, with reference to the spring and autumn broods of *Lepidoptera*, which proved to be modifications of the same species. He was much interested in the subject, and would be greatly obliged to any entomologist who would furnish him with observations and notes as to the different broods.

#### *Papers read.*

The President read a paper entitled "A Dipterological Note from Pompeii," containing remarks on the habits of the genus *Bombylius*. Also descriptions of some new species of *Tipulidæ* in the British Museum, accompanied by drawings, showing them to be furnished with hind legs of unusual length.

Mr. John Scott contributed a Monograph of the British species belonging to the Hemiptera-Homoptera (family *Psyllidæ*), together with a description of a genus which might be expected to occur in Britain.—*F. G.*

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## NORFOLK AND NORWICH NATURALISTS' SOCIETY.

At the usual monthly meeting of this Society, held on the 1st of March, the President in the chair, Mr. J. H. Gurney, jun., delivered a lecture entitled "The Rambles of a Naturalist in Egypt," giving an account of the birds observed by him in that country during his six months' visit early in the past year, with remarks upon their habits and distribution.

Before Mr. Gurney's lecture, a paper by Mr. F. Norgate, of Sparham, was read by Mr. H. D. Geldart, entitled "A Plea for those Species of Birds too often destroyed in this Country through the mistaken zeal or vulgar prejudices of Gamekeepers and Gardeners, with Notes on the Nesting Habits of various Species, and their Encouragement by the erection of Nesting-boxes." Mr. Norgate commenced by advocating the claims to protection of the owls, titmice, &c., in whose favour, from observations of his own, he made out a most satisfactory case; as, for instance, the finding of twenty good-sized rats in the nest of a barn owl, which being perfectly fresh, and the weather very hot at the time, must have been all killed during the previous night, whilst in about thirty owls' nests examined by him not one contained the remains of any game bird. This and many other equally convincing instances of usefulness to man both of owls and many species of small birds were adduced by Mr. Norgate as reasons for their being spared the wanton destruction which too often awaits them on all hands, and which is only to be accounted for by ignorance of their habits and of the services they in reality render us. Having shown that these birds are really worth encouraging, Mr. Norgate next proceeded to speak of the best mode of affording them protection, and described a plan of constructing and erecting nesting-boxes, which he has employed with singular success, giving a list of the birds which would most readily avail themselves of these artificial homes, and concluded with some highly interesting remarks upon the nesting habits of both land and water birds, which partly by this means he had been enabled to observe.

A vote of thanks to Mr. Norgate for his valuable and interesting paper was carried unanimously.

Mr. J. H. Gurney, jun., then delivered a lecture on "The Rambles of a Naturalist in Egypt." Confining himself almost entirely to the Ornithology of the country, remarkable for the number of aquatic birds making the Nile their home, he stated his principal object in visiting Egypt last year was to observe them at the period of their nidification: the number of species identified by him was 223—far in excess of those observed in Algeria. After giving the number of game-birds shot by the party,—consisting of snipe, quail, two species of sand grouse, and ducks (of which latter they were too late in the season to obtain any great number),—and stating that, as the snipe-shooting of the Delta was equal, if not superior, to the best to

be obtained in India, Egypt offered attractions equally great to the sportsman and naturalist, Mr. Gurney spoke of the enormous number of ducks found in some of the lakes,—flocks of which he described as looking like islands whilst in the water, and in the air like the smoke from the funnel of some great steamboat,—also of the great numbers of flamingoes, which rose like a roseate cloud in the air. He gave an amusing account of a night expedition for the purpose of taking coots with a casting-net—a peculiar mode of fowling practised by the natives. In giving a list of various naturalists who have written on the birds of Egypt, Mr. Gurney said he hoped ere long to add a work of his own to those already published. Whilst speaking of migration, the lecturer stated his belief that some of our summer migrants amongst the Insessores may be considered to breed in Southern Africa in winter, as well as in England in the summer. Perhaps the most important fact discovered was that of the lesser white-fronted goose (*Anser minutus*, Naum.) in Egypt, this bird having hitherto been regarded solely as a northern species. On the monuments in Egypt the Egyptian goose is frequently figured, as well as the sacred ibis: the latter species, if it ever existed there as an indigenous bird, has—like the hippopotamus, the papyrus, and the lotus—receded before the advance of civilization; but the former is still an inhabitant of the districts in which its outline is so faithfully and minutely portrayed. To the shame of our countrymen, many Goths calling themselves “gentlemen” sadly mutilate and deface the pictures and decorations of the ancient tombs by writing or scratching their names upon these interesting records—a practice which cannot be too deeply deplored. With regard to the birds of prey, Mr. Gurney stated that they abounded greatly, in consequence of the unlimited supply of food in the shape of countless hordes of semi-wild pigeons and other birds which exist. Kites and vultures also abounded, and form the sanitary police of the country, for the performance of which useful but disgusting service they are highly valued, and he believed that it was sight, and not scent, which guided them to their prey. Many writers have identified the sacred hawk of ancient Egypt with the kestrel; this Mr. Gurney thought was a mistake, and that the lanner falcon is in reality the bird depicted: in this opinion Mr. Gurney’s father shared. After a notice of the numerous and beautiful birds of the heron tribe, Mr. Gurney briefly alluded to the Entomology of the country, which appears to consist chiefly of fleas, flies and mosquitoes, and concluded with a spirited account of the first crocodile seen by his party, and their all but successful attempt to bag the tough-skinned monster.

The President proposed a vote of thanks to Mr. Gurney for his interesting lecture, which was carried unanimously.—‘*Norfolk Chronicle*.’

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*Ornithological Notes from Norfolk.*

By H. STEVENSON, Esq., F.L.S.

(Continued from Zool. S. S. 4778.)

JANUARY, 1876.

*Eider Duck.*—A female was shot at Kelling, near Holt, on the 2nd.

*Shore Lark.*—A considerable flock of these birds was observed in the salt-marshes at Blakeney in the first week in January, and may have frequented that part of the coast for some time before they were recognised. From some notes on their habits by Mr. J. Tillard, of that place, it seems that he first remarked them on the salt-marshes there on the 3rd of January, when he shot two out of a flock of about ten, and the next day three more. About a week later he killed six, on the "beach-way," nearest the sea; but they showed a decided preference for the salt-marshes, and he only once saw them alight on the stones of the beach. He never saw more than fifteen or twenty in one flock, but they generally consorted, in small numbers, with snow buntings, and it was difficult to distinguish them on the wing. On one occasion he killed a snow bunting out of a flock, and on going up to it found a shore lark sitting by it, which seemed very much disinclined to leave it as he approached. They were, at first, a good deal tamer than sky larks, and, when settled, crouched on the ground like those birds.

*Siskin.*—This species, which is a very uncertain winter visitant to this county, seems to have been plentiful this month. The Norwich bird-dealers have had a good many, and on the 6th a flock was seen on an alder at Northrepps. Mealy redpolls appear to have been as scarce.

*Fieldfare.*—A pretty variety, with the feathers of the head nearly all white, was killed during this month in the county.

*Bittern.*—One shot at Weybourne on the 7th.

*Peregrine.*—An adult female was shot on Brancaster Marsh on the 8th, as recorded in the 'Field,' and another female at Melton Constable on the 15th.

*Goosander, &c.*—The severe but brief period of frost about the middle of the month brought a sprinkling of "hard-weather" fowl to the waters of Breydon, consisting of some goosanders, golden-

eyes and smews, with a few old birds amongst them; and on the 15th two fine male goosanders were sent to a Norwich birdstuffer from Aldeby, near Beccles. Altogether the past winter has been remarkable for the dearth of wild-fowl of all kinds.

*Roughlegged Buzzard*.—A female, in its first year's plumage, was shot at Northrepps on the 22nd, and another specimen the following week at Beeston Regis. The Northrepps bird had been feeding on a rabbit, and was observed in the neighbourhood for some days before it was shot. Mr. J. H. Gurney, jun., has come to the conclusion that the supposed common buzzards, recorded in my last notes, as seen at Northrepps, were of this species, which has appeared so numerous during the past autumn and winter. (See Zool. S. S. 4829).

*Sea Eagle*.—A fine young eagle of this species was shot at Fritton Decoy, near Yarmouth, on the 22nd—the same recorded as a golden eagle in 'Land and Water' of the 5th of February. Another sea eagle was also killed about the same time in the neighbourhood of Yarmouth.

*Black Redstart*.—Since completing my last notes I have heard of a specimen of this somewhat rare species in Norfolk having been killed at Cley on the 4th of December last. Mr. J. H. Gurney, jun., who has seen it, describes it as in female plumage.

*Montagu's Harrier*.—A young male was killed at Melton Constable on the 19th.

*Magpie*.—A male bird was killed at Northrepps on the 18th.

#### FEBRUARY.

*Bittern*.—A female shot at Hickling on the 3rd.

*Waterhen*.—Mr. Cordeaux (S. S. 4709) records the appearance of a supposed migratory flock of these birds in his neighbourhood on the 23rd of last October, and Mr. Gurney informs me that a flock of about fifty was seen in a meadow at Keswick, near Norwich, on the 10th of February. Mr. F. Norgate, also, tells me that, in the middle of January, he found numbers of waterhens on the stream which runs through the village of Sparham, near Norwich,—many more than are usually seen in that neighbourhood,—and after shooting all his dog could find in one day, the next, or even a few days later, he met with as many more, and this with only the barest shelter for them, in the way of sedges or rushes, on either side of the river. It would be interesting, were

it possible, to ascertain how far these congregations of a species, rarely seen in flocks, is due to actual immigration or to an inland migration of residents driven out from the broads and fens of the county by the heavy floods of November, and the depth of water still unsubsidied in some localities. Snipe, plover, and other marsh birds were either driven out of the county or to the upland fields from the extent of the floods, and even waterhens cannot exist on an interminable waste of water, and would be likely, therefore, to migrate for a time to any stream and meadow-lands affording food and foothold, essential to their wellbeing. Very large numbers of gulls and lapwings, in the early part of the year, were attracted to the marsh-lands immediately surrounding this city—no doubt to feast on the drowned worms in the meadows, as the waters subsided; and I have heard strange stories of the rats, washed out of their haunts in the “fens,” committing great ravages upon the upland root-crops and granary stores. In some places they might be seen collected in bunches on the trees, surprised by the sudden rush of the waters over the fen-banks, and boys in boats amused themselves by catching, in buckets, the numbers seen swimming about and seeking, like the antediluvians of old, some spot still raised above the rising flood. Woodcocks, from the same cause, driven from low-lying carrs and plantations, have been shot in localities where they are rarely met with.

*Hawfinch.*—A male was shot at East Carlton on the 2nd, one at Flordon on the 9th, and another at Sprowston, near Norwich, on the 26th.

*Great Spotted Woodpecker.*—An adult male was shot at Thorpe Market on the 27th.

*Jack Snipe.*—A few of these birds were met with in some inland marshes about the middle of the month, but no whole snipe with them.

*Blackheaded Gull.*—Mr. Purdy informs me that, when driving between Ingworth and Cromer, on the 24th, he saw an almost continuous flight of small gulls passing inland, and as some had distinctly black heads he presumed they were all of this species. On reaching Cromer he made out with his glass a large white mass of birds, on the water about a mile from the beach, to be also small gulls. Similar flights were observed the same day from the North Walsham road pursuing a like course inland.

## MARCH.

*Green Woodpecker.*—On the 2nd of March two green woodpeckers were observed at Northrepps, fighting violently on the ground amongst some dead brakes. One had hold, with its bill, of the tongue of the other, which was drawn out to its full length, but quitting its hold, after some seconds, the released bird immediately flew away, and the other pursued it.

*Sea Eagle.*—On the 8th Mr. Gurney was informed that an eagle had frequented the Sheringham woods for about a fortnight.

*Maggie.*—It is somewhat singular that on the 17th of March Mr. J. H. Gurney, jun., again saw five magpies in the same field at Weybourne, where he had on two previous occasions observed a similar group, as recorded by him in the 'Zoologist' (S. S. 4797). It seems probable, if unmolested, that some of them may remain to nest in that locality.

*Goshawk.*—An immature bird of this species, which is an uncommon visitant to Norfolk at the present day, was recently killed near Melton Constable.

*Curious Capture of a Shorteared Owl.*—On the 11th of March a male shorteared owl was brought to a birdstuffer in Norwich with the following particulars:—A lad crossing a marsh at South Walsham, on his way home from work, in the "dark hour," observed a lapwing sweep past him pursued by a larger bird. They took no notice of him, and both fell to the ground within a few yards of the spot where he was standing, when, creeping carefully towards them, as they laid struggling on the marsh, he threw a sack he had been carrying over the two, and then killed them both. The pursuer turned out to be the shorteared owl here noticed.

*Polish Swan.*—The Rev. C. T. Lucas, of Burgh, near Yarmouth, writing to me on the 18th of March, says that a Polish swan, a female, was shot flying over Filby Bridge on the 13th. This bird, I have no doubt, for we have had no real wild-swan weather this winter, had—as well as the pair recorded by Mr. Gunn (S. S. 4789) as killed on Hoveton Broad last December—escaped, through being wholly or partly unpinioned, from some private water in this county. Of the Hoveton birds Mr. Blofeld informs me that one was a very strong flyer, and both were shot on the wing. One of them, however, showed traces of pinioning, as did a previous specimen



shot flying over the same broad in November, 1868. In confirmation also of my belief that the above were only escaped birds, I may add that on the 21st of January of this year, a swan, answering in all respects to the description of the so-called Polish, was purchased in our fish-market, and on enquiry was found to have come off a lake near Norwich, where probably others are kept without the proprietor being aware that they differ from the ordinary "mute" swan, and most likely in other parts of the county these swans may have been supplied, by London dealers, for the ordinary species—a point which I hope to be able to ascertain in the course of the ensuing summer.

*The Great Bustard.*—Having been unfortunately prevented by illness from visiting Hockwold at the time when the fine male bustard, recorded by Mr. H. M. Upcher (S. S. 4882) took up its temporary quarters in the "Fen," I can add nothing further to his record than that no tidings have since been received of the noble stranger.

*Avocets.*—Two beautiful specimens were shot on Breydon on the 30th and 31st, and nothing shows more plainly the uselessness of the present 'Wild Birds Protection Act,' with its absurdly reduced penalties, than the fact that no sooner are birds of this kind—the first and rarest in the list of protected (?) species—observed on our coast than their fate is sealed, and a purchaser found, all the more readily because the gunner, a little nervous about his part in the transaction, is glad to dispose of the spoil to collectors at less than half the real value. If Mr. Chaplin's Bill is passed this session, I believe such Act will be put in force in future.

HENRY STEVENSON.

Norwich, April 5, 1876.

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*Ornithological Notes from North Lincolnshire.*

By JOHN CORDEAUX, Esq.

(Continued from S. S. 4780).

JANUARY, FEBRUARY AND MARCH, 1876.

On looking over my note-book I find that there is scarcely anything worth recording since the commencement of the year. Never do I recollect such an utter dearth of birds, or so wet, depressing and uninteresting a season. The weather, as a rule,

from the 1st of January to the middle of March, has been extremely mild and open, with much rain—February being an exceptionally wet month, rain falling on twenty-four days, and the barometer never up to thirty inches after the 3rd. It has also been since Christmas the very worst wild-fowl season known for many years on the east coast—neither duck nor wader to be found along the shore. We might walk for miles without seeing anything, except the ubiquitous hoodie or a troop of wandering gulls; inland also, with the exception of a few pairs of mallard on the drains and blow-wells, neither plover nor snipe, and I have not come across a single teal during the last three months, or had a pull at a golden plover. Even in an ordinary season we can generally manage to obtain, with a fair amount of exercise, a supply of wild-fowl for the house up to the end of February. This year I have scarcely had a gun in my hand since Christmas. You might have carried one for days without getting a shot. There has been also no wild-fowl in the game-shops, and this is always a certain criterion that there has been nothing to shoot.

*Thrush.*—After the short burst of sharp weather in the middle of January considerable flights of thrushes, with a few redwings, visited the fields of young clover in the marshes. They continued in these localities for about ten days, and then left the district. I never succeeded in ascertaining what object they had in frequenting so persistently situations far removed from their usual haunts. It was probably due to some favourite food. That the Merulidæ have not suffered from a scarcity of food is apparent by our hollies and other berry-bearing shrubs being still (April 3rd) resplendent with glittering carcanets of coral; even the abundance of haws on the hedges are in many places scarcely touched.

*Rock Dove.*—January 17. I examined one shot recently on the coast. The nearest nesting station of the rock dove is Flamborough Head.

*Chaffinch.*—The migratory flocks visiting us in the autumn are composed almost entirely of females and the young of the year. It is rarely indeed in these coast marshes that we see any number of old males. I have this season, however, come across some flocks of old males a few miles from this on the high wolds—most notably under beech trees; and on another occasion, when riding through one of Lord Yarborough's woods, a large flock of brilliantly coloured males flew up from a plot where buckwheat

had been grown. Although separated into distinct flocks of males and females, with the young of the year, the sexes have never been very far apart—the former on the high wolds in plantations and woodlands, the latter in the maritime plains.

*Blackbird*.—January 20. There was a blackbird in full song this morning.

*Golden Plover*.—January 28. A dull warm night; heard spring notes of golden plover.

*Rook*.—February 27. Commenced building.

*Tree Sparrow, &c.*—March 4. Rode across a great extent of country to-day; only observed a few fieldfares, flocks of tree sparrows and yellowhammers.

*Peregrine Falcon*.—Have recently examined two shot in the neighbourhood of Louth, North Lincolnshire; one a beautiful adult male, the other a female in first year's plumage. The peregrine, like the roughlegged buzzard, appears to have been exceptionally numerous in the eastern counties during the autumn and winter.

*Little Gull*.—One, a bird of the year, shot on the coast near Tetney in February.

*Yellowhammer*.—March 13. In large flocks, frequenting gardens, shrubberies, &c.

*Snow Bunting*.—April 1. Two on the Humber embankment to-day; a flock seen in the same locality on the previous day. This is the latest date I have ever known them remain in this district.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,  
April 5, 1876.

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*Notes from West Somerset.*

By the Rev. MURRAY A. MATHEW, M.A.

March 23rd. Driving back from Taunton this afternoon I had a very near view of an old male merlin, which popped over the hedge and then skimmed over the road close to the side of my carriage.

April 1st. Going into Taunton this morning I noticed a fawn-coloured common sparrow, with a white tail, sitting on a hedge.

April 3rd and 4th. Very large flocks of fieldfares in the meadows on each of these days.

April 4th. Heard the first chiffchaff. This is nearly three weeks behind the usual date for this little warbler's cheerful call to be first detected. Noticed in the 'Times,' a couple of days since, an account of nightingales having been heard singing near Chislehurst on the 30th of March. Probably the real songster was a full-voiced thrush or blackbird. An average date for the nightingale to be heard singing for the first time in the spring is the 12th of April. In 'Our Summer Migrants,' Mr. Harting gives the end of the second week in April as the period of the nightingale's arrival in the South of England. It is well known that the males precede the females by a few days, and are generally mute while they are taking up their quarters for the summer in some favourite hedge or copse. Any one well acquainted with the bird can then detect its presence by the harsh call-note it occasionally utters while restlessly examining a hedge. The lingering winter has delayed the arrival of the earliest and most hardy of our summer visitants, so that it is still more unlikely that the nightingale should have come a fortnight before its time, and have burst out at once into song. I have often wondered at the number of people who, ignorant of the true note of the nightingale, confidently raise some thrush, blackcap or other warbler to the dignity of the *prima donna* of the copse. Often have I gone out to listen to some reputed nightingale, and heard nothing more than the flute-notes of a blackbird or the clear melody of a thrush.

April 5th. In the birdstuffer's shop in Barnstaple I had to-day the pleasure of examining a very fine example of the snowy owl which had wandered so far south as Exmoor, and had been trapped there on the 22nd of March. A shepherd had observed the bird capture and kill two hares in succession, and had hastened to inform the keeper that a large bird was making short work with the hares on the forest. A trap baited with the remains of one of these hares soon proved fatal to the splendid bird, which is a very large female, and from its spots I should think two or three years old. I am told that Mr. Gatcombe reports the occurrence of another snowy owl, a male, on Dartmoor—not unlikely the mate of the Exmoor bird. My friend the Rev. W. S. Hore has in his collection a snowy owl—a much older bird than the one so recently obtained near Barnstaple—which was picked up dead many years

since in the neighbourhood of Plymouth, and was recorded by Dr. Couch, in his 'Cornish Fauna.'

April 7th. Saw the first swallows and sand martins flying over the sands at Instow, North Devon, this morning.

With respect to my very dark roughlegged buzzard from North Devon, I may state that, since my last notes about it, I have had the advantage of Mr. J. H. Gurney's opinion, who kindly came to Bishop's Lydeard expressly to examine it. He says, "Your buzzard is a splendid specimen, and I believe very nearly, if not quite, unique." But it does not correspond in the transverse bars of the tail with the American roughlegged buzzard (*A. Sancti-Johannis*); for my bird has broad bands, where in the American species (if, *pace* Dr. Coues, we may so term it) those of a similar colour are narrow. The American *A. Sancti-Johannis* has narrow bars of gray colour and broad bars of dark colour; while *A. lagopus*, on the contrary, has broad bars of a gray-white, alternated with narrower bars of brown; and, as far as the bars can be traced on my dark specimen, they agree in character with the markings on the tail of *A. lagopus*. In Wilson's 'American Ornithology,' there is given a figure of what he called the "black hawk" (*A. Sancti-Johannis*), in which the bands across the tail are well depicted. Mr. Gurney's conclusion is that the dark buzzard I possess is a melanism, or Sabinism, of *A. lagopus*.

MURRAY A. MATHEW.

Bishop's Lydeard, April 10, 1876.

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*Ornithological Notes from Devonshire and Cornwall.*

By J. GATCOMBE, Esq.

(Continued from Zool. S. S. 4824.)

FEBRUARY AND MARCH, 1876.

*Herring Gull*.—February 3. Weather very mild and fine. Herring gulls are now, many of them, in full breeding plumage, and have already commenced their amatory cries in the air. These birds vary greatly in size: the other day I examined an enormous adult specimen, which was fully as large as an ordinary-sized *Larus marinus*, its wing measuring nineteen inches from the carpal joint.

*Lesser Spotted Woodpecker and Knot*.—February 10. I have just seen a specimen of the lesser spotted woodpecker and a knot, both killed in the neighbourhood of Plymouth.

*Northern Diver*.—February 15. Observed a northern diver flying high across the Sound to-day: this species, however, is but seldom seen on the wing in the winter, unless moving to a distant place. On the 28th one of these birds was chased and caught by some men in a boat: it had been wounded, and, strange to say, appeared to have lost, or rather moulted, all the primary quills from both wings, as many new spotted feathers were appearing on different parts of the body; but, owing to its exceeding fierceness in springing and striking at everything and everybody within its reach, and being in a rather dark shed, I unfortunately could not manage to see whether the primaries were being replaced by new ones or not. However, I know my shins were terribly wounded in the attempt. The poor bird was continually uttering a most melancholy cry, and I tried all in my power to obtain its release, but without effect.

*Lesser Blackbacked Gulls*.—March 1. These birds have now just begun to make their appearance in full summer dress, but the greater blackbacks are taking their departure.

*Blackheaded Gull* (*Larus ridibundus*).—March 9. Many old birds of this species have already assumed the complete dark head, and will soon leave for their breeding stations. I have never known even a young bird to remain with us during the summer.

*Black Redstart*.—March 13. Observed a black redstart on the rocks near the Plymouth Citadel, and heard the spring note of the greenfinch in our gardens. On the 21st (wind east and very cold, with snow during the night) I saw two or three more black redstarts on the coast.

*Great Spotted Woodpecker*.—March 17. Examined a great spotted woodpecker, which had been killed near Plymouth, and saw two more black redstarts.

*Wheatear*.—March 19. Wind blowing very hard from the north, with occasional snow-showers, and bitterly cold; notwithstanding which several wheatears had made their appearance on the coast, all males and in fine spring plumage.

*Common Gull* (*Larus canus*).—A great many common gulls, or "mews," have visited our harbours lately. Generally adult birds, but they did not nest in this locality.

*Common Buzzard and Shorteared Owl*.—March 21. A common buzzard and some shorteared owls have been brought to our bird-stuffers within the last few days. The latter species has certainly been unusually plentiful this season.

*Lesser Blackbacked Gulls calling in the Air.*—March 21. Our harbours and docks are now full of lesser blackbacked gulls, mostly in pairs and perfect summer plumage; indeed the air quite resounds with their cries.

*Ring Ouzel, &c.*—On the 29th a ring ouzel, blackbird and wheatear were brought in from the Eddystone Lighthouse, having flown against the lantern during the night, and the light-keepers say that birds have, within the last few weeks, literally swarmed around the lamp after dark.

*Sandwich Tern.*—March 31. A party gull-shooting in the Sound (for the last day of the season) came across a flight of Sandwich terns, from which they killed one, a magnificent specimen in full nuptial dress, with a lovely roseate tint pervading the lower parts. No doubt they dropped in on the way to their breeding stations.

*Wheatear.*—March 31. A large flight of wheatears arrived on the coast to-day, consisting of both males and females. The redstarts have not yet left.

JOHN GATCOMBE.

Durnford Street, Stonehouse, Devon.

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*Notes from Portrush, County Antrim.*

By J. DOUGLAS-OGILBY, Esq.

THE severe storms which we have lately experienced have been singularly unproductive of zoological rarities on this coast. The fact of the wind being off shore during the greater part of the time may perhaps account for this, since I have found a good many waifs washed ashore during the last four days, when the storm had gone round to the north and west. Of these, however, only two are worth mentioning—namely, a young specimen of the tadpole hake (*Raniceps trifurcus*, Walbaum), measuring only four inches and a half, which I picked up dead upon the strand on the 15th of March. This is the second example which has come under my notice here, the first being recorded in the 'Zoologist' (S. S. 4753). The curious fact of this fish being generally washed ashore dead would seem to prove that it lives at the bottom in very deep water, where neither nets nor lines can be used, and where it is perhaps not so rare as is supposed. This specimen, although so small, agreed in every particular with the description in the third edition

of Yarrell's 'British Fishes,' and with my former example. The other was a fine specimen of the great pipefish (*Syngnathus acus*, Linneus), which, as previously mentioned (Zool. S. S. 4754), is a rare species here; it was washed ashore living, and measures fifteen inches and a half: the eyes were very prominent, and the irides bright yellow. As it was very active when I found it I thought I would try to keep it alive, so as to have an opportunity of observing its motions when swimming about; accordingly I got a large tub full of sea-water, into which I put it: my intentions were, however, most unexpectedly defeated by the persistent manner in which it kept the whole of its head and about an inch of its body out of the water; its attitude was something like that of the Hippocampus, as figured in Yarrell; perhaps, as they are allied genera, this was its natural mode of resting; and, as its tail was touching the bottom of the tub, it might have required a greater depth of water than I was able to give it. Of what use can so small an anal fin be to these fishes? On the 7th of February the crew of a boat, with whom I had gone out to see the lines hauled, caught a haddock; this is a great prize here now, as none have been obtained for the last ten years, the fish having quite deserted the ground, where they were formerly very numerous; this example, however, which I secured in the hope of getting a treat, was worthless, as when cut open it was found to be diseased and almost black inside. While I am on the subject of the Gadidæ, I may mention that a very beautiful variety of the ling (*Molva vulgaris*, Fleming) is often obtained here: it is of a pale violet colour, irregularly mottled with dark purple, almost black spots, and grows to the same size as the usual kind: it is caught only on a particular part of the bank, and is called by the fishermen "spotted ling"; they do not, however, consider it a different species to the normally-coloured examples. The cod and ling fishery here this season has been almost totally ruined by the enormous number of dogfish which took up their quarters on the bank at the beginning of the season, and have remained during the whole winter. They are of two kinds, *Acanthias vulgaris*, *Risso*, and *Scyllium canicula* (Linneus); the former being to the latter in the proportion of about twenty to one. Every boat comes in full of these pests, and I have seen many times over a dozen fine cod and ling brought up unsaleable on one line, very often nothing left but the back-bone and the head; and so ravenous are these creatures



that it is no uncommon occurrence to see several following a hooked fish to the surface, and even when it has been lifted into the boat, they will continue to swim after it, so that many are gaffed by the fishermen in this manner.

The only rare bird which visited us this year was an adult glaucous gull, and as it had a happy knack of appearing closely on Sundays only it escaped the numerous gunners who were on the look-out for it. On the 8th of February a friend of mine showed me a herring gull, in full summer plumage, which he had shot that day; this may be worth mentioning, as it was so early in the year. On the same day my friend shot a splendid adult male sheldrake, and two days afterwards I saw another and a pair of pintails out at the Skerries. In the last week of February I got a young razorbill, which had been driven ashore by the storm, but was apparently uninjured: I brought it to a large pool of sea-water to watch its method of diving: this it effected with great speed by using its wings half-opened, as well as its feet. Though it fed well on the day of its capture it died during the night.

The first week in March was marked by the appearance of flocks of snow buntings, which, however, passed straight on, notwithstanding the inclemency of the weather. Numbers of bernicles (*Bernicla leucopsis*, Bechstein) were also passing, and on the 14th especially, the wind being S.W., I observed a flock which could not have comprised less than five hundred individuals, besides smaller straggling bands. There is, too, a sensible increase in the number of purple sandpipers about the rocks, and I sprung a wisp of snipe out of the sandhills on the 17th, which was evidently waiting to continue its journey northwards. Large flocks of golden plover, in summer plumage, are down from the mountains, and their black breasts look very much out of place as they sit in the snow: neither did it appear natural to see rooks searching under the snow for materials with which to repair their nests. Twites have been exceptionally plentiful this winter, and during the last week I have seen eight specimens caught in springes, two of which I secured to try and induce them to breed in confinement: perhaps some of your readers will kindly inform me what is the best method of management, food, &c. I have only got a cage such as is used for breeding canaries. A few days ago I observed a pair of lesser blackbacked gulls acting in the same manner as skuas: they would follow some particular kittiwake,

until they forced it to disgorge its prey, which they either caught before it reached the water, or settled on the water and devoured: I have not seen the habit noticed of this bird before. A fine pair of Bewick's swans were shot about the last week of February, on the Lough Foyle slob: one of these, which was very slightly injured, is still living and apparently reconciled to confinement, as it feeds well and is not very shy: it is now in my possession.

I will conclude with an amusing parallel to the old belief that the waxwing was the harbinger of pestilence. Some time ago, as I was travelling from Wicklow to Dublin by train, I heard an old gentleman remark to a friend that "he feared some great misfortune was going to happen, as he had seen several white birds on Kingstown Pier for the three previous days." There are always a few snow buntings to be seen on the pier, and it was most likely these that had frightened him.

J. DOUGLAS-OGILBY.

The Nest, Portrush, County Antrim,  
March 18, 1876.

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*Ornithological Notes from the North-West Coast.*

By W. ARTHUR DURNFORD, Esq.

*Buzzard.*—A specimen of *Buteo vulgaris* was shot on Walney Island on the 4th of December, last year: it had probably been driven down from the fells by the hard weather, and, judging from the contents of its stomach, had recently been preying on the rabbits which abound in the island.

*Montagu's Harrier.*—One of these handsome birds has lately come into my possession, having been rescued from amongst a heap of rubbish in the shop of our local birdstuffer, a blacksmith by trade. This specimen was shot, in the autumn of 1874, on Walney.

*Longeared Owl.*—This species seems to have been unusually plentiful in this neighbourhood during the past year, and owing to the number of sportsmen who are ever on the watch, a considerable number have fallen victims. On the 18th of December, whilst waiting for ducks in the evening, I killed a longeared owl as it flew over one of the reservoirs in the immediate neighbourhood of a number of blast-furnaces, at least a mile from any trees or coppice.

*Shorteared Owl.*—During the winter months these birds resort in large numbers to the warrens and sandhills of Walney Island, where I have seen as many as six together, beating the ground for mice, between three and four o'clock in the afternoon. Whether they thus visit us in the ordinary course of their migrations, or whether they are driven from the high land by the frost and snow, I cannot say; the fact, however, remains that during the four or five winter months as many as nine specimens have been brought to the bird-stuffer in a single day, whilst it would be utterly impossible to procure one from the same locality during the spring or summer. The way in which these and others of our feathered visitors are ruthlessly destroyed immediately they appear on our inhospitable shores is a matter for real regret; and yet when a flight of birds, and especially such birds as owls, alight actually within the boundaries of a borough containing 40,000 inhabitants, and in a locality where one may meet a dozen men with guns on any Saturday afternoon, what else can be expected?

*Wheatear.*—First seen on March 30th, and again on April 10th at an elevation of nearly two thousand feet.

*Yellow Wagtail.*—First seen on April 10th.

*Rook.*—It is worthy of record that the large colony of rooks which inhabit the trees surrounding the well-known ruins of Furness Abbey, during the breeding season, invariably retire elsewhere—probably to Conishead Priory, a distance of about nine miles—to spend the winter. I have noticed the same thing before in the case of small rookeries, but never in an establishment of such large dimensions as that at Furness Abbey.

*Maggie.*—The number of these birds to be found in this neighbourhood strikes me as being somewhat unusual. I have frequently counted as many as thirty in a flock during the months of December and January.

*Kingfisher.*—A few years ago one of these birds killed itself by flying against the lighthouse on the south end of Walney Island, which is remarkable from the fact that I have never seen one in this neighbourhood. I am informed by Geldart, the keeper of the lighthouse, on whose evidence I place full reliance, that thirty years ago it was not an unusual thing for as many as a hundred birds of various kinds to kill themselves against the glass of the light in a single night, whereas during the last six months a stock dove and a woodcock are the only birds which have thus involuntarily

committed suicide. I suppose the great changes which have taken place in the neighbourhood, and the immense increase of lights both afloat and ashore since the time that this solitary lighthouse cast its rays on the waters of the Irish Channel, may account, at least partially, for the difference.

*Turnstone*.—During the past winter I have killed several specimens of *Streptilas interpres* on Walney and Foulney Islands.

*Heron*.—Whilst on a visit to the lakes last August I was glad to observe one of these birds fishing on the margin of Rydal Water. This seems to disprove the statement made in some of the guide-books, that the heronry on the lake has been deserted for several years.

*Curlew*.—Plentiful on the sand and mud-flats all along the coast, and, thanks to their shy and wary habits, not likely to be exterminated at present. On making inquiries of the boatmen who ply between Walney Island and the mainland as to the reason of the dearth of wild-fowl in the market during the past season, I was informed that all the sea-birds had been shot during the severe winter of 1874-5, when any one who chose to take a gun to Walney brought strings of birds of all kinds, the hard weather and freezing fogs rendering them easy of access. However, my observations tend to show that curlews, whimbrels, oystercatchers and redshanks are as plentiful as ever, though extremely difficult to approach, and I have little doubt that another severe winter would produce similar results. I found curlews nesting in various localities in this neighbourhood last spring, but was not successful in discovering their eggs, being invariably outwitted by the wonderful cunning and sagacity of the old birds.

*Godwit*.—Observed a large flock of these birds on the 19th of February, on the shores of Walney Island, but was unable to obtain a shot at them. They had apparently recently landed on our coasts, and were doubtless of the bartailed species.

*Greenshank*.—A few single birds observed on each occasion of a visit to the estuary of the River Esk up to the 17th of March. None seen since that date.

*Woodcock*.—Very plentiful in the thick coppices to the north of this town, where I fancy they breed in considerable numbers. Last spring I several times observed a single bird wending its way to the fields about dusk, and two years ago a friend came across several young birds in a retired glade.

*Shieldrake*.—It gives me much pleasure to be able to record that a considerable number of these handsome ducks still breed annually on our coast. Last summer I was shown a brood of nine which had been hatched under a hen at North End Farm, Walney Island, from eggs taken in the neighbouring sand-hills; and on March 25th of this year I counted as many as fifteen or twenty pairs in a comparatively small area. Unfortunately, since the last-mentioned date, these birds have not been permitted to rest in peace, four at least having fallen victims to a single gunner in this town.

*Goldeneye*.—During the whole winter a small flock of these pretty little ducks, varying in number from two to twelve, has occupied a large reservoir close to the Iron and Steel Works in this town. Owing to the persistent way in which they have kept to the centre of the sheet of water, I believe that not a single one has been killed during the season, although duck-guns of prodigious length, as well as sundry rifles, have been brought to bear upon them. The last disappeared about the middle of March.

*Guillemot*.—On the 10th of February I procured one of these birds, in full summer plumage. At this period of the year enormous flocks congregate in Morecambe Bay, previously, no doubt to retiring to their winter quarters.

*Cormorant*.—A few usually frequent the North End of Walney Island during the winter, though specimens are seldom procured. On the 11th of March I observed a considerable number in an estuary on the Cumberland coast, but a fortnight later not one was to be seen. No doubt they had moved off to St. Bees Head, about ten miles further north, where I am told they breed annually.

*Roseate Tern*.—I have lately endeavoured in vain to trace out a pair of these birds—now almost, if not quite, unknown in their once famous breeding-place on Walney Island—which were killed two years ago at Biggar (Walney Isle), and stuffed by a blacksmith in Barrow, who described them as rose-breasted “sparlings” (local name for terns). I have still a remote hope that I may come across specimens of this bird, as well as *Sterna cantiaca*, during the ensuing summer, but the strictness with which the breeding-places are protected by special watchers placed there by the farmer, whilst it is undoubtedly an admirable arrangement, prevents the ornithologist from pushing his researches as far as he would desire.

*Blackheaded Gull*.—The gullery on Walney Island has been too often dilated upon to require any description. It is still in a

flourishing condition, the portion occupied by the terns having been more thickly tenanted last year than in any previous season, notwithstanding that it is within two miles of the centre of a manufacturing town, and is illuminated during the night by the glare of sixteen blast-furnaces.

W. ARTHUR DURNFORD.

Roper Street, Barrow-in-Furness.

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*Notes on the Structure of Aquariums.*

By W. A. LLOYD, Esq.\*

ON the 1st of March, 1876, Mr. W. S. Kent read, at the Society of Arts, a paper on Aquaria, and I was invited by the Chairman, General Cotton, to join the discussion which followed the discourse, but I preferred to make my remarks in type, and I now will do so, having before me the paper (as printed in the 'Journal of the Society of Arts' for March 3rd), crowded with errors both of commission and omission, from end to end.

Mr. Kent's chief point seems to be his objection to the plan of aquarium construction which I have successfully pursued for many years, and which consists in using unchanged sea and fresh water, kept in constant circulation, between a series of show-tanks containing animals and plants exposed to light, and an underground dark cool reservoir, containing several times as much water as the collective capacity of the show-tanks, Mr. Kent maintaining that large dimensions in the reservoir are unnecessary, for reasons which he does not set forth. I therefore have now to describe why I believe and know they are requisite.

The average temperature of the air of the British islands, as determined from observations made during about one hundred years, is about 48° F. This, however, does not express the true temperature in its great variations, which range from occasional extremes of 102° F. above zero, to 8° F. below it, thus giving so great a range as 110° F. Before me is a chart of British temperatures from the year 1771 to 1853, in which these variations are shown in zigzag lines, which Mr. Hugh Gordon has, in a very

\* Part of a reply—published in the 'Journal of the Society of Arts,' and communicated to the 'Zoologist' by the author—to a Lecture on "The Structure and Management of Aquariums," delivered by Mr. Kent at the Society of Arts, and noticed in the April number of this journal (S. S. 4853).

beautiful manner, converted into a series of elliptically equated curves, which place before the eye in a striking way the cycles of years of hot and cold temperatures which mark our very variable climate.

At or near the surface of the seas of our islands, where aquarium animals came from, the range, however, is very much less, the water being neither so hot nor so cold as the air, especially of the air in inland places, the temperature of our sea water being from  $45^{\circ}$  F. to  $65^{\circ}$  F., and having an average of about  $60^{\circ}$  F. This tolerably uniform temperature of the sea-water tends to give a similar uniformity to the air immediately in contact with it, which accounts for the mildness of the climate at seaside places in winter.

In the 'Engineer' of October 15th last is an illustrated aquarium communication by me, but not signed, in which I have described the manner in which this uniformity is effected. The water is heated at the earth's equator, and a surface-current of warm water flows towards both of its poles, and there becoming cold, it sinks and returns towards the equator in an under-current, the sinking, and therefore the primary cause of the motion, being caused by the behaviour of sea water under the influence of cold, as a consequence of the density which it acquires from the salts it holds in solution.

Dr. W. B. Carpenter, who has devoted much attention to oceanic circulation, has also explained all this, and has testified to the correctness of the means which I have introduced in *Aquaria* to represent what Nature does.

Fresh water behaves somewhat differently to sea water when exposed to cold, but our rivers and other streams, and ponds, and lakes, similarly to the sea, do not have such great ranges of temperature as our air, and, to sum up on this point, it has been found that the best temperature for the sea and fresh water of *Aquaria* in which to keep British aquatic and non-lung-breathing animals is from  $55^{\circ}$  F. to  $60^{\circ}$  F. throughout the year. In winter this temperature might be easily maintained by means of fire, and in summer it might be kept down by refrigerating apparatus; but without some such counteracting means of warming and cooling, an aquarium would injuriously follow the temperature of the atmosphere. It occurred to me, however, in the year 1854, by seeing what was done in the aquarium of the Regent's Park Zoological Gardens, where the sea-water reservoir was, and is, too small, and by the familiar domestic appliance of a cool cellar or

under-ground back kitchen, that a much easier mode of equalising temperature in Aquaria might be used, and the various steps by which I reasoned out and worked out such success as I then, and have since, attained, are described in a five-column communication I made to the 'Gardeners' Magazine,' and in pages 65 to 102 of the 'Handbook to the Royal Westminster Aquarium,' both published on the 22nd of January last, and both written during the week previously. The main principles involved in the water-circulating system in all public Aquaria constructed under my supervision, turn on the law governing the following facts:—If a quart of water at  $100^{\circ}$  F. be added to a quart at  $50^{\circ}$  F., the mixture of the two will be  $75^{\circ}$  F. If one at  $100^{\circ}$  F. be added to two at  $50^{\circ}$  F., the result will be  $66\cdot6^{\circ}$  F. If one at  $100^{\circ}$  F. be added to three at  $50^{\circ}$  F., the mean will be  $62\cdot5^{\circ}$  F. If one at  $100^{\circ}$  F. be added to five at  $50^{\circ}$  F., the result will be  $58\cdot3^{\circ}$  F.; and if the proportions be one to twenty, the mixture will be  $52\cdot3^{\circ}$  F., and so on; the larger the proportion of the colder mass being to the warmer, the nearer the mean of the two masses will approach to the temperature of the larger mass. The entire thing is shown in the accompanying diagram, where B is a large under-ground, cool, dark reservoir, C is a pipe conveying water from B to the show-tank A, containing fishes or other animals, and D is a pipe conveying water from A to B. The six arrows indicate the direction in which the water flows. E is a pipe to re-supply the water which evaporates. As this is an ideal representation, showing only results, all the machinery (as engines and pumps) giving these results, by moving the water, is omitted.

Now let it be supposed that—which really would be the case in an English summer, without any circulation going on between A and B—the tank B would have its water at about  $60^{\circ}$  F., and A would have its water at about  $75^{\circ}$  F. On the circulation being established, and continued for some time, the water in A would become cooler, and that in B warmer, than before, and the mean temperatures of the two, varying according to the proportionate quantity of water in B, would be according to the seven following formulas:—

No. 1. A, 2; B, 1; result,  $70^{\circ}$  F.

No. 2. A, 1; B, 1; result,  $67\cdot5^{\circ}$  F.

No. 3. A, 1; B, 2; result,  $65^{\circ}$  F.

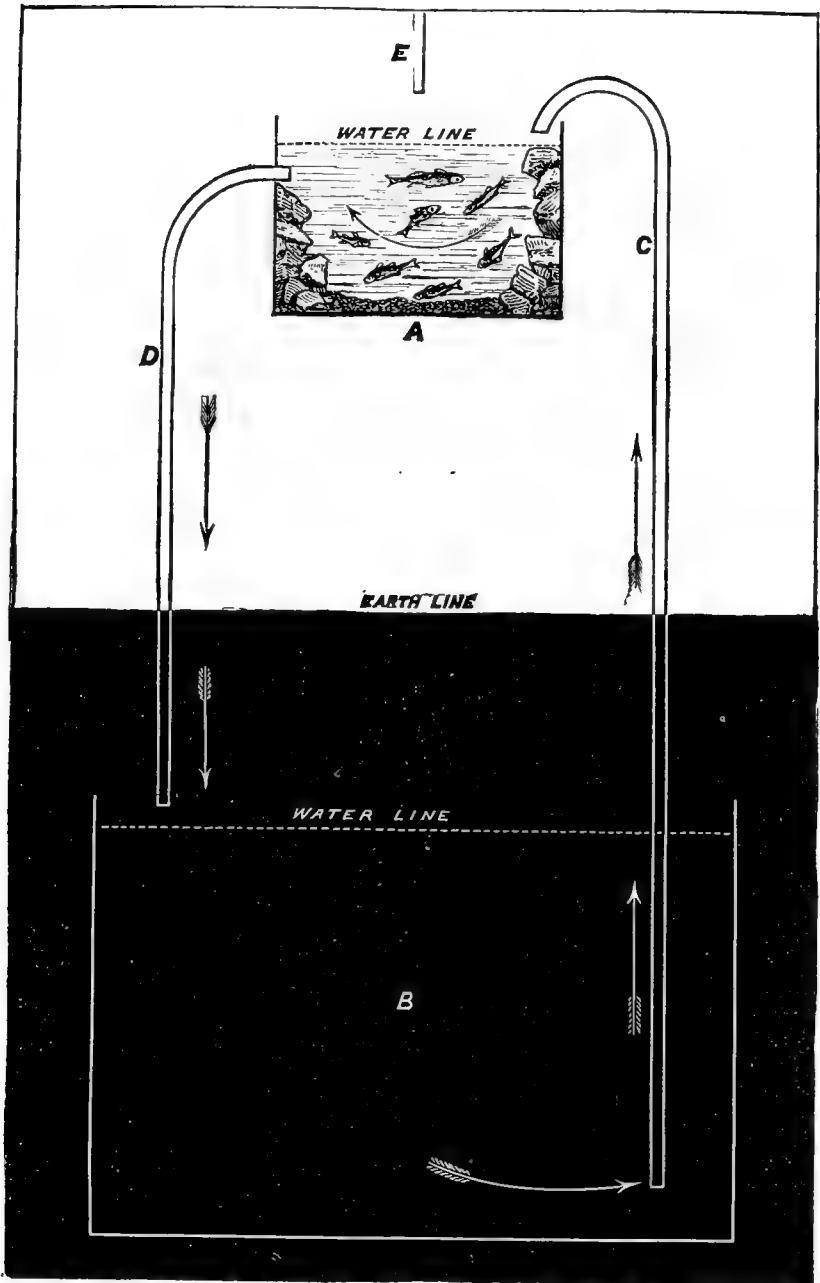
No. 4. A, 1; B, 3; result,  $63\cdot7^{\circ}$  F.



No. 5. A, 1; B, 4; result, 63° F.

No. 6. A, 1; B, 5; result, 62·5° F.

No. 7. A, 1; B, 20; result, 60·7° F.



So that, by increasing the quantity of water in B, that in A is made to approach very near to the temperature of B, whether the surrounding atmosphere tends to increase or decrease the temperature

of A. The water rises through c at an even temperature, exactly as it would if rising from a natural well, or spring, whether the spring be cold or hot, as in nature, and we can so increase the speed of the flow through c that the fluid is not allowed time to become unduly warm or cold in A. We know by many years of observation in the Observatory at Greenwich, that at a depth of six feet below the ground there, the mean daily range of the thermometer is less than one degree, while at the surface it is often twenty degrees. These facts, and the results to be deduced from them, are alike incontrovertible. We also know, from Bunsen's tables, how much atmospheric air in solution water will retain when not under pressure at varying temperatures, and it is also known that it is upon the presence of such air in solution that the value of the water for aquarium animals proper mainly depends. It is true that, as Mr. Kent states, the quantity of air injected into A under the conditions No. I may be increased by accelerating the flow, but that does not diminish or increase the temperature, and *that* is the primary thing. It is also true that some local circumstances may affect these results, such as a very equable and mild climate, or an aquarium building of extreme temperatures either way, or the use of tanks which are very shallow or very high, which increase or diminish the surface absorption of air, but, as giving general and broad results, the figures just quoted may be depended upon, and they were true in their results at the Manchester Aquarium, which Mr. Kent cites as a contradiction to my theory. This, under Mr. Kent's supervision, containing show-tanks aggregating 150,000 gallons, the amount in animal life was no greater than, if so great as, is contained in the Crystal Palace Aquarium of only 20,000 gallons in the show-tanks. Even in the reserve-tanks in the latter place we often keep almost as much living food alone, in the shape of prawns, shrimps, crabs, mussels and oysters, all of which tend to sully the water, and which themselves have to be fed, as were kept in all the Manchester Aquarium, which has no reserve-tanks. There is no truer test of the amount of healthy organic life in an aquarium, of the kind which admits of manual feeding, than is to be found in the quantity of food consumed. Mr. Kent told me that in the vast aquarium at Manchester, containing show-tanks collectively of 150,000 gallons, and a reservoir of 50,000 gallons,—total, 200,000 gallons,—the food amounted to no more than £40 or £50 a-year. But in the Crystal Palace

Aquarium, with only 20,000 gallons in the show-tanks, and 100,000 gallons in the reservoir,—total, 120,000 gallons,—the food amounts to £120 a-year. In the Manchester Aquarium, with animals of precisely the same kind as at the Crystal Palace, and with the water always absolutely clear and well oxygenated, the quantity of food consumed should be of the value of about £200 a-year, but as it comes to only about one-fourth or one-fifth of that sum, proof is thereby given that the animal life must be much less than in a much larger space, and that, therefore, there must be a waste of capital in erecting excessively large, because sparsely occupied, water-spaces above ground. I noticed particularly at Manchester that the large sea-anemones, as *Actinoloba Dianthus*, in the greater tanks, instead of standing up, like tall columns with overhanging tentacles, as at the Crystal Palace, where they are always fed individually by hand, one by one, were nearly all flat, contracted and closed, because insufficiently fed. Few things seem more surprising than that in the sparkingly clear Crystal Palace sea-water,—which is not changed or added to further than having two per cent. per annum of new sea-water introduced to compensate for unfortunate leakages, and one-half per cent. per annum of fresh water to supply for evaporation,—we have in five years given our animals over £600 worth of animal food (excluding vegetable food), and yet we very rarely remove uneaten food, or the excrementitious results of food. The cost of such food in Manchester and London is the same, and though it may be that Manchester, for unwise economy, may purchase very little of the same expensive food, as living shrimps and prawns, yet nothing is gained by such an omission, as aquarium animals, like human and all other animals, thrive best when the food is not only abundant, but varied.

In all Aquaria, the work to be done is the oxygenation of certain organic matters, so that the animals may be healthy and the water clear, and if sufficient means be not used to do this work, the water must be more or less turbid, or the amount of organic matter must be proportionately lessened. Now at Manchester this was the case, for the water, when I saw it, was not sparkingly bright, nor was the amount of organic matter to be oxygenated—*i. e.*, the animals and their food—adequately large in comparison to the size of the place. Once, I remember, on a very hot day in July, I telegraphed to Manchester that our Crystal Palace temperature was as follows:—

Maximum external air at Sydenham and Greenwich	-	92° F.
„ air in shade in Crystal Palace	- - -	84 „
„ air in shade in Crystal Palace Aquarium	-	77 „
„ in water in Crystal Palace Aquarium, every- where	- - - - -	61 „

and I asked for similar information about the Manchester Aquarium, but it was refused me. Indeed, our great success at the Palace depends very much on our temperature being nearly that of the actual English ocean in all seasons; and it is this, conjoined with complete and constant aëration by our machinery, that enables us to keep in a comparatively small space so many animals, and many of them of kinds which, when we once get them uninjured, are maintained nowhere else under the same inland conditions. Among these we kept some young herrings till they were eaten by a nocturnally prowling eel. And we now keep *Sepia* (one of the cuttles), and it feeds and grows vigorously, as it feeds and grows in no other aquarium.

Irrespectively of the consideration of temperature (which, however, cannot be readily left out), and if, indeed, it be necessary to argue that a given amount of any diffusible matter sullies a given large body of fluid less than a small body, we possess a good illustration of the effect which great masses of water exert when brought into contact with smaller masses, containing much decomposing organic matters, which the larger masses rapidly dilute by their bulk, and gradually resolve into their constituents, by referring to the improvements made of late years in the drainage system of London. Formerly the sewage matter resulting from a great mass of human beings and other animals was permitted to flow into the tidal river Thames, the bulk of which did not then allow it to become very seriously polluted. But as the metropolis rapidly grew larger, and as the river did not so increase, the pollution of the stream increased in the same proportion, until at last the decomposing organic matters it contained, upon being washed up and down as it ebbed and flowed, before it ran into the sea, became so intolerable from the poisonous gases they evolved—especially in warm weather, when the decomposition was more rapid—that it was resolved to make the sewage flow more directly into that infinitely larger receptacle, the sea, which even the enormous mass of London sewage has no power to permanently and seriously affect. This brings me to explain why I chose the formula No. 6—

five to one—for the great London Aquarium now preparing to be opened at Westminster, where the circumstances are quite different to those at Manchester, and where the aquarium is not, as at Westminster, placed in the very midst of a great city, with a soot-laden atmosphere. Moreover, in this latter aquarium, some of the tanks measure twenty feet wide from back to front, being more than in any other aquarium where the water is maintained in so clear a condition as to satisfy my fastidiousness. When this width is so great, the size of reservoirs must be relatively increased, because a very small addition of foreign matter in suspension or solution then increases the apparent turbidity. Moreover, the Westminster building itself is not exactly such a one as I should prefer for an aquarium, if I could have controlled it, with reference to all things, but as it has to be used for many other purposes I must make the best use of it that I can for my purpose. It is, in effect, a huge conservatory of glass and iron, supported on brick walls, and, in spite of much good ventilation, it will be very hot in summer. Yesterday, for example, was a cold and blowing March day (the 9th), with strong sunshine, and at noon the temperatures were thus:—

External air, maximum—true temperature	-	-	55° F.
„ minimum	„	-	35 „
Internal air in Westminster Aquarium building	-	-	61 „
Water in reservoir of Aquarium, at bottom	-	-	49 „
„ „ at top	-	-	50.5 „
Water in Crystal Palace Aquarium everywhere	-	-	*54 „

This water at Westminster was fresh water, used to test the soundness of the reservoir, and as it had been in for ten days, it had had time to assume its normal temperature, and it was ten feet deep vertically. No water was in the show-tanks, and no circulation was going on. This indicates, clearly, that a valuable equalising effect will be gained by the reservoir, which these figures show is not at all too large; in fact, I tried to get it made to hold a million gallons, instead of only about 600,000 gallons. Really such a reservoir cannot be too great for the general purposes of an

\* It will be seen that the Crystal Palace water is higher than that in the Westminster reservoir, because the show-tanks above are exposed to warmth, while at Westminster there are at present no show-tanks to raise the temperature of the reservoir. The minimum of the external air was for the previous twenty-four hours. The instruments used were made by Negretti and Zambra.

aquarium, the goodness of which a naturalist, if he be true to his cause, will only regard, and for such excellence and for the animals it contains, he will alone care. He will, if he be genuine and zealous, regard the creatures he has to keep, not as unfortunate prisoners for whom it is policy to do as little as possible for their comfort, but as friends and guests, for whom he cannot do too much. Therefore, the only limits to the dimensions of aquarium reservoirs are considerations of cost and space. But long experience points out that for all general purposes the proportion of formula No. 6 is an excellent one as a minimum, and to gain this, or better, a much larger proportion, as even ten or twenty to one, as being, in the end, an excellent investment of capital, a right-minded naturalist will do much, even to the extent of recommending the sacrificing of the features of building which are not constructurally necessary, but merely decorative. The slight enrichment of surfaces of necessarily constructive parts is all that a well-educated man will aim at. He cares only for the decoration of construction, and is content to leave the construction of decoration to the ignorant and vulgar.

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**Curious Hare.**—Yesterday, a little to the north of York, I saw a funny hare. Its body appeared to be white; but the fur of the head was the natural brown colour.—*J. H. Gurney, jun.; Darlington, March 25, 1876.*

**Are White Cats with Blue Eyes Deaf?**—Many persons are under the impression that white cats with blue eyes are deaf; it can by no means, however, be deemed to be so commonly the case as to be an evidence of much consequence in building a theory upon. A New Zealand correspondent sends us some curious facts bearing on the point. "At Taranaki, N.Z.," he says, "I saw a white cat with blue eyes which was not at all deaf, and a good many of its kittens were white and had light blue eyes. As many of these had perfect hearing as were afflicted with deafness. This cat had a grown-up kitten perfectly black, which had sometimes also white young ones with blue eyes; it showed, as did the old cat, a singular partiality for them. On one occasion it happened that the old white cat and her black daughter had litters at the same time; amongst them there was only one white kitten with blue eyes—the black cat's. The two fought fiercely for possession of the coveted beauty, and the old cat frequently took it away and placed it amongst her own. One morning the unfortunate object of quarrel was found divided, by the recommendation of some feline Solomon, and each cat quite contentedly in possession of half. Both of

these litters had some light tortoiseshell-coloured kittens among them, of which a moiety appeared to have their hearing imperfect."—'Nature.'

[I have so frequently heard it asserted that white cats with blue eyes were deaf, that I have taken it for granted that this was the case. I have known a single instance of a cat insensible to sound, but it had one *blue* and one *red* eye, the latter as in an albino.—*Edward Newman.*]

**Rare Birds and Otter near York.**—A tufted duck was shot near Malton on the 24th of February; a young female smew at Poppleton, near York, on the 28th; a female scaup and a merlin near Malton on the 29th; a great northern diver at Norton Coney on the 8th of March; a tufted duck near Malton on the 14th; a pintail duck at Pocklington on the 14th. An otter was killed near York some time in December last; and in November a roughlegged buzzard and a little stint were shot near here. Except the otter and roughlegged buzzard, these are all in the possession of Mr. Ripley, naturalist, York.—*J. E. Gripper; March 17, 1876.*

**Rare Birds near Malton.**—A scaup duck was shot at Ganton, East Riding, on the 18th of February; a green woodpecker at Gilling on the 26th, and one seen in Castle Howard Park on the 8th March. A tufted duck was shot on Gilling Castle Lake on the 8th of March; three others were seen at the same time. A pintail duck was shot at Stowood on the 14th of March.—*George Edson; Malton, Yorkshire.*

**Ornithological Notes from Dublin.**—April in Dublin has been an extraordinarily severe month; notwithstanding this, however, several of the summer migrants have already put in an appearance. Wheatears were seen in the outskirts of Dublin on the 27th of March. The chiffchaff was heard on the 1st of April; the willow wren was seen shortly after; and swallows were seen at Leixlip and Bray, &c., on the 11th. A corn crane was observed near Dublin about a fortnight ago; and one of our leading naturalists has been pursuing that rare bird, a black redstart, for several days. The snow buntings, which were very numerous this year, have long since departed.—*Charles W. Henson; Dublin, April 14, 1876.*

**Greenland Falcon in North Wales.**—On the 20th of March last I had the satisfaction of examining, in the flesh, a splendid specimen of the adult male Greenland falcon, at Henry Shaw's shop in Shrewsbury. The bird was the property of Mr. John F. Jesse, of Caefron, Ruthin, North Wales, and had been given to him by Mr. John Roberts, of Rhiwlas, who picked it up a few days before, quite dead, on the Llanbedr Mountain. The plumage was magnificent, scarcely a feather being out of place, and although the crop and stomach were empty the bird was heavy and in good condition. Its death appeared to have been caused by coming violently in contact with a telegraph-wire or some other obstacle, as the skin was cut in two places on

the neck, and the heart a good deal congested with blood. The centre claw of the left foot was gone, but the injury was not recent, as the wound had perfectly healed over. In appearance and markings this falcon strongly resembled the plate of the Greenland "light race" in Mr. Gould's work. There were a few spots on the back of the bird, and the quill-feathers were tipped with black, though not very dark; the tail and the remainder of the plumage was of the purest white.—*John Rocke; Clungunford House, Shropshire, April 10, 1876.*

**Iceland Falcon in Caithness.**—On the 1st instant a very fine specimen of the jer-falcon (*Falco islandicus*) was trapped by William Lawson, game-keeper, Brubster, Thurso. We had experienced very rough weather some short time beforehand, which had no doubt been the cause of this rare bird's visit. It was brought to me to be preserved, and had seemingly been living well lately, as it was in beautiful plumage, and weighed three pounds.—*Nichol M'Nichol; Westfield, Thurso, Caithness. (From the 'Field,' April 8.)*

**Common Buzzard at Scarborough.**—On the 20th of March a common buzzard was got near Scarborough; it was trapped upon a woodcock. I saw both hawk and lure, in the flesh, at the house of Mr. Roberts.—*J. H. Gurney, jun.*

**Common Buzzard in East Yorkshire.**—A female specimen of the common buzzard was taken in a trap during the last week in February, at Holme Wood, in this Riding. Internally it was a mass of fat. The stomach contained nothing but the remains of beetles.—*F. Boyes; Beverley.*

**Roughlegged Buzzard.**—Mr. J. H. Gurney, jun., says (Zool. S. S. 4829), "Captain Hadfield doubts if this buzzard would prey on any ducks except lame ones." I quoted Wilson (which is shown by inverted commas), with whom I agreed. As to the remark that "Yarrell seems in error in saying that the roughlegged buzzard shows a preference for marshy districts," he probably, knowing little or nothing of the habits of the species, would naturally refer to Wilson for information, who says that it "spends the chief part of the winter among our low swamps and meadows, watching for mice, frogs, lame ducks, and other inglorious game." Having had favourable opportunities for observing the roughlegged buzzard, it being a common species in Canada, I think Wilson's description of its habits cannot well be improved on, though I may entertain a doubt as to its power of securing even a "lame duck." With regard to its "swooping" on a full-grown wild duck, or even on a full-grown rabbit, I must beg to question, if not doubt it, till duly authenticated. That one was "seen hovering over a pond on which there were some tame ducks"—and possibly ducklings, to say nothing of frogs and water voles—I can readily believe; also that fur of the rabbit was found in the stomach of one, but the question is to what sized rabbit it belonged. However, I cannot but think that an ornithologist like Wilson must have been better acquainted with the habits of the rough-



legged buzzard, so common a bird in America, than a casual observer can be here. It greatly resembles the kestrel in its manner of hawking for mice, though soaring at a greater elevation. Its diminutive bill, small feet and weak claws unfit it for preying like a falcon. Mr. Gurney seems to think that Yarrell erred in saying that the roughlegged buzzard prefers marshy districts—how then is it to find the ducks on which it is said to prey?—*Henry Hadfield; Ventnor, Isle of Wight, March 21, 1876.*

PS.—A roughlegged buzzard I shot and examined in Canada had mice, and mice only, in the stomach, though there were ducks enough—less formidable, too, than the mallard—in the neighbouring marshes and islets. That frogs and lizards are also preyed on we know, on the authority of Wilson.—*H. H.; April 5, 1875.*

**Roughlegged Buzzard.**—The roughlegged buzzards have not all cleared out yet from Scotland. So I learn on enquiry among the naturalists at Edinburgh. A brace were killed, but in different places, a week or two ago. It is curious how long the relics of a migratory band of birds will sometimes remain in the country, spite of the efforts to shoot them.—*J. H. Gurney, jun.; Edinburgh.*

**Plumage of the Roughlegged Buzzard.**—I have not the fourth edition of Yarrell at hand to refer to, but I remember an error of transcription in the Editor's description of the plumages of the roughlegged buzzard, which it is rather important that Mr. Sclater should know. The words "transverse" and "longitudinal" are transposed, making it appear that the dark marks are transverse in the young bird. Of course it is purely a *lapsus calami*, and the Editor intended to say quite the opposite. I pointed it out to him soon after the part came out, and he was much surprised at the slip: I see it is corrected in the "Corrigenda." Now I recommend Mr. Sclater to read the description over again, substituting "longitudinal" for "transverse," and I am much mistaken if he does not then find that his bird is a young one. The tibial feathers being streaked make me think so. Besides forty-nine out of fifty roughlegged buzzards killed in England are immature. I shall be glad to hear what he makes of it.—*Id.*

**Occurrence of the Snowy Owl on Dartmoor.**—On Monday, March 13th, during very severe weather, a beautiful snowy owl was shot on Ditsworthy Rabbit Warren, Dartmoor, strange to say by the warrener's grandson, a little boy only eight years of age (though, I understand, a capital shot), who, being at home from school for a birthday holiday, and amusing himself with a gun, happened to see the owl pounce on a rabbit, which it struck dead in an instant. He then crept cautiously up behind a burrow, in order to get as near as he could, when the bird, either hearing or seeing him, immediately rose, leaving its prey behind, and flying directly over the boy's head, was brought down by a shot in the wing. On my asking if the lad had not great difficulty in securing his prize, I was told that he could do

nothing with it until his grandfather (Mr. Ware), who saw the bird fall, came up and put his foot on it. A little terrier had made a bold attempt, but was sent "screeching" away. I unfortunately did not see, or even hear, of the capture of the bird until after it was stuffed, and was consequently unable to make a proper examination or take correct measurements of the specimen: however, from its comparatively small size and the general whiteness of its plumage, I feel certain of its being a male, and an old one too. Its weight was said to be just over four pounds, and I found the length of the wing, from the point of the carpal joint to the end of the longest quill-feathers, exactly fifteen inches. The upper plumage is perfectly white, with the exception of some small dark brown bars and spots on the scapulars, tertials, wings, and head; all the tail-feathers white, with only three minute spots on the two centre ones, a couple on one and one on the other. There are also seven or eight faint lunate bars on either side of the breast, but beyond that all the under parts, from the chin to the tail-coverts, are wholly white. Bill and claws shining black, except at their bases. The bird was seen only a short time before it was killed, and was then being chased by some hawks, which are very plentiful in the neighbourhood of the warren. I am very sorry the poor bird was killed, for it would have been a grand sight to have seen it flying about in a wild state. The person who skinned the owl appeared much struck with the large bony rings of its eyes.—*J. Gatcombe; 8, Lower Durnford Street, Stonehouse, Plymouth, April 4, 1876.*

**Barn Owl and Shrew.**—The following extract from 'Bell's British Quadrupeds,' 2nd edition, p. 144, may prove interesting to Mr. Mitford:—"It has often been stated that owls, like cats, will kill but not eat the shrew; and this opinion has received some plausible support from the circumstance that shrews are not uncommonly found dead, with the loins pinched, as if by the beak of some rapacious bird. The following fact, however, shows that this notion is altogether erroneous. Mr. Turner, of the Botanic Garden at Bury St. Edmunds, on examining twenty pellets or casts of the barn owl, taken promiscuously from a mass of them, covering, to the depth of several inches, the floor of an ancient retreat of a pair of these birds, found amongst them the skeletons of no less than seven shrews. We have ourselves seen several bushels of refuse taken from the inside of an old tree, which had been for many years the abode of the barn owl, and, amongst the numerous small skulls it contained, the most abundant appeared to be that of the present species." Many of the Suffolk people have an idea that the tail of a rat or mouse is poisonous, because neither cat nor ferret, however hungry they may be, will ever be induced to make a meal on it. This reminds me of an Eton boy, who, being troubled with mice in his room, invested in a "catch-'em-alive, oh," shaped like a well with sloping sides. This he placed under his bureau, where it remained

forgotten for a long time, but when at length it was revisited three or four tails appeared the only result. No doubt the surviving mouse, having devoured its companions, escaped by a desperate leap! The barn owl is not exempt from occasionally indulging itself with game, especially when it has to supply its young ones. I once noticed a bird of this species, in broad daylight, as it was skimming over a field, suddenly drop down upon a brood of young partridges, and carry off one in its talons. The poor mother partridge most bravely endeavoured, though unsuccessfully, to give battle to the aggressor, whilst the father bird beat a retreat with his remaining young ones.—*Arthur J. Clark-Kennedy; Little Glemham, April 3, 1876.*

**The Blackbreasted Dipper.**—As I have received the Scandinavian dipper (*Cinclus melanogaster*) from Denmark, and also seen the Norfolk specimens, I have no doubt that Mr. Boyes is perfectly correct in assigning his bird to that race. A true species it can hardly be said to be, for examples occur with just a tinge of chesnut; such a one I have had from Spain. My Yorkshire example, to which Mr. Boyes alludes, and which was killed near Bridlington, and purchased by me of the late Mr. Jones, has a faint tinge. That all East Yorkshire dippers are *Cinclus melanogaster* is not probable. I feel sure I have seen *C. aquaticus*, which had been killed in that county, near the coast. Mr. Boyes asks about the plumage of the young dipper in autumn: writing from recollection, for I have not my collection to refer to, I should say the breast and under parts were all spotted. In that young stage it is the "Penrith ouzel" of our old writers.—*J. H. Gurney, jun.; Edinburgh Hotel, Edinburgh, April 10, 1876.*

**White Blackbird.**—I got a very fine pure white variety of the blackbird this season; it was shot at Dromore, County Down. It has dark brown eyes, with orange eyelids and yellow beak, which prove it to be a mere variety, and not an albino. I have been told that there is one in a garden near Belfast, which has lived there for several years; it is also all pure white.—*Thomas Darragh; Belfast Museum.*

**Habits of the Blackbird.**—In North Berwick it seems to be the habit of blackbirds to perch upon housetops. I heard one singing beautifully in the evening—it was the 6th of April—from a factory chimney some eighty feet high.—*J. H. Gurney, jun.; April 11, 1876.*

**Blackbird with Pied Head.**—Last November I shot a blackbird which had two dirty patches of white on each side of the head, close to its eyes. I should have preserved it, but it was in shocking condition, its tail, and many feathers from various parts of its body, being absent.—*C. Matthew Prior; Avenue, Bedford.*

**Goldencrested Wren.**—I am told by a very good observer of birds that last October one of those strange influxes of goldencrested wrens took place at Scarborough. Many were flitting about on the houses, and even in the streets boys might be seen striking at them with their caps. There can be

little doubt that these birds had crossed the German Ocean. Small wonder if such mites—tired by their long journey, and alighting on the first land they come to—become an easy prey to enemies of every kind.—*J. H. Gurney, jun.; Darlington, March 26, 1876.*

**Reproduction in a Bird's Beak.**—Mr. Rogers, of Plymouth, has now a pair of beautiful Cornish choughs, which he tells me have been in confinement for sixteen or seventeen years. A long time ago the upper mandible of the bill of one of these birds was torn or broken almost completely off, near the base, by being jammed between the door, or hitched in the wires, of its cage. However, as it was hanging by a slender process, Mr. Rogers carefully bound or spliced it together with waxed thread, in the hope that it might in time unite; but the moment the operation was completed up jumped the bird on its perch, and, giving its head a tremendous shake, off came the mandible, at once falling to the bottom of the cage. After this Mr. Rogers says, the poor thing was very "queer" for a few days, and of course could not eat. Therefore, as something was obliged to be done to prevent the poor creature from starving, he placed hemp-seed in the hollow of his hand, keeping his fingers a little spread, so that the bird, by thrusting its long lower mandible between them, and thus bringing the stump of the upper one on a level with the palm, should be enabled to pick up the seeds. This manœuvre seemed to be at once understood by the knowing, hungry bird, and the plan answered admirably: ultimately, however, Mr. Rogers adopted another, by letting the hemp-seed float on the surface of water, in a deep pan, or cup, with equal success. After this, the bill began to grow tolerably long, though rather rough, slender, and a little crosswise, so that, in trying to pick up anything from the ground or floor of its cage, the bird was obliged to hold its head on one side, and, strange to say, the tip of the uninjured lower mandible grew long and sharp, so as to necessitate its being often cut. After a while the somewhat slender and ill-formed upper bill broke or fell off again, but since then has been reproduced, and is now, and has been for many years, as perfect as ever it was before the first accident happened, with the exception of its being slightly awry at the tip.—*J. Gatcombe.*

*Errata.*—In my note on the Cornish chough (S. S. 4823) for "has been increasing within the last ten years," read "gradually increasing within the last few years."—*J. G.*

**Temerity of the Robin.**—A friend writes to me as follows:—"A pair of robins have built their nest in the wall of a large school near Banbury, containing nearly 200 boys. The female has laid three eggs. March 29th."—*C. Matthew Prior.*

**Manner of Feeding of the Starling.**—Captain Hadfield says, "If it were the starling's habit to force its bill down to the 'base,' after the manner of the rook, we should find the feathers worn, but they are not." Does this imply that because the rooks dig the feathers are worn off?

Bewick says "that it is an original peculiarity," and Waterton also says "That he kept two young rooks in a cage, and the feathers in course of time dropped out, although they had no opportunity of thrusting their bills in earth." I am of the opinion that the starling thrusts its beak shut into the ground, for this reason: I had a tame starling, which, if you put your hand closed into the cage, would thrust its beak between the fingers, and endeavour to force them apart with greater strength than one would imagine.—*C. Matthew Prior.*

**Starlings Pecking with Beak Open.**—My letter to you on the subject of starlings pecking the ground with their beaks open has led to quite a discussion, and your contributors have produced abundant evidence that it is a common and well-known fact. Their mode of doing it is not yet settled. That they sometimes thrust the beak in closed, and afterwards open it, is very likely, but I am sure, from observation, that they very often—I think I may say generally—thrust it into the grass open, and this is what I wished to express in my first letter to you.—*J. H. Gurney, jun.*

**Mode of Starling's Feeding.**—A gentleman friend of mine has now in his possession a starling, which he reared from the nest, and, should it live until June next, it will then be twelve years of age, during the whole of which time my friend has never seen it peck with its beak open, but the opening of the beak during feeding is a matter of daily occurrence; for ten years past the same bird has been under my frequent observation, and I can fully corroborate my friend's statement, and, on account of there being illness in the house for five or six weeks past, I have been a daily visitor to the house, and have taken the opportunity of watching the starling whilst feeding, and have observed that when first the food is placed in the cage (the food consisting chiefly of soaked bread, with, occasionally, chopped meat or hard boiled egg) all the choice bits are carefully taken off the surface, then the beak is thrust, while closed, to the bottom of the cup, and widely opened by pressing back the lower mandible, and the choice bits below the surface are rapidly selected, after which the bread is eaten. The bird is also very fond of cold boiled potato, which is given to it whole, but in eating it there is no pecking at it with open beak, or opening of the beak more than in ordinary feeding; again, if the lady of the house will take any favourite morsel, and place it between her lips, so as to hide it from sight, the beak will be inserted, whilst closed, between the lips, then opened, and the food taken from the lady's mouth, but there will be no pecking with open beak. From the observations I have been able to make, I am decidedly of opinion that starlings do not peck with their beaks open, but that they make use of the action of opening their beaks to thrust aside the grass or other herbage amongst which they are feeding, in order to see grubs or any other food that may be found there on the surface. I do not fancy they ever thrust their beaks into the solid earth. My friend suggests the action may be of use,

whilst, as we often see starlings, searching for insects, &c., on the backs of sheep, to enable them to separate the wool, and so obtain their object. As I am writing I may as well state that the above-named starling is an excellent talker, making use of the following and other phrases, "Is it nice," "Is it good," "He wants his dinner," "How are you," &c., and at times he would seem to know what he is talking about, as the following instance will show:—The lady of the house was sitting at work on a summer's afternoon, with the window open, the bird being by her side: on looking out of the window she saw a donkey endeavouring to get over the hedge into the garden; she sprang up without saying a word and hastily ran into the garden; on passing the window she saw the starling in the greatest excitement, flying about the cage, and saying, as fast as he could repeat the phrase, "What is it," "What is it." When she returned to the parlour, she sat down again to her work; the bird quickly became less excited, yet sat quietly on the perch, but constantly repeating "What is it." The lady, without the least idea of being understood by the bird, said "The donkey was trying to get into the garden." "Was it," replied the starling, and then became perfectly quiet, seemingly quite satisfied in the matter.—*Stephen Clogg; East Looe, Cornwall, April 13, 1876.*

**A Note on Rooks.**—About five years ago a few pairs of rooks took possession of some high trees near the Paper Mills here, and the number of nests went on increasing till last year, 1875, when the place was entirely deserted, and not a single family remained. This year they have appeared again, and the whole of the twenty or thirty nests seem to be occupied. Might one suppose that the first colony, which, though rearing its young successfully for several seasons, yet conceived some distaste to the place, and that, after the one year's interval, an entirely new set took possession, or is it only another instance of the eccentric habits of these birds? When the weather is dry, and food bad to extract from the hard ground, they show a considerable amount of cunning in snapping up the eggs laid by some wild ducks, a few of which breed yearly on a reservoir near the same place, and it has often been impossible to get a sitting without bringing them to the hens inside. A man has to be regularly on the watch at this time, and he and the rooks have many a race for the newly-laid eggs. The black rascals sit three or four together on some of the trees on the banks, looking as if they had no concern whatever in mundane affairs; but let a duck swim out to take its morning's bath, and flop! down they go right to the place it has come from, and its egg is gone in five minutes; lucky is the man if he arrive in time to secure it himself, for they are almost wholly indifferent to any amount of shouting and hallooing off. Two swallows and a house martin just seen this spring, April 11th, rather earlier than usual.—*F. S. Mitchell; Clitheroe, Lancashire, April 20, 1876.*

**Note on Rooks, &c.**—As a proof that even the best authorities are

liable to error, I beg to cite the following instance :—Gilbert White; in his 'Natural History of Selborne,' says, "Rooks do not copulate in trees nor on their nests, but on the open ground." This is not correct, for on March 27th I distinctly saw, in two different places, rooks copulating in trees. I do not say this is the rule, by any means, but at least it is an exception. First heard the wryneck on March 23rd. The ring dove has again taken to those graceful undulating motions which they always assume in the breeding season.—*C. Matthew Prior.*

**Arrival of Swallows and Sand Martins.**—Yesterday, on passing a large fish pond, where I have for many years past seen the earliest arrivals of swallows, at 2 P.M. I could not see one, but on my return, about 4 P.M., there were fifty or more swallows, with about half a dozen sand martins, busily hawking about over the surface of the pond, which is several acres in extent. They are the first I have seen for the year, and the only arrival of spring migrants I have yet seen.—*Stephen Clogg; April 13, 1876.*

**Great Bustard in Orkney.**—You may be interested to learn that a great bustard was shot here on March 29. On that date Mr. W. Stephenson, of New Holland, Stronsay, seeing a large number of gulls circling over some object in one of his fields, and thinking it might be one of his sheep dead, went towards them, and discovered the object of their interest to be a large and strange bird. It seemed so tame that he attempted to drive it to the farmstead, but it at length took wing, and, after flying for about a mile, returned over the same field, when Mr. Stephenson killed it with an almost vertical shot, at what he considered to be about one hundred yards from the ground. The bird coincided in every respect with the description given by Yarrell of the great bustard, and the ill-developed plumes on the chin showed it to be a female bird of mature age. The stomach was perfectly packed with partially digested grass and green stuff, and the ovary contained several eggs in a very early stage of formation. The body was muscular and in good condition, but almost entirely destitute of fat, the total weight being nine pounds and three-quarters. The stretch of the wings was four feet ten inches and a half; length from tip of beak to tip of tail, two feet eleven inches; circumference over folded wings, one foot nine inches and a half; and height, with neck slightly curved backwards, two feet six inches.—*John Bruce; Kirkwall, Orkney. (From the 'Field,' April 8, 1876.)*

**Great Bustard in Orkney.**—With reference to the great bustard recently obtained in Orkney, I have much pleasure in informing you that it has been stuffed, and is now in the possession of Mr. Stephenson, of Stronsay Vale, on whose farm and by whom it was shot. Previous to being observed in Stronsay it had been seen on an uninhabited skerry by several people, and supposed to be an eagle. Tolerably strong easterly winds prevailed for three days before its discovery, which might have assisted it in its supposed journey from the Continent. I may add that the body, when skinned, had

a strong and decidedly unpleasant aromatic odour. When washed with fresh water this greatly disappeared, and, after being stewed, it gave myself and several other gentlemen who tasted it the idea of coarse-grained meat, with the flavour of jugged hare. There is no record, so far as I can discover, of the great bustard having visited these islands before.—*John Bruce. (From the 'Field,' April 15.)*

**White Peewit.**—On the 10th of March a singular variety of the peewit was taken at Strettern, Cambridgeshire. The body and wings are white, with a feather here and there of the natural colour; the tail as in ordinary specimens of this bird. It has been set up by Mr. F. Doggett, naturalist, of Cambridge, where I had the pleasure of inspecting it.—*F. Wheeler; Chesterton, Cambridgeshire. (From the 'Field.')*

**The Demoiselle Crane.**—A bird of this species, the *Grus Virgo* of Linneus, was recently picked up dead on the banks of the River Cale, in this neighbourhood.—*W. Herridge; Wincanton. (From 'Science Gossip' of March 1st.)*

**Notes on a South-American Heron.**—Mr. Hudson communicates the following notes on the little heron (*Ardetta involucris*) to the Zoological Society of London:—"It was a small isolated bed of rushes I had seen him in. The mud below and for some distance around was quite bare and hard, so that it would have been impossible for the bird to escape without being perceived; and yet, dead or alive, he was not to be found. After vainly searching and re-searching through the rushes for a quarter of an hour, I gave over the quest in great disgust and bewilderment, and, after reloading, was just turning to go, when behold! there stood my heron on a reed no more than eight inches from, and on a level with, my knees. He was perched, the body erect, and the point of the tail touching the reed grasped by his feet; the long tapering neck was held stiff, straight, and vertically, and the head and beak, instead of being carried obliquely, were also pointing up. There was not, from his feet to the tip of the beak, a perceptible curve or inequality, but the whole was the figure (the exact counterpart) of a straight, tapering rush: the loose plumage arranged to fill inequalities, the wings pressed into the hollow sides, made it impossible to see where the body ended and the neck began, or to distinguish head from neck or beak from head. This was, of course, a front view; and the entire under surface of the bird was thus displayed, all of a uniform dull yellow, like that of a faded rush. I regarded the bird wonderingly for some time; but not the least motion did it make. I thought it was wounded or paralysed with fear, and, placing my hand on the point of its beak, forced the head down till it touched the back; when I withdrew my hand up flew the head, like a steel spring, to its first position. I repeated the experiment many times with the same result, the very eyes of the bird appearing all the time rigid and unwinking, like those of a creature in a fit. What wonder that it is so



difficult, almost impossible, to discover the bird in such an attitude! But how happened it that while repeatedly walking round the bird through the rushes I had not caught sight of the striped back and the broad dark-coloured sides? I asked myself this question, and stepped round to get a side view, when, *mirabile dictu*, I could still see nothing but the rush-like front of the bird! His motions on the perch as he turned slowly or quickly round, still keeping the edge of the blade-like body before me, corresponded so exactly with my own that I almost doubted that I had moved at all. No sooner had I seen the finishing stroke of this marvellous instinct of self-preservation (this last act making the whole entire) than such a degree of delight and admiration possessed me as I have never before experienced during my researches, much as I have conversed with wild animals in the wilderness, and many and perfect as are the instances of adaptation I have witnessed. I could not finish admiring, and thought that never had anything so beautiful fallen in my way before, for even the sublime cloud-seeking instinct of the white egret and the typical herons seemed less admirable than this; and for some time I continued experimenting, pressing down the bird's head, and trying to bend him by main force into some other position; but the strange rigidity remained unrelaxed, the fixed attitude unchanged. I also found as I walked round him that, as soon as I got to the opposite side and he could no longer twist himself on his perch, he whirled his body with great rapidity the other way, instantly presenting the same front as before. Finally, I plucked him forcibly from the rush, and perched him on my hand, upon which he flew away; but he flew only fifty or sixty yards off, and dropped into the dry grass. Here he again put in practice the same instinct so ably that I groped about for ten or twelve minutes before refinding him, and was astonished that a creature, to all appearance so weak and frail, should have strength and endurance sufficient to keep its body rigid and in one attitude for so long a time."—*Proceedings of the Zoological Society.*

**American Bittern in Dumfriesshire.**—A very good example of the American bittern was shot at a small inland loch in Dumfriesshire on the 25th of March, 1873, which I believe has not yet been noted in the 'Zoologist.' It was exhibited by Dr. J. A. Smith to the Royal Physical Society of Edinburgh on the 25th of February, 1874, and has since, I am happy to say, found a place in my collection. Mr. Gray tells me that in the West of Scotland this species has occurred more frequently than our common bittern.—*J. H. Gurney, jun.; The Edinburgh Hotel, Edinburgh.*

**The Labrador Duck.**—The Labrador duck, or pied duck, is a somewhat aberrant eider. Its habitat is, or was, North America—for it is believed now to be on the verge of extinction. The last killed, according to the writers of the article "Birds" in the new edition of the 'Encyclopædia Britannica' (part xii.), was in 1852. I saw three specimens last week in

the Brown-street Museum at Liverpool—an adult male, a young male, and a female. The adult male was black upon the breast, belly, crown and back, and white on the rest of the body: no blue, or green, or other colours, so far as I could see. The female was a good deal like a female velvet scoter, though rather lighter. It was an interesting series. In the article to which I have referred it is stated that no estimate has yet been made of the number of specimens existing in museums. I cannot here refrain from drawing attention to this admirable essay, which I much fear may remain unknown to “the many.” The part xii. is obtainable separately, and the price is only seven shillings and sixpence. The bird article takes up nearly half of it, and I am quite certain that few could read it without learning many facts which they did not know before. The only danger is that, being buried in a great ‘Cyclopædia,’ it may not get the circulation it deserves to have, for it is natural enough that people should not order an article which they have never seen, and which, in all probability, may be written by some one having no pretensions to a knowledge of practical Ornithology, but when I say that in this case it bears the initials “W. K. P.” and “A. N.,” I give the best guarantee for its accuracy, its completeness, and its minuteness, and all who read it will join with me in hoping that Prof. Baynes, the Editor, will secure more from the same authors.—*J. H. Gurney, jun. ; Northrepps Hall, Norwich.*

**Edible Qualities of the Shoveller Duck.**—In my opinion the shoveller is the very best of all the edible ducks. I have had many opportunities of testing them, as we always get them in the winter. This winter they were tolerably plentiful, as was also the shieldrake.—*Thomas Darragh.*

**Female Smew near Curry Rivel.**—At the shop of Mr. Greday, of Taunton, last week, I noticed a female specimen of the smew, which was shot a few weeks ago near Curry Rivel, not far from the place where Mr. Petherick shot the male on the 26th of January.—*Frederic Stansell ; Alma Street, Taunton.*

**Lesser Whitefronted Goose.**—In the report of my lecture on the birds of Egypt (S. S. 4892), the following words occur in reference to the lesser whitefronted goose (*Anser minutus*), which I will thank readers to draw a pen through:—“this bird having hitherto been regarded solely as a northern species.” I am obliged to Professor Newton for pointing out to me privately that no such thing is the case. Indeed I knew that Major Irby got it in Oudh, which ought to have guarded me from saying it was a northern species; and Prof. Newton tells me besides that it is sometimes shot in Greece. All naturalists agree that its occurrence for the first time in Africa is very interesting.—*J. H. Gurney, jun. ; The Edinburgh Hotel, Edinburgh.*

**Great Northern Diver off Erith.**—A great northern diver was shot off Erith by one of the men engaged in Easton Foundry on the 12th of February, 1876.—*A. H. Smee ; April 13, 1876.*

**Fulmar Petrel of Martin.**—It appears that the picture of the fulmar in Martin's 'Voyage to St. Kilda' (1698) was drawn by Mr. James Monroe, *cf.*, Edwards' Nat. Hist., 289. I cannot say it is very accurate. The tail is represented as forked instead of slightly convex, but Martin's account of its habits is very interesting. He mentions one thing which I dare say those who have had fulmars to skin have noticed, *viz.*, the absence of blood from the body (*l. c.*, p. 56).—*J. H. Gurney, jun.*

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**Enormous Mackerel.**—I have just measured a mackerel. It was, over all, one foot six inches and a half; eye to fork, one foot three inches and a half; greatest girth, nine inches and three-eighths; weight, two pounds eight ounces. This is the largest I have yet seen.—*Thomas Cornish; Penzance, April 13, 1876.*

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**Scyllarus Arctus in Mount's Bay.**—I have again received *Scyllarus Arctus*, taken by a trawler in Mount's Bay. It was alive when taken out of the net, but dead when brought to me. This crustacean is getting so comparatively common in our western seas that it ought to have an English name given to it.—*Thomas Cornish; April 11, 1876.*

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## Proceedings of Scientific Societies.

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### ZOOLOGICAL SOCIETY OF LONDON.

*April 4, 1876.*—Prof. NEWTON, F.R.S., Vice-President, in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of March, 1876, and called particular attention to the following acquisitions:—A male brown monkey (*Macacus brunneus*, Anderson), transmitted home to us from Siam, as a present, by Mr. T. G. Fermor Hesketh; two caracaras (*Polyborus tharus*), in a very remarkable plumage, presented by Lord Lilford, March 2nd, and said to have been obtained in Patagonia; lead-coloured falcon (*Hypotriorchis concolor*), presented March 3rd, by Mr. A. F. Allman, having been captured on board a vessel on a passage down the Mozambique Channel; and three sirens (*Siren lacertina*, Linn.), from South Carolina, presented by Mr. G. E. Maingault, curator of the Museum of Natural History, Charleston, March 29.

Mr. H. E. Dresser exhibited and made remarks on a specimen of a hybrid between the black grouse and hazel grouse, belonging to Mr. J. Flower, and supposed to have been obtained in Norway. It had been purchased in the flesh in the London market.

Prof. Newton exhibited and remarked upon a copy of a Dutch translation of Pliny, containing a figure of the dodo (*Didus ineptus*) and belonging to the Rev. Richard Hooper, which seemed to be an earlier edition of the same work which was formerly in the possession of the late Mr. Broderip, and was described by him in the Society's 'Transactions' (vol. iv., p. 183).

Mr. R. Bowdler Sharpe exhibited a specimen of the true Swedish Surnia ulula, obtained many years ago at Amesbury, in Wiltshire, being the first recorded British-killed example of this species.

Mr. A. H. Garrod read a paper in which he gave a description of the organs and some of the most important muscles of the darter (*Plotus anhinga*), from specimens which were recently living in the Society's collection.

Mr. Edward R. Alston read a paper on the genus *Dasyprocta*, and gave a description of a new species, from Central America, for which the name *Dasyprocta isthmica* was proposed. The geographical range and synonymy of the other *Agoutis* were reviewed; *D. punctata* of Central America was regarded as distinct from *D. Azaræ* of S. Brazil, and *D. variegata* was shown to extend into New Grenada. In all ten species of *Agouti* were recognised as distinct.

A paper by Mr. P. L. Sclater and Mr. O. Salvin was read, in which they gave descriptions of fifteen new species of birds from Bolivia. Amongst these was a singular new form belonging to the *Tanagridæ*, proposed to be called *Malacothraupis dentata*. A second paper by the same authors contained a revised list of the Neotropical *Anatidæ*.—*P. L. Sclater*.

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**Death of Mr. John Joseph Briggs.**—The readers of the 'Zoologist' will read with regret the announcement of the death of Mr. John Joseph Briggs, of King's Newton, Derbyshire, for many years a zealous correspondent in matters relating chiefly to Ornithology. Mr. Briggs was one of those practical out-door observers, who made notes by the wayside rather for his own information and amusement than for the benefit of others. And, although he never published any separate volume on his favourite branch of Zoology, he contributed numerous notes on the subject to the pages of the 'Zoologist' and to the 'Field,' and was always ready to recount his experience with a view to elicit the truth as often as occasion seemed to require it. The results of his experience, too, were worth learning, extending, as his observations did, over many years, and his pleasantly written letters will be missed by not a few who used to read and respect his opinions.—*Edward Newman*.

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*A First Peep at the Bird-breeders on old Farne.*

By H. ECROYD SMITH, Esq.

THE northern part of old Northumbria's coast probably offers greater facilities, combined with comparative security, for the breeding of our numerous sea-fowl than any other reach of our British shores, unless we except that of Cornwall and the Scilly Isles. A host of rocky islands and islets constitute here three main groups—the Farne to S., the Staple to N.E., and lastly Holy Island, with its isolated islets. The whole archipelago—which belongs to the sea, if not still to the county, of Durham—extends parallel with the main-beach, N.E. and S.W., to a length of about twelve miles, and extends seaward in a varying breadth of from four to five miles. I preface with these particulars as several recent maps delineate the groups very incorrectly.

Having a vivid remembrance of glowing accounts of the oological and ornithological treasures of Farne,—to say nothing of its having been the latest British resort of that fine marine bird, the great auk,—it was with exultant feelings that I found myself, on the morning of the 2nd of last June, upon the village-beach of Bamborough, and beneath its commanding old Castle, about to embark upon a long-desiderated visit to a few of the nearer islands. Disappointed of a companion, who had in fact originated the trip, I was forced throughout to depend upon individual resources alone in warding off suspicion of plundering; the agents of the property, in consequence of wholesale plundering from the main in recent seasons, having issued very stringent and foolishly indiscriminating orders. It was a fine invigorating morning,—

“The sky was bright, the breeze was fair,  
And the main-sail flowing loose and free,”

as our craft sped steadily across the little channel, separating the castle-crag from the most landward of the Farne group. Upon a near approach to its white cliffs, glaring in the sun and utterly devoid of vegetation, the inhabitants, in form of cormorants, became distinct, standing like a lot of rustic sentinels, all agape with wonder and curiosity at their unexpected visitors. It was not till the boat touched the rocks, and the smell of their nests had assumed an unmistakable character, that any of the creatures would trouble to budge, and thus expose their nests and eggs to view. The latter

lay mostly in twos and threes (five forming the complement of this species), and invariably coated with lime: I personally secured a few nice examples for the first time, including a narrow and almost straight-sided variety. The nests are constructed of fish-offal, dried grasses, sea-weed and straw, and occasionally lined by a little of the birds' down. As those of previous seasons are usually furbished up again, in course of time they will occasionally attain the height of from three to four feet,—accompanied, of course, by a proportionate stench,—and at a distance much resemble dirty old barrels that have been stranded from wreck. They cannot always, however, escape the wrath of Æolus: a high wind and tide had combined, since last season, to make a clean sweep of the ancient tenements, greatly to the advantage of my olfactory nerves.

Recalling my last experience of a breeding-haunt of this species, the contrast was striking in the extreme. The "Bird Rock" near Towyn will not soon be forgotten by any genuine lover of Nature who visits this fine and isolated crag, whose high and beetling brow and sides prove wholly inaccessible to man, and furnish a secure home for a large colony of cormorants (though four to five miles from the sea), as also for ravens, falcons and hawks. The cormorants of this favoured spot have uncommonly "good lines," what with abundance of fine fresh trout in Towyn river close by; trout, eels and other fish in the neighbouring Tal-y-Llyn; and any quantity of other food in the more distant, but still regularly frequented sea. It is a most interesting sight to watch, in the gloaming, the return of the cormorants to their "hill-settlement," in parties of all sizes, from one or two to a score, all over two invariably assuming the wedge-shaped form of a flock of wild geese or ducks, and flying at a height of about three hundred feet.

But to return: after touching at an islet where the gulls were beginning to incubate, I landed upon a larger island, the main station or "home farm" of the keeper, and which we may term Farne proper. The cider ducks upon this and the Lighthouse Island (which has other houses) are carefully preserved. A few of their earliest laid eggs are alone taken for sale, the rest are preserved for incubation. Except perhaps upon some of the more distant and consequently less-accessible islands, those named are the only places on the English coast where this species continues to breed. Each pair keeps apart from its congeners, and in flight the contrast is great between the colours of plumage of the sexes.

Examining the keeper's egg-store, formed mainly to supply country orders, I was able to secure some beautiful varieties of the guillemot's egg, fresh to my collection, rich though it has long been in this class; finer examples of the eider duck's than seen previously; and kittiwake's, different both in contour and colouring to those often obtained on the Yorkshire coast. Omitting the terns, of which presently, the following list gives the bird-breeders here, placed in proportion to their reproductive powers:—

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|-----------------------------|-----------------------------|
| 1. Herring Gull.            | 8. Razorbill.               |
| 2. Lesser Blackbacked Gull. | 9. Ring Dotterel.           |
| 3. Puffin.                  | 10. Rock Dove.              |
| 4. Cormorant.               | 11. Shieldrake.             |
| 5. Guillemot.               | 12. Shore Lark.             |
| 6. Oystercatcher.           | 13. Little Ringed Dotterel. |
| 7. Kittiwake.               |                             |

The eggs of the rock dove are very rarely secured, so inaccessible are the crevices where its nests are built. Upon this island the small colony of guillemots occupies a group of bare and (above water) detached rocks, where the eggs are deposited either on the surfaces or on any little shelf or hollow in their sides that can be found. The keeper's stock of eggs is mainly found from the earliest-laid of all kinds: in the case of the gulls, one or two are taken from the usual complement of three, when the birds generally lay others in replacement, but they appear by no means inconvenienced by eggs of different ages in the nest. At Priestholm (Puffin Island), two seasons previously, I found several of the nests to contain one perfectly fresh egg, laid with others which had been incubated for several days, and yet no one had been known to have visited the nests, which, moreover, were not as usual placed among the rocks, but in hollows of the grassy turf on the open island summit! Several of the islands now touched at seemed wholly in possession of these two species of gulls, and, as nineteen out of every twenty nests contained the complement of eggs, no doubt incubation was commencing.

So far as I could glean, the scores of islands unvisited to the east and north presented similar scenes, and it was palpable the keeper and his two young assistants were wholly incompetent to supervise one-half of this fine bird-breeding property. The same may be said of the Staple group, where another keeper is stationed.

Returning homeward by the Lighthouse Island and another lower and more abounding in soil and slight vegetation, I found that the terns, in the earlier part of the day, had most obligingly commenced laying, so that I was able to find numerous deposits of single eggs by the arctic and common terns: others of the Sandwich tern, in very beautiful varieties, I had obtained of the keeper. No doubt other species breed upon the more distant and less-visited islets.\* Large and small, all at this season swarm with bird-breeders, and, if life and health permit, this peep at them will certainly not be the last that I shall obtain. Where craggy and bare, the scene forcibly recalled the glorious days of boyhood at Flamborough, where the deeply-indented cliff-line was all alive with millions of sea-fowl, before the railway had introduced hordes of reckless and heartless scoundrels to strew the bright water and the white rocks with the bleeding corpses of interesting birds, which they could make no earthly use of. It was, in truth, one of the finest sights in the North of England during the month of June, and though, through the jealousy of agents, the naturalist has much trouble to encounter, we may yet be thankful for the preservation of the still unnumbered bird-breeders on old Farne.

H. ECROYD SMITH.

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*The Propagation of the Oyster.*

By W. SAVILLE-KENT, Esq., F.L.S. †

IN the course of the exhaustive evidence concerning the present scarcity of the oyster elicited in the inquiry before a Select Committee of the House of Commons, published in the 'Field' for March 25 and April 1, several questions of considerable importance

\* The deposition of eggs by the common (and probably other species of) tern varies much—affected doubtless by wind and weather. Upon first visiting Walney Island, the eggs of this species were deposited so low in shallow sandy beach as to be washed several feet higher by the succeeding neap but increasing tide. A couple of seasons later not a solitary egg could be found below high-water mark of spring-tides; all lay in hollows among adjacent sand-billocks. At a third visit they were found yet further inland, as well as upon the beach, among sea-weed left by the spring tides. It is thus evident that no single year's experience furnishes any criterion, and the "hard and fast line" drawn by some dogmatic writers is false to Nature.—*H. E. S.*

† Reprinted from the 'Field' of April 15th, 1876, and communicated by the Author.



are raised relative to the reproduction, or "spatting," of this most palatable mollusk. Among the most prominent of these is that relating to the obscure and much disputed one as to the sexual distinctions of the oyster—or, indeed, whether any such do exist. The majority of witnesses, including Mr. Frank Buckland, hold to the opinion that this bivalve is essentially hermaphrodite; that is, that both the male and female elements are combined in each and every individual, and that the eggs produced are self-fecundated. This opinion receives support from the circumstance first noticed by Leuwenhoeck so far back as the year 1697, *viz.*, that the living embryos, or spat, are found fully developed within the mantle-folds of the parent—a fact which, associated with the fixed or stationary habits of the animal, at first sight considerably favours the hermaphrodite theory. This same opinion is universally supported in popular treatises on the oyster. During the course of the inquiry before the Parliamentary Committee, however, one witness, Mr. Austin, an oyster merchant from Canterbury, produced some important evidence in a contrary direction. This witness entirely disagreed with the hermaphrodite theory, and considered the sexes to be distinct, also remarking that the phenomena known to oyster cultivators as the "white" and "black" sickness among oysters was, in his opinion, characteristic in the first instance of the male, and in the last of the female representative of the species. The reasons given by Mr. Austin for this statement were through his having ascertained, with the aid of the microscope, that in the case of the black sickness the little oysters were fully formed, while with the white no such formation was discernible. Mr. Austin had further observed that the black sickness came later than the white—a circumstance to which he thought the present scarcity of oysters was due. To insure a successful "spat," he considered that the white and black sickness should occur together.

While not endorsing the opinion of Mr. Austin expressed in the last two sentences, there are strong grounds for believing that his deductions concerning the sexual individuality of the oyster are correct, as also that the distinctions between the two sexes are associated with the phenomena he observed. The common fresh-water mussel (*Anodonta cygnea*) is, in fact, a case in point, where, under almost parallel circumstances, it has been satisfactorily ascertained that the different sexes are in separate individuals. In this species the ova are lodged, and the embryos developed and

hatched, within the cavities formed by the external gills; opinions differing, however, as to the manner in which these ova take up this position. The majority of authorities favour the opinion that they pass directly from the oviducts to the gill-cavities, and there remain, though it has been suggested by Von Hessling that the ova are possibly conveyed by means of the respiratory currents from one individual to another. Some observations personally made in reference to the reproductive phenomena of a marine representative of the group, the *Modiola modiolus*, would seem to indicate that Von Hessling's hypothesis is by no means improbable.

Fine clusters of this bivalve have been long since established in the tanks of the Manchester Aquarium, whither they were imported with *Aleyonium*, *Dianthus*, and other zoophytes from the North Sea. On passing a tank containing a number of these one day last August, it was observed that dense volumes of granular matter resembling smoke were being ejected from the excurrent apertures of many individuals; in some instances it was further noticed that the granular cloud was of a lighter colour and less dense consistency. The depth of the tank being inconsiderable, a few drops of water containing samples of the two clouds were removed by means of a pipette, and, on examination with the aid of the microscope, yielded the results anticipated—namely, that the darker and more coarsely granular discharge was composed entirely of ova, while the lighter one consisted altogether of spermatozoa. By employing a still higher magnifying power— $\frac{1}{8}$  in. Gundlach—it was likewise noticed that, where the two elements mingled with one another, the spermatozoa readily attached themselves to the ova, a single ovum in many instances bearing five or six or more of these rod-like bodies. This attachment was altogether irregular, no distinct micropyle being detected.

Pressure of other matters at the time interfered with the pursuance of the subject beyond this identification of the sexual elements, and the manner in which they were brought together to insure the fecundity of the ova. If the succeeding phenomena of development of *Modiola* agree with those which obtain in *Anodon*—that is, within the gill-chambers of the parents—it would be requisite for the ova, after fertilisation in the outside waters, to be again drawn within the parent's shell by the inflowing respiratory currents. This explanation is quite in keeping with the hypothesis

of Von Hessling; and the accomplishment of such a result would be easily attained in the calm weather, with the least amount of disturbance in the water, usually prevalent at the spawning season of these mollusks. At the same time it is very evident that if this general transfer of the ova, after being fertilised in the water, does take place, the males will be the recipients and foster-parents of the eggs and future progeny equally with the females; which circumstance perhaps throws some light on the hitherto much vexed question concerning the reputed hermaphrodite nature of a large number of the lamellibranchiate Mollusca.

Whether in the oyster—assuming there to be two distinct sexes—the reproductive process is identical with what is here recorded of *Modiolus*, remains to be ascertained; though, on the other hand, it is also possible that the milt only is ejected into the water, and then drawn into the gill-chambers of the females to fertilise the ova, which would in this case not be released until the embryos are fully developed. The appearance of the “white sickness” at a date considerably in advance of the black one, as evidenced by Mr. Austin, would under such circumstances be readily explained, being indeed a necessary and natural condition instead of an abnormal one, as this witness was disposed to regard it. That the white secretion, or “sickness” as it is called by the trade, is usually identical with the milt or male reproductive element throughout that group of the Mollusca which includes the oyster, was first pointed out by Prevost so far back as the year 1823, at which date he discovered and made known the separate sexuality of the genus *Unio*; these observations being still more amply and generally confirmed by the investigations of Wagner, Milne-Edwards and C. T. von Siebold. The genera *Pecten* and *Cyclas* are among the very few in which it has been satisfactorily demonstrated that the two sexes are combined in the same individual,—that is, that they are truly hermaphrodite,—which information has been mostly derived from the painstaking and valuable labours of M. Lecaze-Duthiers.

The experiences here related concerning the propagation of the genus *Modiola* seem to be by no means confined to the same group or even class of animals. It was, in fact, the first observation of almost parallel phenomena in connection with the well-known tubicolous annelid, *Serpula contortuplicata*, that led at once to an easy solution of those associated with the mollusk. One morning

last Whitsuntide a tank at the Manchester Aquarium, devoted especially to tube-worms and containing some remarkably fine and luxuriant groups of this particular species collected on the Devonshire coast, exhibited signs of unusual turbidity. The water for some distance above the top of the tubes was much clouded, and on closer observation it became apparent that these worms were themselves the producers of the turbidity. Here and there little clouds of granular matter resembling smoke were being shot out of the apertures of the tube, the entire effect produced suggesting the silent discharge of mimic artillery. Sometimes there was a lull for a few minutes, when suddenly the bombardment commenced again at some outlying station, followed, as though directed by electric agency, by a general salvo along the whole line. That there are two sexes of the *Serpula* has been long since satisfactorily established, and it was easy, even with the unassisted eye, to detect the difference between the male and female elements ejected; the aid of a strong magnifying power, however, still more completely confirmed the essential distinctions. After mingling with one another, the cloud of milt and ova gradually dispersed itself through the water, doubtless proving the origin of the innumerable young individuals that have since made their appearance in the tanks.

A question concerning the habits of the oyster, of very trivial importance compared with the manner of its propagation, but at the same time almost equally disputed, is that of its position on the ground or other fulcrum of support in a state of nature—whether, in fact, it rests with the flat or convex shell downwards. Almost all authorities, in books and elsewhere, persist that the convex valve is the one that takes this position, the flat one being the upper and outer one. Such an assumption, however, is entirely at variance with what might be logically anticipated, or indeed with what is known to occur in parallel instances. Furthermore, the oysters themselves afford direct evidence to the contrary. Growing upon a flat surface, it is only natural that the upper or outer of the two shells should be the more convex one; and that such is the case is amply illustrated in the case of the saddle-shells (*Anomia*). Anyone, however, desirous of satisfying himself more fully on this point should examine a series of rough Channel oysters just brought in from the sea. It will be then observed that the delicate hydroid zoophytes, *Tubularia*, *Sertularia*, &c., as also

the more massive *Alcyonium digitatum*, the sponge-like egg-capsules of the whelk, and other substances, are almost invariably attached to the convex valve, which could not possibly occur unless this was the upper or outer one. During dredging operations individuals no doubt occasionally get overturned, so that these parasitic growths make their appearance on the reverse side, and may be afterwards caught and so brought to market. These exceptions are, however, of rare occurrence, and we might almost as reasonably anticipate that soles, turbot and other flat fish rested with their convex surface applied to the ground as that such a rule obtains with the oyster.

W. SAVILLE-KENT.

Aquarium, Great Yarmouth, April 3, 1876.

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[The question of sex in oysters has long been one of great interest to physiologists and naturalists—I do not consider the words perfectly synonymous—and the propounding of any new, or unexpected, or revived opinion would be sure at any time to provoke considerable discussion, or indeed altercation: as I cannot therefore consider it settled in the negative merely because Dr. Bree and Mr. Saunders, in the following letters to the Editor of the 'Field,' express such decided opinions, I will for the present suspend any judgment I may have in the matter.—*Edward Newman.*]

SIR,—Mr. Lloyd has satisfactorily answered Mr. Saville-Kent's astounding statement that the "five-fingers" did not feed upon oysters. If you will grant me a short space, I will show that his statements, or surmises, in his letter of last week, are equally unfounded.

Some years ago I made the propagation of the oyster my especial study, and the facts I relate may be relied upon as true. I will not discuss here the question whether the oyster is self-fertilising or whether the sexes are distinct. All naturalists with whom I am acquainted are believers in the former doctrine, and so am I, although I at the present moment have no positive data upon which to speak more positively.

Let us follow the history of the oyster after the eggs are emitted by their parent—that stage termed by oyster merchants and their men as "white sick." If an oyster is examined in this condition, it will be found to contain a vast number of eggs of a cream colour. Mr. Eyton (see his book upon oysters) found one grain to contain

25,000 eggs, and the entire spawn one and a half million. No *male* oyster has ever been seen to have any intercourse with an oyster in this condition. In the course of forty-eight hours the colour of "white sick" will have slightly altered, and assumed a grayish tinge. If examined by the microscope, it will be found that this is due to the early formation of the oyster-shell. I believe that these shells are formed by the union of two eggs, thus, oo, and then the addition of two more, giving the following appearance,  $\circ\circ\circ$ , and that these eggs form the future shell and oyster. I do not state this positively, but rather as a guide to future observers. The same rule has been said to obtain in *Buccinum*. Of this, however, I am quite sure, that the continued change of colour in the eggs, from the pale tinge to their gray and sometimes almost black condition, is due to the gradual growth of the gray shell.

The eggs are now what is termed "black sick," and in this condition are believed by the unscientific to be the male, while the white spawn is said to be the female oyster! No statement can be more unfounded or more absolutely untrue than this. The eggs in their creamy condition give origin to the shells of the oysters, which grow larger and deeper in colour according to their age.

Just before their emission from the shell, the young oyster itself may be observed working about a cluster of cilia—hair-like appendages—which afterwards are withdrawn within the shell, and constitute the "beard." The young oysters are now emitted into the water, and commence the business of life. Swimming about by means of their cilia, they seek out and at last find a resting-place, known by the name of "cultch." To this "cultch" they attach themselves, close to the hinge on the apex of the round shell, with the flat shell upwards. The round or lower shell, which is, in fact, the *habitat* of the oyster, is immovable. The upper flat shell only has the power of motion, and is opened, and that by a specially adapted apparatus, for the rest of the oyster's life. It follows, if you place an oyster at any period of its existence on the flat shell, it can only open as far as a yielding surface below will permit it. If the surface is sufficiently hard, the oyster cannot open, and must die. It must be remembered that the natural position of the oyster is a fixed one, the flat shell opening only at the will of the creature. As to annelids and other shelled things forming upon the round

underneath shell, this is exactly consistent with their economy—to work where they are least disturbed.

Now the “spat,” as it is termed after its adherence to the cultch, if left alone would be a fixed object for life. The oyster dredger and his men now come in, and before the poor thing is six months old they drag it or tear it away from the cultch. This is done when the dredgermen are what is called cleaning their beds, in the close summer months. No spat ought to be allowed to be torn from its cultch for at least two years. If the beds cannot be cleaned without destroying the oyster, well then let them alone. It is quite obvious that machinery could be used to effect the object of removing weeds and five-fingers and dog-whelks without injuring the spat. All things must come to an end; and so will the cultivation of the oyster, if natural laws and well-known facts are disregarded, and every one is permitted to destroy the goose which lays the golden eggs. With regard to temperature at the spatting season, I do not believe that, *ceteris paribus*, it matters much, unless excessively cold and boisterous. The young oyster gets a complete shell within the shell of its mother. When emitted, for the forty-eight hours which I believe is about the time it wanders about in search of cultch, it is in the greatest danger, not only from boisterous weather, but from the numerous enemies which in such a state it possesses, and which, being microscopic, we know nothing about.

Pages of evidence may be written down, and committees may sit for session after session; but unless the laws of Nature in the economy of the oyster are observed and acted upon in its culture, it follows that this delicious edible must in the course of time become extinct. The oyster is a gregarious animal, living in immense masses, the dead shells of which become the “cultch” of the young brood. In dredging both are removed, and the oyster is laid down in beds where the proper cultch does not exist. The Blackwater is said to be the finest oyster river in the world, and yet people are permitted to go there at all times and remove the cultch from its bed. I am told that this cultch or “soil” has actually been sold for land draining—another feature in the golden egg tale. The commercial value of oysters has enormously increased, and the best of our oysters from this neighbourhood are bought by the French and Dutch, who will always give a better price than Englishmen. If we were to prohibit the exportation of oysters, we should soon have them cheap enough, and eaten only

by our own countrymen. Fond as I am of a good native, I would not advise such a breach of "free trade" policy as this; but, in my opinion, it is the only real plan to secure a cheap oyster.

Much may be done also by regulating—not stopping—the summer working of oyster-beds. Dredges should be so constructed as to leave the year-old oysters, and bring up only two-year-olds, weeds, five-fingers and dog-whelks.

C. R. BREE.

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SIR,—In the 'Field' of April 15th there appeared a communication from Mr. W. Saville-Kent on the subject of "The Propagation of the Oyster," in which the evidence given by Mr. Austin before the Select Committee of the House of Commons, and also certain facts observed with regard to the spatting of *Modiola modiolus*, are quoted in opposition to the opinion entertained by most scientific naturalists that the oyster is hermaphrodite.

Mr. Saville-Kent considers that "there are strong grounds for believing that Mr. Austin's deductions concerning the sexual individuality of the oyster are correct," and that the black spawn consists of ova produced by a female oyster, while the "white sick" is the milt of the male, and that the former can only be fertilised by being brought into contact with the latter.

This theory is combated in a letter from Dr. Bree in the succeeding number of the 'Field,' in which the history of the development of the ova into the perfect oyster is fully described; but some further evidence of the fallacy of the unisexual theory is desiderated. I have waited another week, and still none of your correspondents furnish the results of their observations on this point. I therefore venture to ask to be allowed to make the following contribution to the stock of information which microscopic investigation has elicited with regard to the early history of the oyster, and I think my observations prove that, certainly, "white sick" is not milt, but that it consists of ova, which, without commixture with other spawn, can be developed into embryo oysters such as those found by Mr. Austin in his examination of the "black sickness."

On the 27th of May, 1865, one of my dredger friends, hearing that I wanted a "sick" oyster, brought me one, which, on an attempt being made to open it, had proved to be "milchy." On being placed in a vessel filled with sea-water it began to emit the spawn,



which, when ejected from the shell of the parent oyster, lay in a white mass at the bottom of the glass vessel. I immediately removed small quantities of the spawn with a dipping tube, and transferred them to separate vessels. Under the microscope each granule had the appearance of a white, opaque, heart-shaped motionless egg. In those vessels in which a larger quantity of spawn had been deposited, it soon died off, and in a few days most of it had become decomposed; but in one vessel, which presented a large surface of water exposed to the air, and contained only a small quantity of spawn, the water remained bright and pure, and, after four days, the ova showed unmistakable signs of vitality, a slow, restless motion being perceptible on examination with the microscope. On the fifth day the motion was more rapid, and cilia were distinctly visible under the microscope. On the seventh day the embryos rose from the bottom of the vessel, and swam with increased rapidity. On the tenth day they had acquired shells, and presented exactly the appearance with which microscopists who have examined black spawn are familiar. Unhappily, I am unable to record any further progress made by my artificially-hatched oysters. Although I took care to supply them with suitable "cultch," they could not make themselves at home, and died off miserably, after an active existence of some days' duration. The same result has attended all my experiments even with mature and healthy spawn, and I am inclined to believe that that condition of weather which practical oyster-culturists are agreed is requisite to enable the young oyster to attach itself—*viz.*, steady, warm and bright weather, with still, clear water—is also favourable to the production of certain elements which serve for the nourishment of the tiny creature, and in the absence of which it is starved, even though it be sheltered from the rough waves by artificial means.

It will, of course, be understood that the emission of white spawn in the case described above was abnormal and unnatural, and it is no wonder that the mass of it died when removed from the parent shell, being thus deprived of the vivifying influence of the ciliary currents perpetually flowing over the branchiæ of the oyster, within the folds of which the ova are intended to remain until they are brought to maturity.

In spite of all that has lately been said and written about over-dredging, it is a fact that countless myriads of embryos are every year matured within the shells of native oysters on the grounds of

the Whitstable Company, and are emitted as "black spawn," to all appearance vigorous and healthy. It is also a fact that these grounds are well supplied with "cultch,"—*i. e.*, old oyster-shells, which are admitted to be the very best material to invite the attachment of the young oysters; and whenever the sharp eyes of the dredgers discern indications that spat is falling, orders are at once given to cease working with the dredge. Yet year after year the hopes of oyster-catchers and oyster-eaters are alike disappointed.

SIBERT SAUNDERS.

Whitstable, May 2, 1876.

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*Starfishes and Oysters.* By EDWARD NEWMAN.

I WAS rather taken aback the other morning by reading in the columns of that excellent periodical, the 'Field,' a very able paper from the pen of Mr. Saville-Kent, with the heading "Starfish and Oysters," and which commences with the following paragraph:—

"If any poor unfortunate representative of animate nature has been singled out for especial obloquy and abuse, and of whom it may be said 'he has no friends,' that unhappy creature is the starfish. Far and wide, both at sea and on shore, these luckless radiates enjoy the most unenviable notoriety. Fishermen, gourmets, and naturalists have alike united to abuse them from time immemorial, in association with their accredited oyster-eating propensities. Last century, such was the animus in high places against the common starfish (*Uvaster rubens*), in virtue of the delinquencies, real or imaginary, of that species in this direction, that the High Court of Admiralty laid penalties even upon those who did not "tread under their feet or throw upon the shore a fish which they call five-fingers, resembling a spur-rowel, because that fish gets into the oyster when they gape, and sucks them out."

There can be no doubt that the charge in question has been repeatedly made and is very generally believed: scarcely any one now doubts that these starfishes, or as they are usually called by fishermen "five-fingers," actually will destroy and devour multitudes of oysters, thus tending to promote that numerical decrease, which, if not patent to all, is at least admitted on all hands to have taken place of late years: now the question very naturally arises, How far is this charge substantiated? Let us hear Mr. Kent:—

"My first score on behalf of these persecuted, if not hitherto absolutely friendless, ocean waifs, is embodied in the following:—For upwards of a

twelvemonth a special tank in the Manchester Aquarium was devoted by me to the solution of the mystery hitherto enveloping the method in which the starfish attacked the body of the oyster and made it his own. \* \* \* In this tank at the Manchester Aquarium (No. 2, south corridor), therefore, a number of oysters of various sizes were placed, and with them a collection of starfish of the largest dimensions, including *Uraster rubens*, *U. glacialis*, *Cribella oculata*, *Solaster papposa*, *S. endeca*, *Luidia fragilissima*, *Asterias aurantiaca*, &c. Notwithstanding the avowed epicurean tastes of our starfish, however, not a single attempt has been made by any one variety of these radiates to meddle with the oysters throughout the considerable interval during which they have been associated with one another. This circumstance is of itself sufficient to indicate that a great mistake concerning the habits of starfish has crept in somewhere, plainly showing at the same time that the oyster-devouring charge which is laid against them is without foundation."

On the other hand, Mr. Lloyd volunteers his evidence as a witness for the oyster and against the starfish. If Mr. Kent is a competent witness from his actual experience at Brighton, Manchester and Yarmouth, Mr. Lloyd is still more so from his still more extended experience at Hamburg and the Crystal Palace:—

"Mr. W. S. Kent, in the 'Field' of April 22, assumes that such oysters as I have seen attacked by starfish in the manner I have described in the 'Field' of the previous week (April 15) were 'in a weakly and unhealthy condition.' But his assumption is incorrect, because I am careful to say that if I have taken away the starfish at the commencement of an attack nothing has happened to the oyster, and it has gone on living and flourishing as well as oysters do live and flourish in aquaria. At p. 46 of the 'Crystal Palace Aquarium Handbook' occurs this passage, written by me three years ago:—'They (*Uraster rubens*) are very voracious, and may be frequently seen in the Crystal Palace devouring oysters by insinuating their bladder-like, semi-transparent stomach (pouting from the mouth) between the tightly-closed shells of the bivalve, which then soon opens, and the oyster is destroyed.' Now, an oyster never has its shells tightly closed if it is unhealthy, as the earliest sign of ill-health in bivalves is want of means of controlling the adductor muscles which pull the shells together. Yet I have drawn the stomach of a starfish from an oyster when the latter has been so tightly closed that appreciable force has been required for such withdrawal."

This exactly corresponds with my view of the case, and prior to reading either Mr. Kent or Mr. Lloyd I had published in the 'Field'

newspaper of April 27, 1872, the following paragraph, which I scarcely incline to revoke, except under pressure of more conclusive evidence than I at present possess:—

“All the sea-stars are exceedingly greedy animals, and greatly addicted to the consumption of oysters. Regardless as they are of their own lives and their own entirety, they are still more careless of the lives of others: the oyster is torn from his stronghold, and devoured while still in possession of his most vigorous, though sedate, existence. All the fishermen are aware of this *penchant* for oysters on the part of the sea-stars, and attribute their loss of limb to a too-great eagerness to gratify this appetite. They say that the oyster, who is fond of fresh air, always sleeps with the door of his cottage ajar; and that the sea-star, who is always walking about the oyster-beds, seeking, like man's spiritual enemy, whom he may devour, spies an unusually fair and fat mollusk peacefully slumbering in her wigwam, and exclaims to himself, ‘Here's a delicious native! snip!’ and forthwith seizes her by the beard—all oysters have beards, regardless of sex. ‘Snap,’ says the oyster, seizing the starfish by the leg. The marauder is very indifferent to the proceeding; he merely jerks off his leg and leaves it to its fate, well aware that Nature will supply him with a substitute as soon as he requires one; so he walks off again, bent on gratifying his appetite as before. By the way, there is a superiority in the substituted leg of a starfish over those in use among our sailors and soldiers, inasmuch as they are made of the same material as those that have been lost, and therefore accommodate themselves more readily to the exigencies of the case.”

I have also anticipated Mr. Kent's objection some three or four years before it was made:—“Some have affected to disbelieve the accounts of the predatory warfare carried on by the starfish against the oysters; but although the fisherman's account of the *modus operandi* may not be perfectly reliable or strictly scientific in its details, still it appears certain that the sea-stars consume a large number of oysters. In order to account for the starfish getting at the ‘natives’ so readily, it has been suggested that the starfish has the ability to secrete an acid sufficiently powerful to dissolve the hinge of the bivalve, but I feel scarcely willing to accept this solution.”

EDWARD NEWMAN.

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*Substance of the Report of the Council of the Zoological Society of London, read at the Annual General Meeting, April 29th, 1876.*

*Roll of Members.*—The aggregate number of Fellows, Fellows elect, and Annual Subscribers, at the close of the year 1875, amounted to 3241. The corresponding number at the close of 1874 was 3197, showing an addition during the year 1875 of 44.

*Income.*—The income of the Society for the year 1874 was so large, and so far beyond all former precedent, that the Council could hardly have expected to be able to give a more favourable statement for the year 1875. This, however, they have now the pleasure of doing. The total receipts from last year have again exceeded those of the preceding year, though the amount of excess is not very considerable. The income of 1875 amounted on the whole to £28,738 11s. 4d., which was more than that of the previous year by the sum of £321 6s. 5d., and is the largest annual income ever yet received since the Society's foundation. Of this excess of income it will be remarked that £246 9s. 11d. is accounted for by the compensation received from the Grand Junction Canal Company for the damages caused by the explosion on the Regent's Canal on the 2nd October, 1874. The circumstances of this explosion were explained in the Council's last Annual Report, and the estimated amount of the damages caused to the Society was stated. The Council are pleased to be able to inform the Fellows that the whole of this amount has been refunded to the Society by the Canal Company. But, even when this extraordinary item of receipts is deducted, the income of 1875, in spite of many unfavourable circumstances, still shows an increase over that of 1874 by the sum of £74 11s. 6d.

The Garden receipts in 1875 amounted to £16,826 15s. 6d., being £66 19s. 6d. more than those of the previous year, and have never been exceeded except in 1873.

*Expenditure.*—The sum of £31,667 15s. was required for the ordinary and extraordinary expenses of the year, and the sum of £772 15s. was carried to the Reserve Fund.

The ordinary expenditure of 1875 exceeded that of 1874 by the sum of £1499 10s. 9d. This increase is attributable partly to the excessive cost of provisions for the Menagerie, under which head £370 17s. 8d. more was expended in 1875 than in the preceding

year. The high price of hay, which is a very large article of consumption in the Gardens (upwards of 250 loads being required for the annual supply), was one of the chief causes of this excess.

The extraordinary expenditure of 1875, which amounted altogether to £7479 9s. 3d., was mainly caused by the new Lion-house, to which a sum of £6966 1s. 3d. was devoted. Other smaller special works in the Gardens required a further expenditure of £463 8s. in 1875.

*Buildings and Works.*—The expenditure on the staff of workmen, together with the labour and materials required for ordinary repairs in the Society's Gardens in 1875 amounted to £2160 4s. 9d. Under this head are included all the items necessary for the maintenance of this branch of the Society's establishment in a perfect state of efficiency. Besides this, as already mentioned, a sum of £7429 9s. 3d. was expended on the following special Works and Buildings:—

	£	s.	d.	£	s.	d.
New Falcon's Aviary (balance) - -	25	0	0			
Repairing damages of Explosion (balance)	5	8	8			
	<hr/>			30	8	8

#### WORKS OF 1875.

New Lion-house and works connected therewith - - - - -	6966	1	3			
New Framing-ground and Potting-sheds	232	16	7			
New Tortoise-house - - - - -	105	14	3			
New Water-main - - - - -	94	8	6			
	<hr/>			7399	0	7
				<hr/>		
				£7429	9	3

It will be observed that the greater part of this sum has been devoted to the new Lion-house, which, as mentioned in previous Reports, the Council have had long in prospect, and of which the main portion has now been completed: when thus complete it will form, it is believed, by far the largest and most perfect building for the accommodation of the larger Carnivora ever erected. The total length of the main building is 228 feet, exclusive of the porticoes; the width, up to the front of the dens, 35 feet. The dens are fourteen in number, and will accommodate, if necessary, as many pairs of animals, each animal having a separate inside den. The larger dens measure 20 feet by 12. The smaller are about 12 feet

square. The height of the building at the central elevation is 30 feet. At the back of the dens is a wide passage extending the whole length of the building. From this passage doors open into every inner den, and in this are fixed the chains and pulleys for opening the sliding doors between the dens, so that the whole of the work connected with cleaning and management of the animals is effected from behind. In the centre, at the back of the passage are two day-rooms and four sleeping-rooms for the keepers, two of whom will always sleep on the premises. The four out-door playing-cages behind, which are still to be erected, measure 44 feet by 29. The animals will be transferred into them through a kind of movable tunnel running on wheels along the keeper's passage.

The present occupants of the Lion-house consist of six lions, seven tigers, two jaguars, two leopards, three pumas, and a clouded tiger, altogether twenty-one in number. The only desideratum among the larger Felidæ is the ounce (*Felis uncia*) of the mountains of Central Asia, of which as yet no living specimen, it is believed, has ever been brought to this country.

In order to furnish winter quarters for a pair of the giant tortoises of the Aldabra Islands, acquired last summer, the glass front which formerly covered a portion of the old Lions' dens was removed into the North Gardens, and re-erected there, at a total cost of £105 14s. 3d. With the addition of a back wall and a small heating apparatus, a very efficient building has thus been formed for the object in contemplation.

*Losses by Death in the Menagerie, and the Causes thereof.*—Prof. A. H. Garrod, the Society's Prosector, has continued his investigations into the causes of death of the animals that have died in the Gardens during the past year. He reports that the death-list of the year 1875 indicates that chronic rather than acute diseases were the causes of mortality in an unusual percentage of cases, which (as it indicates that the incentives to immediate disease, such as cold and bad hygienic arrangements, were absent) is a very favourable sign. The female Indian elephant and the manatee were the most serious losses, the former having suffered from chronic phthisis and rheumatic arthritis, the latter apparently from the lack of a food sufficiently nutritious for its requirements. Such food it is, of course, extremely difficult to procure in this country, if we may form any estimate of its ordinary quantity from the habits of the animal in a state of nature.

As is usually the case, the prevalent disease among the Old-World monkeys was tuberculosis of one organ or another; while among the New-World monkeys tubercle was far less frequent.

The ruminant animals, on post-mortem examination, were found to be more than ordinarily free from hydatid tumours in the liver; and intestinal parasites were remarkable for their absence in all the animals, indicating that their food was carefully selected and prepared.

The Polar bear deposited in the Society's Gardens by Captain Allen Grant, suffered from a large ulcer on its palate, which, no doubt, was the cause of its persistently refusing food, and consequent death.

The specimen of the king penguin (*Aptenodytes Pennanti*), presented by F. E. Cobb, Esq., on the 18th of May, 1875, died on the 11th of August, 1875, from what is so frequently the cause of death among these birds, namely, acute inflammation of the walls of the interthoracic air-cells, which spread to the pericardium.

*Additions to the Menagerie.*—The total number of registered additions to the Menagerie in 1875 was 1458, of which 559 were acquired by presentation, 557 by purchase, 156 were bred in the Gardens, 143 were received on deposit, and 43 obtained in exchange.

*Animals Bred in the Gardens.*—The following is a list of the animals which have been bred in the Gardens of the Society between the 1st of January, 1875, and the 1st of January, 1876. When more than one specimen has been bred the number is mentioned:—

a. *Mammals.*—Two whitefronted lemurs; three collared fruit-bats; blotched genet; two coatis; two Cuming's octodons; four hairy-rumped agoutis; Persian gazelle, male; eland (*Oreus canna*); zebu, male (*Bos indicus*); three-quarter-breed zebu (between *Bos indicus*, male, and hybrid *Bos frontalis*, female); Cape buffalo, female; fallow deer; two Wapiti deer; two Molucca deer, male; hog deer; axis deer; Prince Alfred's deer; Virginian deer; Pampas deer, female; two Reeves's muntjac; short-tailed muntjac; three hairy armadilloes; great kangaroo; red kangaroo; Derbian wallaby; two hybrid rat kangaroos (between *Hypsiprymnus Ogilbyi*, female, and *H. Gaimardi*, male).

b. *Birds.*—Four Upland geese; six trumpeter swans; two variegated sheldrakes; ten summer ducks; eight Chiloe wigeon; twelve Chilian pintails; eleven Australian wild ducks; nine



spotted-billed ducks; two rosy-billed ducks; four hybrid pigeons (between *Columba maculosa* and *C. gymnophthalma*); three vinaceous turtle doves; seven crested pigeons; four bronze-winged pigeons; common crowned pigeon; six hybrid Japanese pheasants (between *Phasianus versicolor* and *P. torquata*); nine Amherst pheasants; two three-quarter-breed Amherst pheasants (between hybrid *Thaumalea Amherstiae*, male, and hybrid *T. picta*, female); Siamese pheasant; four Temminck's tragopans; four peacock pheasants.

c. *Reptiles*.—Five Russell's vipers.

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**Bat flying in the Sunshine.**—Whilst walking on Tillmire, a large common near York, with some of my friends, on the 13th instant, I noticed a bat flying about a house. The day was about the hottest we have had here this year, and the sun was shining very brightly at the time: it was about four o'clock in the afternoon.—*Edward H. Christy*; 20, Bootham, York, May 21, 1876.

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**Leadenhall Market in May.**—On the 5th and 15th of May I took the opportunity of being in the City to visit Leadenhall Market. In spite of legislation, Dutch and English, there were quantities of ruffs and reeves, I am sorry to say, and redshanks and other birds; and in some cases I even saw the eggs offered for sale at the same stalls with the birds. There were also many godwits of both species, and one spotted redshank in splendid summer plumage, besides plovers, and on the 5th a graylag goose, which I never saw in Leadenhall so late before.—*J. H. Gurney, jun.*; *Reform Club*.

**Greenland or Iceland Falcon in Guernsey.**—I have a beautiful male specimen of the Greenland or Iceland falcon, shot here on the 11th instant. Length, twenty-three inches; spread of wings, forty-seven inches; length of wing, twenty-one inches; from the elbow to the point of longest quill, fifteen inches; length of tail, eight inches and a half; length of leg, six inches and three-quarters; tarsi, three inches. Feathered in front of tarsi two-thirds of its entire length. Weight, forty-seven ounces and a half, Guernsey weight. The crop and meat—no bones or feathers mixed with it—weighed two ounces: it had just fed off a pheasant. Cere, orbits and feet, a very light yellow; claws, horn colour, not very dark. Bill short and rounded, blue at the base, shading off almost black at the point, with a very strong projecting tooth in the upper mandible; the under mandible deeply notched from the point inwards to meet the tooth. Eyes very dark, almost black. Chin and throat white; breast white, with a few dark hair-like

streaks; belly white, each feather with a diamond-shaped spot, small upwards, but increasing in size all the way to the vent; on the sides the spots are larger and of irregular shape; the foot is spotted, but feathers in front of tarsi white; top of head gray, centre of each feather dark slate-colour, margined with white; ear-coverts much lighter than top of head; back and wing-coverts dark slate-colour and white, forming irregular bars across the back; rump and upper tail-coverts a lighter colour, without any white, the quill of each feather, from the shoulder to the tail, black, showing a distinct line in each feather; tail gray, with dark bands; under wing-coverts white, spotted and streaked very much like the curlew or whimbrel, and the bird on the wing had the appearance of being all white. Now I want to know if it is the Greenland or Iceland falcon? The bird on its legs by my side is a splendid specimen, and though not set up as in either of Yarrell's plates, yet as I look at it, even to the very cere, it looks a Greenland in comparing it with the plates; but then come the under tail-coverts, which are spotted, and of the quill-feathers the second is the longest, but the first and third are not of equal length. I have described the bird as well as I can; perhaps some day an abler pen than mine may do it more justice. Previous to its capture it had been about here over a month, and was very wary and shy—no getting a shot at it. I believe it was never fired at but once, so it grew bold, and on the 7th it stooped and caught a pheasant by the rump: away it went, with the pheasant all legs and wings, until the feathers gave way. The falcon was disappointed of its prey, and the feathers blew over the field, but on the 10th he struck a hen pheasant dead, seized her in his talons, and flew away with her. On the 11th he came for another, when he received the contents of the keeper's gun.—*James Couch; Guernsey, April 22, 1876.*

**Greenland Falcon in Scotland.**—A fortnight ago a fine specimen of this rare and noble visitor was sent me alive; it had been caught in a gin, on the 20th of April, in Argyleshire. It is now in the Clifton Zoological Gardens. The following is a description of the bird:—Almost entirely white, spotted with brownish longitudinal marks, disposed in the middle of each feather, on the back and wings. Back of the head and neck also white, faintly streaked down the middle of each feather with brown. Throat, breast and vent pure white, very faintly marked at the sides, which latter marks are hid by the wings. Tail, upper and lower tail-coverts pure white, without any marks. Irides dark brown; bill pale grayish horn, darker at the tip and deeply notched; feet grayish white; claws grayish horn colour. Comparing the above with Mr. Newton's description of the Greenland falcon, I believe I am correct in assigning it to that species, and if, as I hope, the bird will do well in its present home, I shall have the opportunity of recording the change of plumage at the next moult, when it should assume transverse markings, and the feet become gradually pale yellow.—*H. J. Charbonnier; Bristol.*

**Plumage of the Roughlegged Buzzard.**—I am much obliged to Mr. Gurney for his note on the plumage of the roughlegged buzzard (S. S. 4921). I had not, however, as he supposes, passed over the correction in the "Corrigenda" to the first volume of the fourth edition of "Yarrell," and am therefore still of opinion that mine is a bird of the second year; and my reasons for thinking so are, as previously stated, that the general markings are more like the adult than the young bird, as there described. I may add a few more particulars to those I have already given:—Nearly the whole of the feathers of the upper part are edged, and some very broadly, with dirty white, and only a very few with rust-colour; the fore arm and wrist are dull white on the edge. The inner webs of the primaries are white to the end of the broad part, with a brown streak running up the shaft; this streak gradually increases in width on each feather nearer the body. The under surface is marked as follows:—The chin, throat and breast are dirty white, streaked longitudinally and patched irregularly with brown. The feathers of the sides covering the thighs and upper part of the belly are nearly uniform brown; those on the lower part of the belly are white, barred with brown; under tail-coverts dirty white. The tail is grayish white at the base, becoming darker towards the tip, and the brown markings are so exactly like those of the Suffolk bird so graphically described in Montagu's 'Dictionary' that I need here only repeat it:—"Near the tip is a brown bar above an inch in breadth; above that another, half an inch broad; and above these each feather had a spot upon it in the middle, mimicking, when spread, a third bar." The outer feathers are irregularly streaked on the outer webs. My bird and this Suffolk specimen seem also to have been very nearly the same length, and the new feathers in the tail, which I have previously described, had only a small *streak*, instead of a *spot*, on the middle of this feather, on the proximal part; and I pointed out that there are also markings on the broad distal bar of this new feather almost making it into two bars. It therefore appears to me that as the broken bar on the proximal part is disappearing, another bar is appearing on the distal part, which when fully formed will give three distinct bars on the tail. The under surface of the tail is grayish white, darkening towards the tip, and the bars of the upper surface can be traced faintly shaded through. There is no mention of any bars on the tail of the young bird described in "Yarrell;" moreover, it is also there stated that "Mr. Gurney is of opinion that the fully adult dress is not assumed until the third year." This can surely mean nothing less than that there is an intermediate dress worn in the second year. If therefore Mr. Gurney is still determined to make my bird a "young one," he must, I think, admit that they sometimes borrow their father's coat—especially the tails—at the same time wearing a rather shabby vest of their own.—*John Sclater; Castle Eden, May 11, 1876.*

**Ring Ouzels in Winter.**—Prof. Newton, in the fourth edition of Yarrell's 'British Birds' (p. 287), says that the only occurrence in winter of the ring ouzel in this country seems to be Gilbert White's, in 1770. I have, however, in the course of my reading, come across one or two occurrences as late as the end of November and as early as February.—*J. H. Gurney, jun.*

**Golden Oriole in the Lizard District.**—We have some of these beautiful birds with us, and I dare say before the end of the month I shall hear of their visiting the groves of the Abbey of the Lord Proprietor of Scilly, to whom I have written bespeaking his attention to their arrival. I have seen a male and female, which are in the hands of Mr. Vingoe. The female is a very adult bird, with the brown lineal longitudinal streaks on the breast and belly. The male bird is dull in colour, and appears to be in the second year's plumage. Another specimen, a female, mutilated by a hawk, was also sent here to-day.—*Edward Hearle Rodd; Penzance, May 2, 1876.*

**Golden Oriole in County Dublin.**—I have had the opportunity of examining a very perfect specimen of the golden oriole (*Oriolus galbula*, Linn.), which was picked up dead, on the 30th of April, at Nutley, near Dublin, and is being preserved by Mr. Williams, of Dame Street. It is an adult female, in beautiful plumage, not a feather soiled, and is, I believe, the first one ever obtained in the county; my friend, Mr. A. G. More, however, informs me that about five years ago a male bird frequented the Botanical Gardens at Glasnevin for several successive weeks. The present example appears to have succumbed to the combined effects of starvation, fatigue, and perhaps cold, as we have been experiencing hard frosts lately. It is in the possession of Mrs. Roe, in whose place it was found.—*J. Douglas-Ogilby; 36, Elgin Road, Dublin.*

**Bluethroated Warbler in Yorkshire.**—I have much pleasure in recording, for the first time in Yorkshire, the occurrence of the bluethroat, or blue-throated warbler. A specimen of this rare little bird, which had been picked up dead under the telegraph-wires at Seamer, near Scarborough, was taken to Mr. Roberts, of Scarborough, on the 12th of April. Its head and neck had been considerably damaged from coming in contact with the wires, in addition to which the man who found it kept it for several days, and then carried it to Scarborough in his pocket. Mr. Roberts thought, when he first saw it, that it would be impossible to mount it, but with skilful handling and great patience he has now managed to make it into a very presentable specimen. It is a female bird, in good plumage, and Mr. Roberts told me it contained well-developed eggs. The occurrence of this specimen is the more interesting as it is an example of the type which possesses a white spot in the centre of the blue on the throat (*vide* new edition of "Yarrell," p. 323). Only one other individual of this type is recorded as having been met with in Britain.—*Julian G. Tuck; Old Vicarage, Eberston, York.*

**Siskin breeding in Wicklow.**—I had the satisfaction of recording in the 'Zoologist' (S. S. 3914) the fact that the siskin undoubtedly breeds in Wicklow, and I now have the pleasure of informing you of a second instance. This time the nest is placed at the top of a deodar cedar, about eighteen feet from the ground, and at present contains, as well as I can estimate by the sense of touch, three or four young ones. The tree is so weak near the top that I was unable to look into the nest. The nest is all moss outside, and in shape and size is very similar to that of the goldcrest. The note of the siskin is so unmistakable and distinct from that of most of our songsters, that when the owners of the nest above described were pairing and building their cry could be heard across the whole pleasure-grounds, though several other birds were calling at the same time. Confiding, tame, and easy of approach, the siskin, with its twittering, frisky song, lively manners, and sprightly attitudes, is a great favourite of mine, and I regret that the confidence it reposes in man is sometimes abused.—*Richard M. Barrington; Fassaroe, Bray, Co. Wicklow, May 21, 1876.*

**Jackdaws stealing Guillemots' Eggs.**—I have been told by an old climber at Flamborough that the jackdaws are in the habit of stealing the eggs of the "scout," or guillemot, and flying with them to the top of the cliffs, to devour them there; in fact, the appearance of the broken shells on the grass above the cliffs is an unfailing sign that the egg season has commenced. Apropos of guillemots, Mr. Bailey killed a silvereye or bridled guillemot off Flamborough on the 24th of March, which I have added to my collection.—*Julian G. Tuck; April 7, 1876.*

**Martin returning Annually to the same Nest.**—As the swallows are now arriving to gladden us with their merry chirp and graceful motions, perhaps the following may interest some of your readers:—In the year 1850 Mr. Gilbert, a farmer, living at Rainham, Kent, wished to test the worth of a common saying, that if you mutilate the nest of a martin it never returns to it. He broke down a portion of a nest built near his window, and to which he thought he had observed the same bird come four or five previous summers. To convince himself whether he was right or not, he caught the bird and put a silver ring round one of its legs. Much to his gratification, he saw this same bird return to the nest nine following summers: it is therefore reasonable to conclude that this bird found its way to the same spot at least fourteen different seasons, notwithstanding the partial destruction of its nest. The bird was remarkably tame.—*H. Cox; 5, Park Road, West Dulwich, May 9, 1876.*

**Wood Pigeon building in a Buzzard's Nest.**—Last year a pair of buzzards built their nest in an old stunted and weather-beaten elder-bush growing on a wall close to the cliffs near Kingswear Castle, and notwithstanding the exposed situation and facility with which the nest could be

reached, succeeded in bringing off two young ones. Within fifty yards of this bush runs a path, and it is a marvel to me the nest was never discovered and robbed. I visited it one day when I expected the young to be fully fledged, but was a day or two too late, for they had flown, although I noticed them with the old birds close at hand. On approaching the bush a wood pigeon flew out, and on climbing up to look at the nest I discovered the pigeon had built her nest by the side of the buzzard's,—in fact, had evidently made use of some of its material,—the two nests being worked into each other. The pigeon must have commenced building before the young buzzards could have flown, for her nest contained two eggs, which apparently had been incubated for several days. The buzzard's nest was a large structure composed of twigs and lined with cow-hair and wool.—*Gervase F. Mathew; H.M.S. 'Britannia,' Dartmouth, May 9, 1876.*

**Hooded Merganser.**—I must apologise to Mr. Gurney for having left his question concerning the occurrence of this species at Sheerness in March, 1870, so long unanswered. The birds in question were merely the common redbreasted merganser, the male being in fine breeding plumage. I am sorry such a mistake should have occurred, and can only attribute it to a slip of the pen, for I never noticed the error myself, and am much obliged for attention having been called to it, and hope the Editor will pardon me for not having observed and corrected it before.—*Id.*

**The Divers.**—It is not easy at the time when there are no traces of what is called the summer plumage, to distinguish our British species of divers (*Colymbus*) apart. The blackthroated diver, in its plain gray garb, is a rock on which many a good observer has foundered. To me that bird has always been more difficult to distinguish from the great northern diver than from the redthroated. I am at a loss to discover any difference in colour, except it be that the hind neck is somewhat grayer in the blackthroated. The blackthroated diver is a bird which varies much in size, but in that respect it is always between its two congeners.—*J. H. Gurney, jun.; April 25, 1876.*

**Attitudes of the Guillemot.**—If I am not mistaken, a question was raised some time ago in the 'Zoologist' concerning the attitude of the guillemots when they sit upon the rocks. I took note about it when I was at Flamborough Head last month, and I found that about as many of them face the sea as face the cliff—it is six of one and half-a-dozen of the other; but what is curious is that these birds sit in clumps, and all of each clump generally face the same way. I could think of nothing that guided them in it, and I suppose it is purely a case of "follow my leader." Whichever way the first guillemot which arrives on the ledge seats himself, the others follow suit.—*Id.*

**The Puffin.**—I should be glad to know if any of the readers of the 'Zoologist' have observed the power of the puffin, not only to stand erect on its feet, but also to walk on the rock with apparently the greatest ease?

When the bird stands upright its legs are at an angle of about forty-five or sixty degrees. This I can vouch for from personal observation.—*Julian G. Tuck.*

**Scarcity of the Razorbill.**—I wish to ask your readers a question about the razorbill, which is, whether they have noticed that it is getting scarcer, more particularly on the east coast. In 1871 I found it fairly common at Flamborough,—at least I should say every fourth bird about was a razorbill,—but this year I only saw a single example, though it is true that, a few days after I left, Mr. Bailey wrote me that he shot twenty. Prof. Newton tells me that their diminution is a fact he was quite aware of; but it was new to me, and I should like to know to what extent it may be the case, and if it has been noticed in the west. I have been this year to the Bass Rock, where I only saw one, and to the Fern Islands, where I did not see any, though on two former visits I have shot them there. I thought it might be a later bird to come to the rocks than the guillemot, but on inquiry of the people at Flamborough and the Fern Islands, who were most likely to know, I was told it was not so.—*J. H. Gurney, jun.*

**Common Gull.**—A flock numbering some scores frequented this coast during the winter, and was seen almost daily at low water, or slack-tide, in our little bay, feeding, among the breakers and in the shallows, on the refuse discharged from the town drains, which seemingly afford them a constant and abundant supply. It is interesting to watch their evolutions, at one moment the flock concentrating, the next dispersing, though still maintaining the circular order of flight, individuals occasionally alighting, but more frequently skimming the surface or walking on the crest of a wave, the wings upraised, petrel-like; snatching—and that almost imperceptibly—the floating object. At high-water on a calm day they may be seen reposing, all huddled together in the offing; then the “shriek of the wild sea-mew” resounds with thrilling effect. They are for the most part young birds, as described by Temminck after the first or autumnal moult. I have found the immature gulls of this species much darker than generally described and represented by authors; for instance, Macgillivray says, “After the autumnal moult the back is grayish blue, with a mixture of brown feathers;” \* Morris, that it has a “*bien poudré* appearance;” Jardine, that “the young have the upper plumage clove-brown:” Temminck, “*Ceux de l’année toutes les parties superieures d’un gris brun,*” which Yarrell repeats in as many words, saying, “First autumn, the back, wing coverts and secondaries, brownish ash.” Neither Brisson, Baillon, Buffon, Pennant nor Cuvier describes the plumage of the immature bird. Bewick says, truly enough, of the common gull, “hardly two of them are found exactly alike,” which may possibly account for one author telling us that the young bird has the back clove-brown, and another that it is grayish blue. The fact is

\* At page 578, vol. ii., for “male in winter” read “summer.”

we have still much to learn respecting the change of plumage in the gulls, though some light has been thrown on it of late. It is much to be desired that ornithologists would devote their attention to the study of one group at a time: that of the Raptores would take years, to say nothing of the Hirundines, in the partial and general migration of which and other species we are told, by Prof. Newton, little progress has been made of late years. A pair of common gulls made a nest in a neighbouring garden; it was composed of sticks and stalks, on which the female sat, but no eggs were laid. One of the birds having absented itself was found at its former owner's.—*Henry Hadfield; April 5, 1876.*

**Ivory Gull, &c.**—In the 'Zoologist' for November last (S. S. 4689) I recorded the occurrence of an adult ivory gull in Filey Bay during the month of August. Not long ago I was speaking about it to Mr. J. H. Gurney, jun., who told me that he knew of more than one instance in which albinos of other species had been taken for the true ivory gull. When at Filey, on the 3rd instant, I made further inquiries of Mr. Brown, and was shown a photograph of the specimen, taken after it was mounted, which leaves no doubt whatever in my mind as to the species. When recently shot; Mr. Brown tells me, there was a beautiful orange-coloured blush on the plumage. It is now in the possession of the gentleman who shot it—Mr. T. M. Edwards, 1, Arboretum Square, Derby. Mr. Brown showed me what he and I both believe to be an adult male laughing gull (*Larus atricilla*), in full breeding dress. It was shot near Filey (about three miles inland) during the very rough weather which occurred about the middle of March. It exactly corresponds with the figure of the laughing gull in Mr. Morris's 'British Birds,' having a head of a dull blue-black—just the colour of the back of a *Larus marinus*. The bill and tarsi had been painted; the latter struck me as being very long. Only one similar specimen has ever passed through Mr. Brown's hands, and he knows the familiar brownheaded gull in every stage of plumage. From Filey I walked on to Scarborough for the purpose of observing the herring gulls at their breeding-places, and was much pleased at seeing a considerable number of these beautiful birds. Altogether I should say there are from forty-five to fifty pairs: I was able to count above sixty individuals resting on the water at one time. It is said that the lesser blackback breeds here also, but I did not notice a single one. The herring gulls were by no means very shy, so I had a good opportunity of watching them; one noble fellow, especially, with a head and neck like newly-fallen snow, kept passing me within easy gunshot. Their cry, though perhaps unmusical in itself, seems to be in perfect harmony with the surrounding scenery. I wish those whose efforts procured the passing of the Sea Birds Act could have been there to see the results of their labours.—*Julian G. Tuck; April 7, 1876.*



**Blue Lumpfish at Penzance.**—The blue lumpfish (*Cyclopterus lumpus*, female) occurred, in two specimens, here last night. The peculiarity worth noting is that these fish were—as was also the last of the same sort which I had about three weeks since—taken in mackerel drift-nets, fishing at surface in deep water.—*Thomas Cornish; Penzance, April 27, 1876.*

**Torpedo near Penzance.**—I have received from a trawler a specimen of the electric ray (*Torpedo*). The trawler from whom I had it refused to sell it with the liver in it, preferring to keep that part himself as a specific for rheumatism.—*Id.; May 18, 1876.*

**Large Halibut.**—Messrs. Parker Bros., fish-market, have exhibited this week the largest halibut ever seen in the Eastern Counties, weighing upwards of three hundred pounds, and measuring over seven feet in length.—*'Norfolk Chronicle,' April 29, 1876.*

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**Hatching Eggs of *Limnæus pereger*.**—April 29, 1876. I noticed many groups of eggs of *Limnæus pereger* deposited in various parts of a small aquarium (one foot diameter and fourteen inches deep), some on the glass, others on leaves of *Valisneria spiralis*, each group consisting of from sixty to one hundred eggs, each egg forming a little sphere, about one-thirty-secondth part of an inch in diameter, with the embryo on one side near the circumference. The only movement observed in the embryo was a slow rotation from right to left, or in the direction of the earth's diurnal rotation upon its axis.

May 3. The movements of the little mollusks within the eggs were various and continuous—some revolving, some alternating. The two black eyes are very distinct under a microscope-power of about 100-linear; pulsations of the heart very distinct and regularly performed in each second of time.

May 6. Shells of the mollusks and the animals appear more granular; pulsations still seen through their shells. Mantle round margin of mouth of shell distinct; horns enlarging, showing granular substance in the inner base at centre; animal frequently moving and turning its shell, as the adult creatures do, apparently holding on by its foot to the circumference of the egg-shell.

May 8. The spiral form of shell is distinctly seen to-day; the movements of the mouth are obvious. The animal gradually enlarges and encroaches upon the inner area of its egg.

May 10. The little mollusks are hatched and are leaving their egg-shells and creeping upon the sides of the aquarium: their little mouths are continually in action, lapping the young *Confervæ* from the glass reservoir: they have formed an additional calcareous layer at the mouth of their shells.

May 11. The young mollusks have all left the eggs, and some have

journeyed five or six inches in distance from their former position.—*W. B. Clarke*; 9, *Marine Terrace, North Shields*.

**Royal Visit to the "Zoo."**—The Prince and Princess of Wales, with their children, the Princes Albert Victor and George, Princesses Louise Victoria, Victoria Alexandra, and Maud; the Duke of Edinburgh, the Duke of Connaught, Prince Ernest Augustus and Princesses Frederika and Mary of Hanover, have visited the Zoological Society's Gardens, Regent's Park, to see the Indian collection of animals and birds lately brought to England by the Prince of Wales. After visiting the lion-house, the Royal party walked to the Indian tent to look at the animals there deposited for a time.

The Secretary, Mr. Sclater, with his usual courtesy, has sent me the subjoined list of the Indian animals.—*Edward Newman*.

REPORT ON THE INDIAN ANIMALS DEPOSITED IN THE SOCIETY'S GARDENS  
BY H.R.H. THE PRINCE OF WALES, MAY, 1876.

*Sucklers*.—Two green monkeys, two Rhesus monkeys, five tigers, seven leopards, cheetah, one viverrine cat, one Indian civet, four tailless dogs, one bull-dog, three Tibetan mastiffs, two white dogs, two Indian wild dogs, one Himalayan bear, one sloth bear, four Indian elephants, six domestic sheep, two Thar goats, four shawl goats, eight Indian antelopes, two zebus, two spotted porcine deer, three axis deer, two musk deer, one domestic ass.

*Birds*—One graywinged blackbird, two wedgetailed pigeons, five domestic pigeons, eight Surat doves, one black francolin, two hill francolins, four Chukar partridges, fifteen Impeyan pheasants, twenty-one Cheer pheasants, two Pucras pheasants, four whitecrested kaleeges, three Bankiva jungle-fowl, ten horned tragopans, five Indian pea-fowl, three ostriches.

The whole collection contains sixty-seven specimens of mammals and eighty-six of birds, referable to about thirty species, not including domestic varieties. Of these the most interesting in a scientific point of view, are—

1. A pair of the Thar goats (*Capra iemlaica*), from the higher Himalayan ranges. A male of this fine species of wild goat was presented to the Society in 1852, by Capt. Townley Parker, and is correctly figured in Wolf and Sclater's 'Zoological Sketches,' vol. i., pl. 25, but no example of it has been since received.

2. Two examples of the Laghuna, or lesser porcine deer (*Cervus minor*), of Hodgson, from the Terai of Nepal. Of this form of deer, which appears to be a valid species intermediate between the axis and the hog-deer, no previous specimens have reached this country.

3. Two male musk-deer (*Moschus moschiferus*), from the Himalayas. The Society have previously had but one female of this delicate animal, presented by Sir F. R. Pollock, in 1869.—*P. L. Sclater*.

## Proceedings of Scientific Societies.

### ZOOLOGICAL SOCIETY OF LONDON.

May 2, 1876.—ROBERT HUDSON, Esq., F.R.S., Vice-President, in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during April, 1876, and called particular attention to a collection of Angolan animals, presented to the Society by Lieut. V. R. Cameron, the celebrated African traveller. Lieut. Cameron had also brought with him two chestnut-backed colies from the River Daude, presented to the Society by Mr. Henry C. Tait. Two young cassowaries, from Duke of York Island, presented by the Rev. George Brown, had also been received. Some other birds sent home by Mr. Brown had died on the passage.

Mr. G. Dawson Rowley exhibited and made remarks on a specimen of *Machæirhynchus nigripectus*, from New Guinea, believed to be the first example of this rare bird which had reached this country.

Extracts were read from several letters received from Dr. George Bennett, giving some account of the proceedings of Mr. L. M. D'Albertis, and of his recent expedition up the Fly River in December, 1875.

Mr. J. H. Gurney, jun., exhibited and made remarks on an example of the lesser whitefronted goose, from Egypt, being the first record of the occurrence of this species in Africa.

Mr. Osbert Salvin exhibited and made remarks on a piece of a trunk of a pine from Guatemala, which had been perforated by a woodpecker (*Melanerpes formicivorus*), for the purpose of storing acorns.

Mr. A. Grote exhibited and made remarks on Col. Gordon's drawing of *Ovis Polii*, which was the original of the figure given in the Society's 'Proceedings' for 1874.

Mr. George Busk read a memoir on the Ancient or Quaternary Fauna of Gibraltar, as exemplified in the mammalian remains of the ossiferous breccia, which occurs in the caves and fissures recently explored in different parts of the Rock. Mr. Busk, after a preliminary description of the geological features of the Rock and its fossiliferous caverns and fissures, treated specially of the various bones of the bear, cat, horse, rhinoceros, stag, ibex, and other animals, of which the remains occur there, and proceeded to refer them to the species to which they seemed to belong.

Prof. A. H. Garrod read a paper on the anatomy of the colies (*Colius*), which he regarded as belonging to the piciform group of the division of anomalognatous birds, according to his arrangement, but constituting an independent family.

A communication was read from Mr. E. L. Layard, containing the description of a new blackbird (*Turdus*), from Taviuni, one of the Fiji Islands.

The Rev. Canon Tristram read a note on the occurrence of the roebuck in Palestine.—*P. L. Sclater.*

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ENTOMOLOGICAL SOCIETY OF LONDON.

April 5, 1876.—Prof. J. O. WESTWOOD, M.A., F.L.S., &c., 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. 167; presented by the Society. ‘Exotic Butterflies,’ by the Author, W. C. Hewitson, Esq. ‘The Naturalist; Journal of the West Riding Consolidated Naturalists’ Society,’ vol. i., nos. 8 and 9 (for March and April); by the Society. ‘The Zoologist’ for April; by the Editor. ‘Newman’s Entomologist’ for April; by the Editor. ‘The Entomologist’s Monthly Magazine’ for April; by the Editors. ‘Psyche,’ Organ of the Cambridge (Mass.) Entomological Club, no. 22; by the Editor. ‘Annual Reports of the Trustees of the Museum of Comparative Zoology at Harvard College, Cambridge,’ for 1874 and 1875; by the Trustees. ‘Bulletin of the Buffalo Society of Natural Sciences,’ vol. iii., no. 1; by the Society. ‘The Canadian Entomologist,’ vol. viii., no. 1; by the Editor. ‘Traité Élémentaire d’Entomologie,’ tome ii., fasc. i. (Orthoptères et Neuroptères); by the Author, Maurice Girard. ‘Sur le Prosopistoma;’ by the Author, M. Emile Joly. ‘L’Abeille,’ tome xii., nos. 168, 169; by the Editor. ‘Bulletin de la Société d’Histoire Naturelle de Toulouse,’ 1875, fasc. 4; by the Society. ‘Bulletino della Società Entomologica Italiana,’ 1875, trimestre 4; by the Society. ‘Tijdschrift voor Entomologie—Achtende Deel,’ 3e & 4e Aflevering; ‘Repertorium der Acht Eerste Jaargangen,’ 1858—1865; by E. A. de Roo van Westmaas. ‘Repertorium betreffende den Negenden tot en met den Zestienden Jaargang,’ 1866—1873; by F. M. van der Wulp. ‘Ueber das Auftreten der Wanderheuschrecke am Ufer des Bielersee’s,’ von Albert Müller, in Basel; by the Author. ‘Gita Entomologica all’ Isola di Pantellaria di Enrico Ragusa;’ by the Author. ‘Mission Scientifique au Mexique et dans l’Amérique Centrale—Sixième Partie, Etudes sur les Orthoptères,’ par M. Henri de Saussure; by the Author. ‘Petites Nouvelles Entomologiques,’ nos. 143 and 144; ‘Monographic Revision and Synopsis of the Trichoptera of the European Fauna,’ part iv.; by the Author, Robert M’Lachlan, Esq.

‘Historical Sketch of the Generic Names proposed for Butterflies;’ ‘The Tertiary Physopoda of Colorado;’ ‘Notice of the Butterflies and Orthoptera collected by Mr. George M. Dawson, as Naturalist of the B. N. A. Commission;’ ‘Synonymic List of the Butterflies of North America, North of Mexico (Nymphales);’ ‘Entomological Notes,’ iii. and iv.; ‘Note sur l’Œuf

et le jeune age de la chenille d'Æneis Aello; 'The Distribution of the Insects in New Hampshire,' presented by the Author, Samuel H. Scudder.

'Recensio Orthopterorum: Revue Critique des Orthoptères décrits, par Linné, De Geer et Thunberg,' par C. Stål, 1 & 2; 'Genera Tingitidarum Europæ,' disposuit C. Stål; presented by the Author.

'Ofversigt af Kongl. Vetenskaps-Akademiens Förhandlingar:—'Genera Coreidarum Europæ,' disposuit C. Stål; 'Genera Lygæidarum Europæ,' disposuit C. Stål; 'Genera Reduviidarum Europæ,' disposuit C. Stål; 'Orthoptera quaedam africana,' descripsit C. Stål; 'Genera Pentatomidarum Europæ,' disposuit C. Stål; 'Orthoptera nova,' descripsit C. Stål; 'Entomologiska anteckningar,' af Carl Cederström; 'Coleoptera Caffrariæ, annis 1838—1845, a J. A. Wahlberg collecta: *Curculionides*,' descripsit Ol. Im. Fahraeus, Div. 1—Adelognathi (*Lacord.*); Div. 2—Phanerognathi (*Lacord.*); Fam. Brenthidæ, Anthribidæ et Bruchidæ, descriptæ a Ol. Im. Fahraeus; Fam. Scolytidæ, Paussidæ, Bostrichidæ et Cioidæ, descriptæ a Ol. Im. Fahraeus; Longicornia, descripsit Ol. Im. Fahraeus, nos. 1 & 2. 'Oedemopsis Rogenhoferi, Tschek, funnen på Hunneberg i Westergötland,' af A. E. Holmgren; 'Insekter från Nordgrönland, samlade af Prof. A. E. Nordenskiöld ar 1870,' Granskade och beskrifna af A. E. Holmgren; 'Dispositio methodica Exochorum Scandinaviæ,' Auctore Aug. Emil. Holmgren; 'Skandinaviens och Finlands Acandthiider beskrifne af O. M. Reuter; 'Acanthiidæ Americanæ,' descriptæ ab O. M. Reuter; 'Skandinaviens och Finlands, Aradider, Reduviider, & Nabider, beskrifne af O. M. Reuter; 'Nabidæ novæ et minus cognitæ,' Bidrag till Nabidernas kändedom af O. M. Reuter; 'Nya Svenska Capsider,' antechnade af O. M. Reuter; 'Förteckning öfver Svenska Podurider af Tycho Tullberg; 'Bidrag till kändedom af Fjärilfaunan på St. Barthelemy,' af H. D. J. Wallengren; 'Skandinaviens Pyralider och Choreutider,' beskrifne af H. D. J. Wallengren; 'Bidrag till Södra Afrikas Fjärilfauna,' af H. D. J. Wallengren; presented by the Royal Swedish Academy of Sciences at Stockholm.

'Bihang till K. Svenska Vetenskaps-Akademiens Förhandlingar:—'Recherches sur le système des Mantides,' par C. Stål; 'Recherches sur le système des Blattaires,' par C. Stål; 'Om de Skandinaviska arterna af Ophionidsläktet Campoplex,' af A. E. Holmgren; 'Index Specierum Noctuarum et Geometrarum in Scandinavia hucusque detectarum,' auctore H. D. J. Wallengren; presented by the Royal Swedish Academy of Sciences at Stockholm.

'Kongl. Svenska Vetenskaps-Akademiens Handlingar:—'Enumeratio Hemipterorum,' Bidrag till en Förteckning öfver alla hittills kända Hemiptera jemte systematiska Meddelanden,' af C. Stål, 4; 'Sveriges Podurider,' beskrifna af Tycho Tullberg; presented by the Royal Swedish Academy of Sciences at Stockholm.

*Election of Members.*

The following gentlemen were balloted for and elected Ordinary Members of the Society:—Joseph William Douglas, Esq., of Lee, Kent; Edward C. Rye, Esq., of Parkfield, Putney; Charles Fenn, Esq., of Lee, Kent; George Lewis, Esq., of Queen's Road, Putney; John Dunning Kay, Esq., of Leeds; and William Charles Copperthwaite, Esq., of the Lodge, Malton. Also, Benjamin A. Bower, Esq., of Lee, Kent, was balloted for and elected a Subscriber.

*Exhibitions, &c.*

Mr. F. Bond exhibited a specimen of *Xylina lambda*, taken near Erith, in September last, by Mr. W. Marshall, being the fifth instance of its having been taken in Britain. Also *Ebulea Stachydalis*, taken by himself at Kingsbury, Middlesex, in June, 1862.

Mr. Champion exhibited a specimen of *Ægialia rufa*, *Fab.*, taken by Mr. Sidebotham, of Bowdon, near Southport, and he brought specimens of *Psammodyus sulcicollis* sent by Mr. Sidebotham for distribution amongst the Members.

The President made some observations respecting the habits of the common guat, in continuation of his remarks at the meeting of 4th November, 1872. [See 'Proceedings,' 1872, p. xxxi.] Large numbers of females had again appeared in his house at Oxford, not a single male having been observed; and he believed that they had hybernated in the house, appearing during the first warm days of spring. He also remarked that Dr. Leconte's valuable collection of Coleoptera had been presented to the University at Cambridge, Massachusetts.

Sir Sidney S. Saunders exhibited two examples of *Stylops Kirbii*, taken on the wing by him at Hampstead, in the forenoon of the previous day. He had found eighteen males in all: one *Andrena* contained three undeveloped males. Mr. Enock followed up this exhibition by an account of his own captures of male *Stylops* at the same time. He captured eleven on the wing, and one *Andrena* was taken with four individuals.

Mr. Eaton stated that he was preparing a Supplement (dealing with the limitation of the genera) to his "Monograph on the Ephemeriðæ" (Trans. Ent. Soc., 1871). A considerable amount of new material had been most kindly submitted to him by Mr. Robert M'Lachlan, of Lewisham, and M. Herman Albarda, of Leeuwarden, comprising specimens from almost all parts of the world. Amongst the most interesting were some specimens in fluid from South America, and a collection from Sumatra. From the Amazonian collection in spirits, it would appear that the deficiency in legs in *Campsurus* and some of its allies was due to their being shed with the pupa-skin when the insect obtained well-developed wings. In some forms all of the legs were then cast off by the female (this was apparently the case

with *Euthyplocia* also); in others the anterior pair of legs was retained by the female, as it was seemingly by all males. The separation of the legs cast off takes place between the femur and the trochanter. The posterior legs would be useless to them, as on attaining the complete winged stage of development they retain the subimaginal pellicle, and live but few hours in the air. From Lahat there were subimagines of a *Cronicus*, a genus known previously only from a fossil in amber from Prussia. Several new forms, whose existence was expected from analogy, were in these collections. The whole family seems to consist of associated series of genera. In every series the forms differ from one another in the number of setæ or wings; while in tarsi and neurulation and eyes they are very much alike. Such are a form distinguishable from *Lachlania* by the female possessing three long setæ instead of two only; another differing from *Potamanthus* (restricted) in the middle seta being extremely short and minute; and another which resembled *Siphylurus*, excepting in the possession of a long intermediate seta instead of a minute rudiment of one. There were many new genera allied to the typical *Leptophlebia*, in addition to the series of species associated with it in the Monograph as sections, which will now be separated as genera from it.

The President exhibited some drawings which he had prepared of insects belonging to the Dipterous genus *Systropus*, of which he intended shortly to publish remarks on their transformations.

The Rev. R. P. Murray stated that he was preparing a *resumé* of all the species of Japanese butterflies hitherto noticed, and that he would be grateful to any entomologist who could assist him with the loan of specimens.

Mr. Smith made some remarks on the distribution of some genera of Hymenopterous insects from New Zealand, a collection of which had been placed in his hands by Mr. C. M. Wakefield. He was followed by Mr. M'Lachlan, who remarked on the gradual extinction of the endemic Fauna of New Zealand, although introduced forms thrive there in a remarkable manner.

Mr. M'Lachlan exhibited a series of a remarkable Trichopterous insect received from its discoverer, Fraulein Marie von Chauvin, of Freiburg, in Breisgau, described by Stein as *Anomalopteryx Chauviniana*. In the male the anterior wings were lanceolate and the posterior much abbreviated, whereas those of the female were normal, excepting that the posterior wings were smaller than usual. He also exhibited apterous females of *Acentropus niveus* received from Mr. Ritsema, of Leyden; and a slide with a full-grown female of the root-form of *Phylloxera vastatrix*, recently obtained by him (with many others) from a vinery near London that was greatly infested with the insect.

*New Part of 'Transactions.'*

The fifth Part of the 'Transactions' for 1875 (containing the title-page, index, &c.) was on the table.

May 3, 1876.—Sir SIDNEY SMITH SAUNDERS, C.M.G., Vice-President, in the chair.

*Additions to the Library.*

The following donations were announced, and thanks voted to the donors:—‘Proceedings of the Scientific Meetings of the Zoological Society,’ 1875, part 4; presented by the Society. ‘The Naturalist: Journal of the West Riding Consolidated Naturalists’ Society,’ no. x., for May; by the Society. ‘The Zoologist’ for May; by the Editor. ‘Newman’s Entomologist’ for May; by the Editor. ‘The Entomologist’s Monthly Magazine’ for May; by the Editors. ‘Nature,’ nos. 336 to 339, for April; by the Publishers. ‘The American Naturalist,’ vol. x., nos. 3 and 4; by the Editor. ‘L’Abeille,’ nos. 170 and 171; by the Editor. ‘Bulletin de la Société Impériale des Naturalistes de Moscou,’ 1875, no. 3; by the Society. ‘Deutsche Entomologische Zeitschrift,’ 1875, Heft. ii., and 1876, Heft. i.; by the Society. ‘A Series of Papers on Tenthredinidæ and other Hymenoptera, extracted from the Proceedings of the Natural History Society of Glasgow,’ by the Author, Peter Cameron, jun. ‘Stettiner Entomologische Zeitung,’ 1876, 1–6; by the Berlin Society.

By purchase:—‘Entomologischer Kalender für Deutschland, Oesterreich und die Schweiz auf das Jahr 1876.’ ‘Opuscula Entomologica edidit C. G. Thomson,’ fasciculus septimus.

*Election of a Member.*

M. Jules Lichtenstein, of Montpellier, was balloted for and elected a Foreign Member.

*Exhibitions, &c.*

The Rev. J. Hellins sent for exhibition various British Lepidoptera recently submitted to M. Guenée for his opinion and determination. The collection included a dark variety of *Acronycta myricæ* from Mr. Birchall; certain *Acidalia*, sent by Mr. Hellins and Mr. G. F. Mathew, apparently to be referred to *A. mancuniata*; several extraordinary aberrations referred to *Melanippe rivata*, *Oporabia*, sp.?, *Coremia ferrugata*, &c., from Mr. Dale and Mr. Mathew; an example of *Polia Chi*, *var. olivacea*, from Major Hutchinson; several *Eupithecia*, from Dr. Buchanan White, including the *var. oxydata* of *E. subfulvata*; and an insect which Dr. White proposed to name *septentrionata*, not known to M. Guenée. The most important of all was a *Noctua* bearing some resemblance to *Xanthia circellaris* (*ferruginea*), not known to M. Guenée, taken at Queenstown, flying over bramble-blossoms, in July or August, 1872, by Mr. Mathew. Concerning this insect it was remarked that it had been shown to Dr. Staudinger (now in London) by M. Guenée, and it was also unknown to him as European.



Mr. Distant exhibited a series of six examples of the butterfly *Ithomia Tutia*, *Hewitson*, from Costa Rica. These had been selected to show the very considerable variation in markings to which the species is evidently liable.

Mr. Distant also communicated remarks on the Rhopalocera of Costa Rica, with Descriptions of Species not included in the Catalogue of Messrs. Butler and Druce, published in the 'Proceedings of the Zoological Society' for the year 1874.

Mr. Douglas exhibited specimens of the Corozo nut (*Phytelephas macrocarpa*), the vegetable ivory of commerce, of which the interiors were entirely eaten away by a species of *Caryoborus* (one of the Bruchides). A specimen of the beetle was shown with nuts, from the London Docks, which had been recently imported from Guyaquil.

The Secretary read a letter he had received from the Foreign Office Department, enclosing a despatch from Her Majesty's Minister at Madrid relative to the steps taken to check the ravages of the locust in Spain. It appeared that considerable apprehension had been felt in many parts of Spain that the crops of various kinds would suffer greatly this year from the locust; and the Cortes had already voted a large sum to enable the Government to take measures to prevent this calamity, and by a circular addressed to the Provincial Governors by the Minister of 'Fomento,' published in the Official Gazette, they were directed to make use of the military forces stationed within their respective districts, to aid the rural population in this object. It was stated that thirteen provinces were threatened with this plague.—*F. G.*

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### Books Received.

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*Explorations of the Colorado River of the West and its Tributaries in 1869, 1870, 1871 and 1872, under the Direction of the Secretary of the Smithsonian Institution.* Washington. 1875.

The work contains 285 pages and 80 whole-page illustrations, principally representing scenery, in the Far West of North America, of a very striking character: some represent Indians as in life, or as we occasionally see them in photographs: these have no resemblance to the Red Indian as fiction and—I regret to add—as philanthropy would paint him.

*A History of British Birds, by the late William Yarrell, V.-P.L.S., F.Z.S.*  
Fourth Edition, revised by Alfred Newton, F.R.S., &c. Part IX.

This work still progresses very slowly. Part IX. contains the buntings, the three European species lately identified by Mr. Gould as inhabitants, or

rather accidental visitors, of Britain, being incorporated. These have already been noticed in the 'Zoologist,' but I will recapitulate them here :—

1. *Emberiza rustica*, the Rustic Bunting, caught at Brighton on the 23rd of October, 1867, and now in Mr. Monk's collection.

2. *Emberiza pusilla*, the Little Bunting, also taken at Brighton, on the 2nd of November, 1864, and also in the possession of Mr. Monk.

3. *Emberiza melanocephala*, the Blackheaded Bunting, shot on the Race-course at Brighton, November 3rd, 1868. I think Prof. Newton has committed a grave error in assigning the name of "Blackheaded Bunting" to a new British species, *Emberiza schœniclus* being so universally known by that name.

*Our Summer Migrants: an Account of the Migratory Birds which pass the Summer in the British Islands.* By J. E. Harting, F.L.S., F.Z.S. Illustrated from Designs by Thomas Bewick. London: Bickers and Son, 1, Leicester Square. 1875. 336 pp. demy 8vo.

This book is very useful and interesting; the woodcuts (servile copies of Bewick) are generally excellent, and I am quite unable to explain the accurate manner in which they are reproduced. The process, whatever it may be, by which these figures are produced, has the disadvantage of perpetuating error as well as truth; thus the short tail of the redbacked shrike reappears in all its deformity. Take the volume altogether it is a most acceptable addition to our knowledge of British Ornithology, and a very pretty book for the drawing-room table.

*Annual Report of the Board of Regents of the Smithsonian Institution, showing the Operations, Expenditure, and Condition of the Institution for 1874.* Washington. 1875. 416 pp. demy 8vo.

This volume contains an immense amount of matter rather useful than ornamental; amongst other papers I would invite especial attention to a translation of Arthur Morin's Essay on "Warming and Ventilation," which originally appeared in Paris. We English rather pride ourselves on loving comfort, and in support of these ideas we attempt to show that foreigners, and especially Frenchmen, have no equivalent for the word: *consolation, soulagement, assistance, secours*—the only translations I recollect in my old French dictionary—certainly fail to convey my idea of a well-ventilated and well-warmed apartment, the attainment of which is within reach of a Frenchman, but not of an Englishman. We construct churches, chapels, theatres, and indeed private houses, regardless of expense, but utterly regardless also of comfort; in these respects our insular prejudice prevents our copying anything but fashions from the French, and hence we are debarred the advantage of profiting by their example: so we are condemned to live in foul air, thorough draughts, stifling heats, piercing cold, and sea-coal

smoke, as may be most profitable or least troublesome to the architect, to whom the name of Arthur Morin is unknown, or simply employed as expressive of contempt. Committees and estimates, again, are insuperable obstacles to economy and "comfort."

*Ornithology of the Straits of Gibraltar.* By Lieut.-Colonel L. Howard L. Irby, F.L.S. London: R. H. Porter, Tenterden Street. 1875. Demy 8vo, 230 pp. letterpress.

Colonel Irby, before attaining that title, was a correspondent of the 'Zoologist,' and the volumes for 1851, 1852, 1853 and 1854 were enriched by many of his contributions. I remember being extremely pleased with his "Habits of the Green Sandpiper," and his "List of Birds observed in the Crimea in 1851." It is a most sincere pleasure to see him again in print, and evincing the same interest in Natural History which he exhibited a quarter of a century ago, and to know that his eye has not grown dim nor his natural power of observation in any respect abated.

The scene of Colonel Irby's recent observations has long been classical ground to me, and a translation of a paper on migrants observed crossing the Straits was one of my earliest ventures in Ornithology. It was not without regret that I suffered the loss of Colonel Irby's instructive contributions for so long a period, or that I saw them in connection with technical matter in a journal where they are less calculated to diffuse general instruction; still I fear that many prefer the restriction of this kind of information to the extremely select circle of readers who have no doubt enjoyed it more thoroughly from the elimination of more popular Natural History. Be this as it may, Colonel Irby's papers, wherever published, are always instructive and always acceptable.

The volume is accompanied by excellent maps of both the European and African sides of the Straits—maps that enable us to mark the locality where each species has been seen. I observe Colonel Irby notices the very general, indeed the almost universal, occurrence of migration among birds. He observes, "Few, indeed hardly any, birds do not migrate or shift their ground to some extent. I can name very few indeed which do not appear to move, *viz.*, griffon vulture, imperial eagle, eagle owl, blue thrush, and all the woodpeckers, tree creeper, blackheaded warbler, Dartford warbler, crested lark, chough, raven, magpie, redlegged and Barbary partridges, and Andalusian quail. Generally speaking it seems to me that in the vernal migration the males are the first to arrive, as with the wheatears, nightingales, night herons, bee-eaters; but this is a thing which requires confirmation. Some species, as the Neophron, pass in pairs."—P. 13.

Nothing is more commendable or more observable than the caution with which Colonel Irby receives information from other sources. Every fact he records has been tested by all the means within his reach before he

gives it to the public; the feeling of assured confidence in every statement he has made adds not only to the interest but to the value of the book.

*Aquarium Notes: the Octopus and the Devil-fish of Fiction and of Fact.*

By Henry Lee, F.L.S., Naturalist to the Brighton Aquarium. London: Chapman and Hall, 193, Piccadilly. 1875. Post 8vo, 114 pp. letterpress and several illustrations.

A good subject for a book and well timed, for the octopus is a nine-days' wonder that must lose its attraction. It is well written, but I cannot say much in favour of the illustrations; the octopus, for instance, looks as though it had a short clay-pipe stuck in his hat; the figures of *Sepia Sepiola* and *Loligo* are all conventional, and not in attitudes which those creatures could possibly assume, and that of the *Poulpe colossal* of De Montfort has been reproduced and repeated *usque ad nauseam*. However, Mr. Lee—having had the rare, the almost unique, advantage of seeing the animals he describes—is not necessitated to repeat what he reads with such unvarying uniformity as a mere compiler. I hope to see other batches of these 'Aquarium Notes,' and also hope to see the matter derived from personal observation.

*Abstracts of the Results of a Study of the Genera Geomys and Thomomys, and on the Habits of Geomys troza.* By Dr. Elliott Coues, of the United States Army. Washington. 1875.

*Some Account, Critical, Descriptive and Historical, of Zapus Hudsonius, and on the Breeding Habits, Nest and Eggs of the Whitetailed Ptarmigan.* By Dr. Elliott Coues, U. S. Army. Washington. 1875.

*The American Journal of Microscopy.* Nos. 1, 2 and 3. New York. 1876.

*Notes on the Yucca Borer (Megathymus Yuccæ, Walk.).* By Charles V. Riley, M.A., Ph.D. St. Louis. 1876.

From the moment I received this admirable treatise I have regretted the apparent impracticability of transferring it bodily to the pages of the 'Zoologist' or 'Entomologist.'

*The Geographical Distribution of Animals, with a Study of the Relations of Living and Extinct Faunas, as elucidating the past Changes of the Earth's Surface.* By Alfred Russel Wallace. In Two Volumes, demy 8vo, with Maps and Illustrations; Vol. I., 503 pp., Two Maps and Thirteen Plates; Vol. II., 607 pp., Two Maps and Seven Plates. 1876.

These volumes exhibit a vast amount of research and study, and sooner or later must constitute an essential part of the library of every working zoologist.

EDWARD NEWMAN.

## EDWARD NEWMAN

BORN MAY 13, 1801.

DIED JUNE 12, 1876.

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It is my sorrowful duty to record the death, after a short illness, of him who founded this Journal, and conducted it for a period of nearly thirty-four years. Not only those who knew him personally, but that wide circle who knew him as a correspondent or through his writings, will feel a shock that one so long beloved has passed away, and will mourn him as a dear friend. As ready as he was able to impart information on every branch of Natural History, he will be regretted by many who sought—and as certainly obtained as sought—his kindly help.

His labours are finished, and his earthly career of usefulness is completed; but his memory will remain bright in the minds of those who had the benefit of his friendship.

### Notices of New Books.

*Transactions of the Norfolk and Norwich Naturalists' Society.*  
1875-6. Vol. II., Part 2. Norwich: Fletcher & Son.

WE have, we believe, from time to time drawn the attention of our readers to the published reports of this exceedingly energetic and well-managed Society. The 'Transactions' now under notice are eminently creditable to any local Natural-History Society; and it is to be regretted that we cannot point to more so-called scientific clubs whose publications are equally meritorious. We are sorry to remind our readers—although we need scarcely do so—that the majority of the Natural-History Societies of Great Britain publish neither Reports nor Transactions, although the gathering and recording of observations is really their avowed object.

The Norfolk and Norwich Naturalists' Society has its headquarters at Norwich: it consists of President, a dozen Vice-Presidents, a full complement of officers, amongst whom we observe names of high standing in the scientific world, and about one hundred and fifty members. Amongst the objects of the Society we may name two very important ones, *viz.*:—

“The protection, by its influence with landowners and others, of indigenous species requiring protection, and the circulation of information which may dispel prejudices leading to their destruction.

“The discouragement of the practice of destroying the rarer species of birds that occasionally visit the county, and of exterminating rare plants in their native localities.”

If this Society had no other object than these it ought to have every support and good wish for its welfare from those who do not wish to see our rarities disappear, and some of the commoner objects in both our Fauna and Flora become objects of search, especially birds and ferns, both of which, in this metropolitan district, bid fair shortly to become extinct.

The first report in these 'Transactions' is that of the Treasurer, whom we would congratulate upon having so good a balance in hand as £21 odd: this, we may suggest to some other like officers, is a slightly exceptional thing; generally the balance is on the other side.

After a goodly array of books and publications received during the period over which the report extends, is the President's Address: this is full of good practical writing, consisting of a *resumé* of the year's work. He begins with an apology in the most approved style, but soon the reader sees how needless this is. Next he congratulates the Society upon its flourishing condition, in which we join him, and then gives a list of work done at the monthly meetings. In looking over this we find the weakest point in the Society; for out of its hundred and fifty members only a dozen have contributed anything in the way of papers; of these six are devoted to Zoology, three to Botany, and three to Meteorological observations. This latter subject is almost universally neglected by Natural-History Societies, although so important to all. How otherwise than by constant and accurate observations, and comparison of notes, are we to acquire the golden key—for such there must be—which will unlock those laws which govern the state of the atmosphere?

This question of weather brings us to another important part of the President's Address, that of the four field excursions, at all of which—to quote the President's own words—

“Excepting on one occasion, the principal element of enjoyment was present, I mean fine weather; but these excursions, although successful in many points of view, were not productive of much fruit, looking at them in a scientific light, as, with the exception of Mr. Plowright's list of the Fungi found by him at Scoulton, not a single specimen, animal or vegetable, has been exhibited, or even a notice of anything observed at any one of the four placed before the Society at its usual meetings.”

The President then goes on to say:—

“It is much to be regretted we do not follow the example of some other societies, or in fact pursue the course proposed when this Society was first formed. Let a day and place be fixed for the excursion, and each when there follow his own bent; at the close of the day let each individual produce the result of his labours: this might perhaps induce other members to become active naturalists, but at present I must confess it seems to me that our trips have degenerated into a series of very pleasant picnics. I hope you will not suppose that I would discourage these excursions; far from it, for while we can induce ladies and gentlemen to attend these and our monthly meetings, there is a chance of awakening an ardent love for some branch of Natural History, which may, perhaps, one day be useful to the Society.”

This is a bugbear with many Field Clubs: one valuable exception we know of,—that of Liverpool,—where at each field meeting there is a judicious distribution of prizes of small value, say from half-a-crown to half-a-guinea or upwards: these are given in all subjects for the greatest number of species in any particular branch of Natural History collected and *identified*; again, other prizes are given at the end of each season for other work, such as monographs upon any especial group: only care should be taken not to allow any particular branch of Natural History to predominate, as it has at Liverpool, where the Club has degenerated almost into a Botanical Society. If the Norwich Society judiciously expended some of the Treasurer's balance of £21 in this manner we are sure an impetus would be given to the field meetings, which would be highly beneficial to the Society, not only in creating a greater taste for the gentle science of Biology, but also, from the addition of new members, financially.

Amongst the papers read before the meetings of this Society is one by the Secretary on the Cetacea inhabiting, or occurring in, the British Seas. We agree with him when he speaks of "the difficulty attending the study of the order, consequent upon the unwieldy size of many of the species, and the great rarity of others," and we are sure that any observer who lives in an inland city, and makes the study of whales his *forte*, is equal to almost any undertaking. Mr. Southwell follows later in the year with another paper: this time he attacks the obscure and little-known order of Sirenia. It is a great pity that the 'Transactions,' although an important-looking stout octavo volume, were too crowded to admit of these valuable contributions in detail.

In January Mr. Geldart read a valuable paper on sea-weeds:—

"The principal points alluded to in this paper were: (1) The Dimorphism of the Fructification of the Rhodosperrms or Floridææ, and the analogy of this Dimorphism to that found in other higher orders of Cryptogams; and (2) The aggregate character of such Chlorosperrms as *Ulva*.

"The true spores and tetraspores of the Rhodosperrms were described in four different genera—*Plocamium*, *Nitophyllum*, *Ceramium*, and *Poly-siphonia*, and it was explained that the object of the two-fold fructification was not at all understood, but that it was supposed that while in the case of the true spores the descent of the species was direct, in that of the tetraspores there was an 'alternation of generations,' the germination of the tetraspores producing in the first instance a prothallus unlike either the



original parent or the second generation. In describing the Antheridia of the Rhodosperms the writer acknowledged that although he had seen them he had failed in either tracing their action himself, or in finding in any text-book a definite account of how fertilization was effected by their means.

“The pseudo analogy between the true spores and the tetraspores of Rhodosperms and the Micro- and Macro-spores of Selaginella and Isoetes was alluded to, and the probable true analogy between the tetraspore and the primary four-fold aggregation of the macros pore in Isoetes, and the development of the spores in mosses was pointed out, and it was asserted that from specimens in the writer’s possession the primary four-fold division of the cell, which forms the tetraspore Callithamnion, could be shown.

“In speaking of *Ulva* it was shown that from his own observation the writer had come to the conclusion (which he had since found published by Professor Thiselton Dyer, in Art. ‘Biology,’ Enc. Brit.) that the frond of *Ulva* must be considered as an aggregate of simple forms of *Algæ*, having a true analogue in *Volvox globator*.”

At the February meeting a gentleman wishes to put the “world arights” with a paper “On the Destruction of many Birds through the Ignorance of Gamekeepers and Gardeners.” Would it not be well for him to get some clause on the subject inserted into the next Education Act?

Our valued correspondent, Mr. J. H. Gurney, jun., next appears with an able lecture entitled “The Rambles of a Naturalist in Egypt,” of which the President gives the following summary:—

“Mr. J. H. Gurney, jun., gave a lecture, entitled ‘The Rambles of a Naturalist in Egypt,’ which was almost entirely confined to the Ornithology of the country, which he said was remarkable for the number of aquatic birds that made the Nile their home, and that to observe their nidification was the principal object of his visit last year: he stated that the number of birds identified by him was 223, a number far exceeding that observed in Algeria. He then stated the number of game birds shot by himself and friends, consisting of snipe, quail, two species of sand grouse, and ducks (but for these latter they were too late to kill many), showing that there was plenty of temptation for the sportsman as well as the naturalist, and that the snipe-shooting of the Delta was equal if not superior to the best in India. In some of the lakes the coots were in such abundance that on the water he mistook them for an island, and when they rose they looked like the smoke out of the funnel of a steamboat. Flamingos, also, were in prodigious numbers. After mentioning the names of those naturalists who had written on Egypt, he informed us that he hoped ere long to add a work of his own to those already published.

“In touching on the subject of migration, Mr. Gurney broached (to me, at least) a new theory, namely, that some of our summer migrants amongst the *Insessores* may be considered to breed in Southern Africa in winter as well as in England in the summer, and thus really may be double-brooded. He remarked that though the outlines of the Egyptian goose and the ibis on the monuments are extremely accurately drawn, the colouring was very far from natural.

“Their chief discovery was that of the lesser whitefronted goose (*Anser minutus*, Naum.) in Egypt, a bird which was formerly supposed to have been a northern species. Many writers had identified the sacred hawk with the kestrel; this Mr. Gurney thought was a mistake, he believed it was intended for the lanner falcon, an opinion which he informed us was shared by his father; this latter bird is far from common. He also stated that birds of prey abounded, and that there was an unlimited amount of food for them in the shape of countless hordes of semi-wild pigeons; and that kites and vultures (these latter popularly called Pharaoh's hens) are the sanitary police or scavengers, and for this useful but disgusting service they are very favourably looked upon; and he believed that it was sight which guided these Raptores to their food, and not scent. The sacred ibis, he informed us, contrary to the general opinion of ordinary mortals, no longer inhabited Egypt, but had gone further south. He then entered into a description of the different kinds of herons, as well as the peculiar method of catching coots on the lakes with a casting net, which bird is there more highly prized by the fishermen for the table than the wild ducks: after alluding to the raveus, Mr. Gurney finished a very interesting lecture by glancing at the Entomology of the country, which as far as he was concerned, was confined to some of the noxious insects; fleas, flies, and mosquitoes, he said, were in enormous hosts, and rendered themselves exceedingly disagreeable.”

Although we have previously (S. S. 4891) noticed this lecture, we wish particularly to call the attention of our readers to the statement above quoted—the theory that some of our summer migrants again breed in South Africa in winter, or at two periods in one year. This is a most interesting subject, which would be well worth discussing in the ‘Zoologist.’

By far the most elaborate part of the President's Address is his own article upon the Aculeate Hymenoptera of his district: those interested in this most beautiful order will find this worthy an attentive perusal.

Last, and not least in this Address, is the reference to the reading of ten unpublished letters written by good old Gilbert White of

Selborne, whom every naturalist, from boyhood upwards, has learned to respect for his quaint, simple and truthful observations. These valuable letters are given in full later in the 'Transactions,' and form a most interesting portion of them. With them is an autotype *fac-simile* of Gilbert White's handwriting and signature. This alone is worth the price of the book. The President says—

"I need not refer to their contents more than to call attention to the fact that Mr. Marsham obtained at Stratton a bird (*Tichodroma muraria*) not known to have been before observed in this country: Gilbert White's remark that Mr. Marsham would 'have the satisfaction of introducing a new bird of which future ornithologists will say—found at Stratton in Norfolk by that painful and accurate naturalist, Robert Marsham, Esq.,' after an interval of 82 years will at length be fulfilled. To Professor Bell, now the occupant of White's house, and the diligent collector of every memorial of him, we are under the great obligation of receiving copies of Marsham's letters to White, thus enabling us to complete the correspondence of the two eminent naturalists."

These letters are published with the leave of the Rev. H. P. Marsham, F.R.S., and addressed by Gilbert White to Robert Marsham, great-grandfather of the reverend donor. To read these letters brings back the boyish joys we felt when we first "devoured" a copy of White's letters. We advise all who have not read these newly unearthed letters to lose no time in doing so. Who, after the first smile at its quaintness is past, can read the following without admiration?—

"As you seem to know the *Fern-owl*, or *Churn-owl*, or *Eve-jar*; I shall send you, for your amusement, the following account of that curious, nocturnal, migratory bird. The country people here have a notion that the *Fern-owl*, which they also call *Puckeridge*, is very injurious to weanling calves by inflicting, as it strikes at them, the fatal distemper known to cow-leeches by the name of *puckeridge*. Thus does this harmless, illfated bird fall under a double imputation, which it by no means deserves;—in Italy of sucking the teats of goats, where it is called *Caprimulgus*; & with us, of communicating a deadly disorder to cattle. But the truth of the matter is, the malady above-mentioned is occasioned by a dipterous insect called the *astrus bovis*, which lays it's eggs along the backs of kine, where the maggots, when hatched, eat their way thro' the hide of the beast into it's flesh, & grow to a large size. I have just talked with a man, who says, he has been employed, more than once, in stripping calves that had dyed of the *puckeridge*: that the ail, or complaint lay along the chine, where the flesh was much swelled, & filled with purulent matter. Once myself I

saw a large, rough maggot of this sort squeezed out of the back of a cow. An intelligent friend informs me, that the disease along the chines of calves, or rather the maggots that cause them, are called by the graziers in Cheshire *worry brees*, & a single one *worry bree*. No doubt they mean a *breeze*, or *breeze*, the name for the *gad-fly*, or *astrus*, the parent of these maggots, which lays it's eggs along the backs of kine."

Again:—

"You seem to wonder that Mr. Willughby should not be aware that the Fern-owl is a summer bird of passage. But you must remember that those excellent men, *Willughby & Ray*, wrote when the ornithology of England, & indeed the Nat: History was quite in it's infancy. But their efforts were prodigious; & indeed they were the Fathers of that delightful study in this kingdom. I have thoughts of sending a paper to the R. S. respecting the fern-owl; & seem to think that I can advance some particulars concerning that peculiar, migratory, nocturnal bird, that have never been noticed before. The rain of Octo<sup>r</sup>. last was great, but of Nov<sup>r</sup>. still more. The former month produced 6 in. 49 hund. but the latter upwards of 8 in.: five &  $\frac{1}{2}$  of which fell in one week, viz. from Nov. 13th to the 19th. both inclusive! You will, I hope, pardon my neglect, & write soon. O, that I had known you forty years ago!

"I remain, with great esteem,

"Y<sup>r</sup>. most humble servant,

"GIL. WHITE.

"My tortoise was very backward this year in preparing his Hybernaculum; & did not retire till towards the beginning of Decem<sup>r</sup>. The late great snow hardly reached us, & was gone at once."

Again:—

"When Mr. Townsend avers that the Nightingales at *Valez* sing the winter thro', I should conclude that he took up that notion on meer report; because I had a brother who lived 18 years at Gibraltar, & who has written an accurate Nat. Hist. of that rock, & it's environs. Now he says, that Nightingales leave Andalusia as regularly towards autumn as other Summer birds of passage. A pair always breeds in the Govern<sup>r</sup>'s garden at the Convent. This Hist. has never been published, & probably now never will, because the poor author has been dead some years. There is in his journals such ocular demonstration of *swallow emigration* to, & from Barbary at Spring, and fall, as, I know, would delight you much. There is an *Hirundo hiberna*, that comes to Gibraltar in Oct<sup>r</sup>. & departs in March: & abounds in and about the Garrison the winter thro'."

But if we give way to our desire to quote from these letters, this notice would be incomplete without the whole of them; and we

trust they will be incorporated in the new edition of "Selborne" so long promised by Professor Bell.

Amongst the published papers is one by Mr. C. B. Plowright upon Fungi observed on one of the Society's field days. We wish there had been further observations upon this little-worked branch of Cryptogamic Botany, which may be studied with pleasure, interest, and truly profit, when the student can dine off them. He who has eaten *Hydnum imbricatum* need wish for no better dinner.

Those of our readers who live in the country—in the true meaning of the word—will do well to read Mr. Frank Norgate's paper upon the "Nesting Habits of certain Birds, and Remarks with a View to their Encouragement by the erection of Nesting-Boxes," of which a brief outline has already appeared in the May number of the 'Zoologist' (S. S. 4891). If these readers had once seen the joyous crowd of birds we once saw around a fine old farm near Marston Moor, in Yorkshire, all of which built in artificial boxes and holes made purposely for them to nest in, they would scarcely hesitate to encourage their nesting, especially when they found the difference in their crops from the almost total disappearance of "wireworms," &c., besides the constant amusement and knowledge obtained by watching their operations. The following by no means exceptional case, quoted from Mr. Norgate's paper, is sufficiently suggestive:—

"Some birds use extraordinary materials for their nests. A missel thrush once made a nest here almost entirely composed of thin strips of green and white paper which had been hung up to scare sparrows from a seed bed. Thrushes' nests have been recorded which were built with string, lace and linen collars, &c. On one occasion I had turned out of my collection a pair of stuffed squirrels, which the gardener placed near some fresh sown peas to scare the enemy. (I think he had a very vague idea as to whether the dreaded enemy was a mouse or a titmouse.) For some days afterwards it was quite amusing to see a pair of great tits plucking the stuffed squirrels in order to line their nests with the red fur: these birds seem to prefer red fur, or the rust-coloured cottony down from the seed of the reed mace, to anything else for lining or even for the entire structure of their nest, though they sometimes use rabbits' felt or moss."

Mr. Stevenson's valuable Ornithological Notes for 1875 must receive a passing notice; but as many of these have already appeared in the 'Zoologist,' we forbear to quote.

Some useful work appears at the end of these 'Transactions,'

*viz.*, part vi., sec. ii., of "Fauna and Flora of Norfolk." We wait with impatience to see more of this.

Having gone somewhat roughly over these 'Transactions,' and noticed what there *is* in them, we cannot conclude without noticing what there *is not*. The first thing is the total want of any reference to Marine Zoology (excepting the Cetacea). It seems a very remarkable thing that a county with so large a seaboard as Norfolk should have no champion to work up that most obscure, little-worked, but most interesting study. We hope for better things, however, when the new aquarium is opened at Yarmouth, if it is properly constructed,—that is, the animals kept in *unchanged*, circulated water, with a dark, cool and sufficiently large reservoir,—and if there be a competent curator. Scientific naturalists in England and abroad have too often regarded aquariums as toys, but Dr. Anton Dohrn, with the assistance of Mr. W. A. Lloyd, has at Naples, out of his private fortune, set a fine example of what aquariums can do in the direction of real solid biological work. Dr. W. B. Carpenter, among other naturalists, has recently studied there, and is to lecture on the Naples Aquarium on the 29th of this current June.

We also observe that there is only one order of insects touched upon, that by the President. Where are the Coleopterists, Dipterists, and Lepidopterists? Was there no rarity in any of these orders taken during 1875-6? We have little doubt that the prize system at the field meetings would soon bring some to light amongst those orders, as well as among land and freshwater shells.

In conclusion, we will only say—even with these omissions—to other kindred Societies, "Go ye and do likewise!"

J. T. C.

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*Ornithological Notes from North Lincolnshire.*

By JOHN CORDEAUX, Esq.

(Continued from S. S. 4899).

APRIL AND MAY, 1876.

APRIL commenced with some fine warm weather, lasting to the 8th; after this we had a most dull, cold, and cheerless month. There was in many cases a very late arrival of our summer migrants.

*Snow Bunting*.—April 5. I saw the last this morning, three birds, and one of these, evidently a male, was in mature plumage, and a most beautiful object he was, on a bright sunny day flitting from clod to clod of some brown fallows. This is eleven days later than I have ever previously noticed them in this county.

*Hooded Crow*.—April 5. The last of the hooded crows were seen to-day on their old favourite feeding-ground, the Humber foreshore. I met with them again, six weeks later, under very different circumstances both of scene and place, beyond the golden green of the opening birch woods, on the fell sides above Loch Hess, and the deer-forests northward of Loch Lochy, amidst some of the wildest and most beautiful scenery of the Highlands, a singular contrast to the flat, muddy foreshores of this ugly tidal river.

*Hoopoe*.—A fine male hoopoe was shot during the first week in April by the keeper on the Hainton Estate, near Wragley.

*Wheatear*.—April 11. First seen, a female; I saw no more till the 24th, when, with a warm south wind, numbers arrived in pairs.

*Lesser Blackbacked Gulls*.—April 14. These gulls are in flocks inland; they are in full breeding plumage. A fortnight later and they will have gone northward to their breeding stations.

*Yellow Wagtail*.—April 17. First seen; three or four days beyond the average time of arrival.

*Fieldfare*.—April 18. In flocks near the coast.

*Carrion Crow*.—April 18. This is still a very common bird in this neighbourhood, two or three pairs nesting in every small plantation. They are a late nester compared with the rook. We took the first egg to-day from a nest on the top of an oak in a wood. On the 24th I took three eggs from a nest in the top of a bushy spruce, about twelve or fourteen feet from the ground. These eggs, which differ greatly from the normal size, measure two inches in length by 1.05 in breadth (this was the largest egg, the other two were slightly smaller). This nest, as usual, was most warmly and thickly lined with wool, hair, old rags, &c., closely mixed and matted together. I have observed one thing in connection with the carrion crow in this neighbourhood, that from the time the first egg is deposited we almost invariably find the hen on the nest between three and five in the afternoon. Can any one tell me at what time during the twenty-four hours the egg is deposited by birds? The only notice of this subject that I can at

present recollect in any Natural-History publication is by the late Dr. Saxby: in this journal for 1862, p. 8166, he says, "Careful observations of twenty different species of our insessorial birds has enabled me to ascertain the fact that, as a general rule, they lay their eggs between the hours of 7 and 12 P.M."

*Chimney Swallow*.—Arrivals in North Lincolnshire. One seen at Elsham, near Brigg, on the 7th, a very warm and sheltered situation, amongst woodlands; Bradley, near Grimsby, April 17th, one seen; two on 18th, same locality; Great Cotes marshes, April 21st; Killingholme on the 23rd.

*Willow Wren*.—April 22. Seen and heard. I saw one in a larch and spruce plantation on the 15th, but we did not hear the well known silvery, ringing song of this little bird before the 22nd. In a neighbouring parish to this, a friend, who is a good observer, says it was mute till after the 26th.

*Whinchat*.—April 24. Wind S., very warm and fine. First seen. The tree pipit and common whitethroat appeared for the first time on the same date.

*Redbreast*.—Early in April I found a thrushes' nest completed and ready for the eggs in a laurel in my garden; from some cause or other the nest was never used by the builders: since this a pair of robins have utilised the forsaken nest, and built their own inside, successfully bringing off a brood.

*Magpie*.—April 26. Took the first magpie's nest; it contained five fresh eggs. I find the magpies' nests invariably lined with fine roots.

*Cuckoo*.—April 27. Seen and heard. In 1874 it was April 25th; 1875, April 24th.

*Sedge Warbler*.—May 3. Seen.

*Whimbrel*.—May 3. First spring arrival, twenty seen together; a flock of forty on the 6th.

*Wild Duck*.—May 6. Found the first wild duck's nest this season; it contained six eggs. The ducks had not commenced sitting on the 10th, for they were still flying in company with the mallards.

*House Martin*.—May 8. First observed.

*Golden Plover*.—May 10. Saw four pairs together this afternoon in one of the pastures: they are in nuptial plumage; although in a flock each pair kept together, and when they rose they flew in pairs.



*Gray Plover.*—May 10. Numerous on the Humber fisheries. They are generally in breeding plumage, and I see some magnificent old richly plumaged birds in the flocks. They will now soon take their departure for high latitudes, and I cannot help wishing they would drop a few of their valuable eggs in these marshes before departing for those far-away Petchora tundra's.

*Fieldfare.*—May 16. A friend told me that he saw upwards of forty in one of our plantations on this day. They were much tamer than usual, and he got very near them.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,  
June 2, 1876.

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*Notes from Castle Eden.* By Mr. JOHN SCLATER.

(Continued from S. S. 4860).

MARCH, 1876.

*Goldencrested Wren.*—On the 25th I saw a great many in a fir plantation; they appeared to be all females.

*Golden Plover.*—28th. A good many on the coast. One shot near Hartlepool was brought to me to stuff: the feathers of the belly of this specimen are black and white; a few darker feathers had also appeared on the back. The owner, through whose hands a great many of these birds pass, declares that he has not observed one in the same state before: although it is common enough, it would rather appear that they mostly leave this part of the coast before any change of plumage takes place. This was a female, the ovaries being in an advanced condition.

APRIL.

*Wagtails.*—Wagtails have appeared in larger numbers than usual, chiefly the black and white, but the gray species are also more common. The yellow wagtail has not yet appeared; the latter has, for the last few years, been rather a scarce bird in this neighbourhood. The gray wagtail is very commonly called the yellow wagtail in this part, and a gentleman, only the other day, told me that he had seen several yellow wagtails, but when I showed him a specimen of the male gray wagtail he said, "Aye, that's the bird."

*Carrion Crow.*—One trapped by a watcher, who told me that

the bird had cost him no end of trouble, having previously refused all sorts of bait, but was at last caught by an empty egg-shell; the man having eaten the egg for breakfast, seemed proud that he had at last fairly shown that he "had more brains than the crow." This species still contrives to rear a brood or two every season in the Dene, near the coast. I never see them far inland, but they are always to be seen feeding on the sea-shore, among the rocks.

*Royston Crow.*—10th. Royston crows seem to have all left the neighbourhood.

*Woodcock.*—On the 18th the keeper brought in a woodcock which he had been stupid enough to shoot. I opened the bird, which was a female, and by the state of the ovaries convinced him of his folly; the bird had evidently settled to breed here. He has since seen three or four more, a pair constantly visiting a small "runner" from the pigstye near his house.

*Willow Wren and Tree Pipit.*—21st. I heard the song of the willow wren and tree pipit.

*Roughlegged Buzzard.*—On the 25th I saw a roughlegged buzzard flying slowly past the house, escorted by some eight or nine rooks; he or she appeared to have come from the rookery, and was not then flying as high as the trees. The rooks, however, kept at a respectable distance on the flanks and rear: the buzzard seemed to take no notice of them. This seemed a very light-coloured bird; it has not been seen since, and would therefore appear to have only paid us a flying visit.

*Fieldfare.*—On the 28th a large flock reappeared in the grounds around the house: since the 24th of January, when they entirely left us, I have seen none until to-day.

*Missel Thrush and Blackbird.*—Hearing the loud screaming of a young bird, and immediately following it the wild alarm notes of a male blackbird, which I saw flying towards a bare and solitary thorn, I ran expecting to find a cat or hawk the cause of the disturbance, and on reaching the spot, off went what I at the first moment took for a male kestrel, but the next instant I both saw and heard, by his harsh notes, that the marauder was a missel thrush. I found the young blackbird at the foot of the thorn, seemingly nothing the worse; but it might have been different if I had not appeared on the scene, and I wish now that I had not been so hasty, as I cannot prove he would have killed it; but I am satisfied in my own mind that he would. There was no nest of the

thrush anywhere near, nor was it a likely place for the thrush to be looking for his usual food.

## MAY.

*Jackdaws.*—Jackdaws have either been more mischievous this year than usual, or I have been more fortunate in observing their habits. I have previously noted (see Zool. S. S. 4749) my belief that it is common for them to kill young birds “in dry weather when worms are scarce,” but I now find that it is a very common habit of theirs when worms are plentiful. I have this season on several occasions seen them—far from the rocks in which they build—flying about from tree to tree on the lower limbs, anxiously scanning the herbage beneath for young blackbirds and thrushes, both of which are particularly numerous this season. I heard one killing a young blackbird in a beech tree, but the tree is so bushy—a nearly solid mass—that I could neither see the performance nor get up afterwards, so I cannot say whether he was not robbing a nest of young. Both the parent blackbirds were there, and apparently did their best to protect their young; but Jack went on with his business, muttering his name all the time; the blackbirds at last saw me and flew away, and Jack was at once silent, and after a second or two looked out, and, seeing me, made off without his prey. I have also had proofs that they rob the pheasants’ nests, by their dropping the eggs on the road as they are carrying them across to their nests; and a few days since I caught one in a trap baited with a young rabbit: the eyes of the rabbit were both cleanly taken out, and he had been pecking it behind the ear, exactly after the manner of the Royston crow. I may mention that on the 16th of April I saw a jackdaw flying about in the Dene with a large morsel in his beak; a number of other jackdaws were chasing him and trying to take it from him; he at last settled with it on a tree. I watched him for some time with a glass, but no attempt was made to eat it then.

*Curious Nesting Freak of the Spotted Flycatcher.*—On the 13th I was taken to see what was supposed to be a very curious nesting freak of the chaffinch; the nest, or rather nests, might easily pass for that of the chaffinch, but there can be little doubt it is the work of a spotted flycatcher. It was placed on a beam at the side of a pump, beneath the platform on which people stand to pump water; the nest is a double one, of an irregular oval form at the base, sloping up much more on one side than the other, until it

appears in the shape of the figure 8 at the top: it is a solid mass,—I mean the structure has been carried up simultaneously,—and two beautifully cup-shaped nests are finished all but the lining. It is principally composed of green moss, some stems of dried grass, red cow-hair, a few horse-hairs, and a variety of feathers; a few small feathers lying loose in the bottom of one nest are without doubt taken from the breast of the spotted flycatcher. There is a considerable quantity of wool used throughout, and it appears on the outside almost like a network, and is studded with lichen. I would gladly have left this curious nest where it was for further observations, but I found a number of small boys were quarrelling as to which had most right to it, so I brought it away, as it was sure to be destroyed. Curiously enough I could see no birds about but the chaffinch, but then he is everywhere. On the 27th (exactly a fortnight after making the above note) I was told that another nest had been built on the same spot, so I went again and found it to be so. This nest was an ordinary one, built with the same materials and quite finished, and rather flatter than the others; the foundation of this one is also rather oval, and very nearly as large as the other two, and the main structure is not in the middle, but at one end of it. I tried to bribe the boys to let this one alone, and went back next morning expecting to find an egg in it; but no, the little “brats” had been before me, taken the egg and smashed it, but I saw the spotted flycatcher not far from the place, which settled the matter in my mind, so I brought home the nest and placed it beside the other.

*Fieldfare*.—May 17. The fieldfares, which reappeared on the 28th of April, have never left the grounds until to-day, all are gone.

*Pied Flycatcher*.—The Rev. R. Taylor, of Hesledon, near this place, told me that a pair had commenced a nest in his garden, but the sparrows having destroyed the nest they have since disappeared. I have only twice met with this species here: first in the spring of 1862, and I was struck with the resemblance of this bird to the round stumpy individual figured by Bewick, shot at Corbridge-on-Tyne; it was sitting on a small ash tree in the park: the second I saw in the spring of 1867, sitting on some rails in the nursery gardens; it was a very fine male.

*Spring Migrants*.—Unlike last year almost all our spring migrants have appeared in goodly numbers, but all have arrived late, except the two already mentioned. I observed none before

the month of May. I have neither seen nor heard the corncrake or the grasshopper warbler.

*Gray Wagtail.*—May 28. I have seen three broods of these birds, fully fledged and capable of looking after themselves, being dispersed on different parts of the streams. I had a great treat given me the other day by one of these young birds: I was sitting under a yew at the side of a stream when I heard the notes of one on the wing; it alighted on a bare ash just above me, and at once commenced a really very sweet and pleasing song. I never before heard a wagtail sing.

JOHN SCLATER.

Castle Eden, Durham.

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*Rare Birds near Ringwood during the Winter of 1875-76.*

By Mr. G. B. CORBIN.

THE following species have fallen under my notice, and I personally inspected the majority of them:—

*Peregrine Falcon.*—Two females were killed, and a male seen in October. One of the females was the largest I had ever seen, but its plumage was dull.

*Hen Harrier and Montagu's Harrier.*—A male of the former was killed on the 16th of November, and a female was trapped in the forest in January. I saw a male of Montagu's harrier in December in a somewhat strange situation,—*viz.*, flying over the river,—where some months before I had seen an osprey. The harrier flew within fifteen yards of where I was standing, and I had a good opportunity of admiring its airy and beautiful swallow-like flight.

*Merlin.*—A female was shot on the 15th of February, when in the act of striking at a skylark.

*Great Gray Shrike.*—A beautiful specimen was caught in a trap which had been placed for a hawk upon the top of a post. It is the first I had ever seen in the flesh.

*Bittern.*—A male was shot on the 19th of February. It was in beautiful plumage, and is the only one I have seen this season.

*Slavonian Grebe* (?).—I interrogate the name, as I have a doubt connected with it. In March a fisherman brought me a grebe he had found on the river; at a glance I saw it was different in

appearance from any common grebe I had seen before, as it was larger, measuring—when held up by the neck—about eleven inches. It also had a very conspicuous greenish pink sort of membrane at the base of the lower mandible, which faded completely in a day or two. The front and sides of the neck are of a dark reddish chestnut; the rest of the bird, except the breast, is of a dusky hue, and the silvery breast is itself much shaded with the same colour. The bill is black with a light tip, and the eyes were dark, almost black. The head itself is sleek in appearance, and not what I suppose the Slavonian grebe would be, but it was pronounced to be that species by an ornithological reader of the 'Zoologist' who saw it. It seems to me to answer best the description of the "black-chin grebe" of 'Montagu's British Birds,' which we know is now considered a variety of the dabchick. Though larger than any common grebe I have hitherto seen, yet it is not so large as the Slavonian is described to be, even if it answered the description of the latter, which it does not. Is such a variety of the common grebe as the one I have described well known to the readers of the 'Zoologist'?

*Egyptian Goose.*—A beautiful male of this lovely species was found dead near the river on the 11th of February. Three of the birds had been seen occasionally, during the previous fortnight, going and returning at flight time, and had been shot at several times, but I am told they, as a rule, kept out of range." The bird in question is undoubtedly one of the three, as three or four days before its discovery only two geese had been seen by the numerous gunners. Whether they were "escapes" or not I would not venture to say, but it is somewhat remarkable that a specimen was killed in February, 1870, and that and the present are the only ones I ever saw.

*Goosander.*—Occasionally killed; from the middle of December up to the end of February I saw nine, all females or immature males. How long are the males attaining their adult dress? as several of those I saw were in different conditions of plumage; one of them in particular had a lovely salmon-coloured breast and belly, but the back had all the gray markings of the immature bird. I have but once seen a male in mature plumage killed here, five or six years ago.

*Gadwall.*—I saw a dreadfully mutilated specimen of this species offered for sale on the 15th of December, which had been killed

the previous night in this neighbourhood. On the 30th of December I had a duck sent me as this species, but it proved to be a much larger bird, and only a variety of the common wild duck. I need not state that the gadwall is very rare in this neighbourhood; I had never seen it before. Wigeon and teal were as usual common; and I heard of pintail, tufted, and shoveller duck being killed, but I saw neither.

*Black Tern*.—Two of these were killed, one on the 25th of October, the other on the 29th of November; both were in the white plumage.

G. B. CORBIN.

Ringwood, Hants.

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*Ornithological Notes from Devon and Cornwall.*

By J. GATCOMBE, Esq.

(Continued from Zool. S. S. 4824.)

APRIL AND MAY, 1876.

*Ring Ouzel*.—April 2. Several ring ouzels heard and seen on Dartmoor.

*Chiffchaff*.—April 5. Chiffchaffs were very plentiful in the Land's End district.

*Curlew*.—April 7. Curlews numerous on the boggy moors by the side of the River Fowey, Cornwall.

*Buzzard and Peregrine Falcon*.—April 8. Examined a very fine buzzard, the leg of which had been dreadfully smashed by a "gin;" also a beautiful adult peregrine falcon which had been trapped in the same manner, and its leg was only hanging by a sinew: this poor bird, I was told, had been in the trap for many hours, and must have suffered dreadfully. It is a great shame that keepers should be allowed to use such cruel traps, which they do not visit sometimes for days together. Whilst on the subject of "gins," I may mention that during last winter I found a blackbird in my garden, which had fallen off its perch in a shrub, literally starved to death, in consequence of having the whole of its bill wrenched off close to the base by one of those traps which are constantly used by boys for catching small birds. There was no doubt of its being starved, for it was so emaciated that the breast-bone protruded nearly through the skin. The fine peregrine falcon

before mentioned was in rather unusual plumage, for although the sides and thighs were finely barred, the whole of the belly from the lower part of the chest was beautifully marked with well-defined heart-shaped spots.

*Swallow*.—April 15 (the day after a tremendous gale from the north-east, with hail and snow). Observed some swallows. The wind had changed to the south-east, and the weather became rather mild.

*Swift*.—April 28. Remarked the first swift, and on the 29th saw several more. Wind strong, but the weather mild. I have observed for the last few years that swifts have become more numerous in the immediate vicinity of Plymouth than either swallows or martins.

*Whimbrel*.—April 29. Saw and heard several whimbrels to-day, and also on the 1st of May.

*Rook*.—May 2. Many young rooks in the Plymouth market.

*Godwits*.—An unusual number of bartailed godwits in spring plumage seem to have made their appearance on the coasts of Devon and Cornwall, and many have been killed. The stomachs of some examined by me contained the remains of "sand-hoppers." Mr. J. H. Gurney, jun., in a letter to me, also mentions having met with several in Leadenhall Market, together with one black-tailed godwit and a fine spotted redshank, all I believe more or less in summer plumage. Some of these godwits seem to have been very tame, for on the 10th of May a young friend of mine, Mr. R. Hocking, of Stonehouse, told me that he had that morning killed a strange bird from one of the windows of his house, with a "pea-rifle," as it was leisurely feeding on a kind of beech just below: on examination I at once found it to be an exceedingly fine male bartailed godwit in full summer dress: strange to say, it was the first bird of any kind he had ever killed in his life. After that I examined others obtained in the neighbourhood, all more or less in the nuptial garb, and found the females to exceed the males generally in size and length of bill, but with far less red on the plumage,—indeed some with scarcely any at all; and this I have been informed was the case with the birds seen and obtained in Cornwall.

*Herring Gull and Peregrine Falcon*.—I am sorry to say that, owing to a severe attack of rheumatism, I have not as yet been able to visit the breeding-place of the herring gulls at Wembury, but some friends of mine who went there a short time since told



me that the gulls were nesting as usual, and that a pair of fine peregrine falcons had taken up their quarters in their midst, as they did last year, flying round and making a great chatter on being disturbed. Rabbits are very plentiful in the district. I have heard that a pair or two of peregrines are breeding on the Cornish coast, that the eggs have been taken from one nest, and I am sorry to hear that it is intended to take the young from another. Many young ravens, too, have been captured.

*Redbacked Shrike.*—I am glad to say—as the species had become scarce within the last few years—that several pairs of redbacked shrikes have been seen in the neighbourhood of Plymouth lately.

JOHN GATCOMBE.

8, Lower Durnford Street, Stonehouse, Plymouth.

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**Steel Traps and Gins.**—The usual method of catching rabbits is to place steel traps or gins at the entrance of their holes or runs. The trap is concealed with earth, grass or leaves, and the animal springs it by stepping on the pan. The jaws of the trap smash the leg-bones, cut through the flesh and skin, so that the animal is held by the sinews only, which are tough and strong. As the rabbit usually moves out at dusk, he generally gets into the trap at that time, and consequently remains in about twelve hours, supposing the traps are visited the next morning. During this time the animal suffers the agony of broken bones, lacerated flesh, besides the terror and thirst necessarily occasioned by such wounds. When trapping is carried on in March, April and May, hundreds of young rabbits die of starvation in consequence of the old does being caught. There is an idea that rabbits and such animals do not suffer acute pain; but anyone who has heard the screams of a rabbit or hare in a steel trap would not be inclined to believe this doctrine. For catching dogs, domestic cats, weasels, stoats, polecats, magpies, crows, jays, &c., the same instrument is used. A bait is so placed that the creature cannot get at it without passing over the trap. As in the case of the rabbit and hare, the bone-breaking, flesh-lacerating process goes on, and the hours on hours of protracted torture, the torture in these cases being frequently of longer duration than in the case of rabbits: for the bodies of these victims are considered of no value, and it does not matter whether they die in the trap or not—consequently the trapper is not regular in his visits. It sometimes happens that the domestic cat will get into gins set for rabbits, and being a strong animal will drag away the gin, chain and peg for a considerable distance until arrested by the chain becoming entangled in stumps or brush. Traps are lost in this manner, and months afterwards found with the skeleton of the cat. It is difficult to say how

many days an animal so tenacious of life as the cat would live suffering all the agonies of broken limbs, thirst and starvation. This lingering death is not so apt to happen to the dog, as he will make known his whereabouts by his cries, which he will utter almost without intermission, and very painful it is to hear the cries of a dog under such circumstances. The method adopted by some trappers for catching birds, such as hawks, owls, crows, magpies, &c., is rather a refinement in point of cruelty compared with the plan already mentioned. Birds of this description are apt to alight on posts placed in fields and other open places, and it is the custom to place on these posts steel traps of a circular form, so that any bird alighting on them is immediately caught by the legs. Here, as usual, the limbs of the bird are smashed, and the trap, being attached to the top of the post by a short cord or chain, the bird hangs suspended by the broken legs, head downwards, and so remains until it flutters itself to death or is killed by the trapper. As these creatures are of no value, of course these traps are not visited with any regularity. Other birds besides these mentioned often get into such traps—that is to say, rooks, jackdaws, woodpeckers and smaller birds, such as thrushes, blackbirds, starlings and others. Some animals, such as weasels, stoats, otters, polecats, rats and foxes, sometimes get out of steel traps by biting off their feet: it is hardly possible to imagine the agony of such an operation. Rats suffer for a shorter time in gins than other animals, as the gins are naturally more frequently visited, being in the near neighbourhood of houses and barns. Hedgehogs, being very short in the legs, are often caught by the belly as well as the legs, and in this state are found alive in the traps. Being held in the jagged teeth of a steel trap in such a way must be fearfully painful. This animal—the most harmless and inoffensive creature in existence—it seems hard to punish in this manner. Sometimes rat-gins are baited and used to catch blackbirds and thrushes. Birds that are fortunate are caught by the head, and immediately killed, while others less so get their beaks cut off, and escape to die of starvation. These cruelties go on in every parish in England, and in my opinion some measures should be taken to stop them, and I am sure that many humane persons would forbid the use of such instruments on their estates could other means be devised of catching the animals required to be caught or destroyed. The matter under any circumstances seems worthy of consideration. As my statement may not be credited by some not acquainted with the details of trapping, any one can prove them by accompanying a trapper a few times in his rounds, and if after that he still advocates the use of steel traps, I should feel much surprised. I may add that the use of steel traps is totally unnecessary, as other means exist equally certain of taking any animals required in a merciful and humane manner, either by immediately destroying them, or catching them alive, without pain or injury.—*From the 'Western Morning News.'*

**Otter in the New Forest.**—From time to time otters are met with near some of the principal streams in the forest; but the specimen I wish to speak of was captured under somewhat peculiar circumstances. Its presence near one of the small streams had not been suspected, but after a considerable fall of snow, on the 21st or 22nd of March last, tracks were discovered by the woodman. What these tracks were he was at a loss to conjecture, as they were different from any he had previously seen, and besides this he noticed that the creature which had made them must have repeatedly crossed the stream, so he determined to follow up the trail, and found it was lost in an immense furze-bush at some considerable distance from the bank of the stream. Having a rabbit-net with him, he placed it across the entrance, and proceeded to beat the bush, when to his surprise a large otter made a rush clean through the net, and away into the stream again, where it made good its retreat, for the man, although he searched, could not find it. The following day he secured the help of a friend and two dogs, and on going to the furze-bush they found it again occupied by the otter, notwithstanding the narrow escape the creature had had the day previously. Eventually the otter was killed, but the man told me he fought most fiercely, and the dogs, which were small, did not care to be bitten a second time; ultimately the woodman's stout stick brought the conflict to a close. I saw the otter after it was dead, and could not but admire the adaptation of his strong and muscular limbs for his mode of life, and I could well imagine he would be no mean adversary to a dog or any other creature, especially in the water. I may state that the specimen in question was a male, and its colour a very dark brown; it weighed about twenty-one pounds, and measured three feet two or three inches.—*G. B. Corbin.*

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**Notes from West Somerset.**—In sending the dates when the first appearances of some of our summer migrants were noticed by me in this district, I would first observe that never within my recollection have the birds been later in their arrival or fewer in numbers. Up to this present time (May 8th) I have failed to observe a solitary blackcap. Day after day passes without the call of the cuckoo being heard, although the bird has been repeatedly seen. There can be no doubt that the coldness and backwardness of the spring have influenced the migration of our summer visitants, and that the majority of them are doing well in not being in too great a hurry to face the bleak east winds and frosts of our English May.

April 13. Redpolls still frequent my garden. The Taunton bird-catchers inform me that both siskins and redpolls were extremely numerous during the past winter.

April 15. Fieldfares flying overhead.

April 16. Called "cuckoo's day" by the villagers here, as being the

date when the cuckoo's cry may be expected to be first heard, but they had to listen for it in vain this present season. It was not until the 21st that the call of this bird of spring first greeted my ears in this neighbourhood.

April 25. Nightingales are now in full song in several of the copses in the village.

April 26. Tree pipits first noticed.

April 28. Swifts observed to-day. An early date for their first appearance.

April 29. Whitethroats and willow warblers only now generally distributed and common. Yellow wagtail first seen.

May 2. Redbacked shrike seen to-day in the Vicarage meadow; this is a week in advance of the average date of its arrival.

May 4. Corn crake heard.

May 5. First house martins not noticed until to-day. Swallows now numerous.—*Murray A. Mathew; Bishop's Lydeard, May 8, 1876.*

**Arrival of Summer Migrants in County Dublin.**—Having read with much pleasure Mr. Benson's "Notes from Dublin," published in your April number, I send you my records of the arrivals of our visitors, as they are in some cases considerably earlier than his.

March 27. Three male wheatears appeared at Lansdowne Road, as noticed by me in 'Saunders' Newsletter' for the 28th instant; for some days after this date I continually saw small flocks near the same place; it was quite a fortnight afterwards before I observed any females.

March 29. A few sand martins were seen hovering over a pond near Dundrum; they did not, however, appear again until the 11th of April, when I saw numbers along the banks of the Dodder, wherever they could find shelter from the N.W. wind, which was bitterly cold.

March 31. The chiffchaff was first heard, as noticed by my friend Mr. Barrington.

April 5. I saw the first swallow along the Dodder; they did not, however, become numerous until the 11th, when both they and the sand martins looked sadly out of place with snow on the ground.

April 7. I was shown a corn crake, which had been sent up for preservation from Stewartstown, County Tyrone, and was in very good condition.

April 8. Saw the first willow warbler.

April 21. Whimbrels appeared along the shores of the bay: they were numerous by the 27th instant.

April 23. I was told by an experienced friend that he had heard the cuckoo that morning. I did not see one myself until the 30th.

April 26. This is the first date on which I saw house martins, but I can hardly believe that they have only just arrived, as they appeared to be already collecting materials for their nests.

April 30. Golden oriole found dead, as before noticed (S. S. 4956).

May 3. Saw the first swift; they became very numerous by the 6th.

May 4. Numbers of whitethroats about the hedges.—*J. Douglas-Ogilby*; 36, *Elgin Road, Dublin*.

**Arrival of Spring Migrants, Nesting of the House Sparrow, &c.**—The chiffchaff was first heard on the 31st of March at Luccombe. Though the 14th of April was a cold day, with an easterly wind, and the thermometer little over 40°, the song of a nightingale was heard at St. Lawrence; and on the 15th the wryneck's note was heard. On the latter day six swallows were seen passing over; they never tarry here on their arrival, preferring the inland valleys, where sheltered ponds and pools swarm with midges. Heard of a wood pigeon's nest with one egg being found on the 14th of April. Observed robins laying the leafy foundation of their nest early in the month. That the house sparrow was somewhat late in building I have had pretty good proof, seeing that on the 12th of April a sudden gust of wind stripped the ivy from off the south gable of the house, bringing some score nests down with it—those from beneath the coping so thick together that there was no distinguishing or counting them: there were no eggs in any of the nests. Though this mass of ivy fell in the night not a sparrow was killed; but their plaintive cry at early dawn was incessant, and they were to be seen alighting on the closely-matted ivy and reversed nests; not an egg was found in them or on the ground: on a subsequent day they were observed gathering, from out the old nests, materials wherewith to construct new ones. Having, in the 'Zoologist' (Zool. 5753), minutely described the odd materials used by the house sparrow in building,—for example, a threaded needle, notice of sermon to be preached, a note of my own, a Latin exercise of my son's, &c.,—I need not enumerate the odds and ends these nests are composed of. Though the house sparrow's nest is a shapeless, unsightly mass, it is warm and snug within; and the birds at all seasons may be seen adding feathers and other things to the lining. Both the house sparrow and hedge sparrow I frequently observe perambulating the gravel-paths, but what they find to feed on I cannot discover or even imagine, as nothing eatable is to be seen,—not a seed, not an insect,—but the constant and rapid pecking plainly shows there is something preyed on, though too minute for human vision.—*Henry Hadfield; Ventnor, Isle of Wight, April 20, 1876.*

**Bird Notes from the Isle of Wight.**—Though swallows were seen on the 14th of April, none remained here, and no martins were observed till the beginning of May, but the weather was unseasonably cold; there was a slight fall of snow on the 2nd, and frost the two nights following. By the end of the month both swallows and martins were more than usually abundant, but few breed here. A martin was seen capturing a white butterfly; the house sparrow I have frequently observed doing so; and a blackbird was seen to catch one, which was taken to its young, which left the nest by the middle of June; they were fed by both male and female till 8.45 P. M. Heard of young thrushes being taken early in May, and I saw

a young blackbird fully fledged on the 14th. On the 19th of June a pair of the latter had commenced, or recommenced, building in a tree close to the house, and I am inclined to think, with Macgillivray, that sometimes more than two broods are reared. On the 20th of May some young rooks were seen that had been shot in the neighbourhood; it has been remarked by Macgillivray that the young are generally fledged by the 20th of May. Starlings were late in breeding, but on the 24th of May they were observed feeding their young in the ivy-clad turrets of the castle: one nest was placed in a hollow elm, only nine or ten feet from the ground. Having again closely watched the starling's manner of feeding, I find the bill is closed when thrust into the ground, in proof of which I have only to state the result of one observation. A worm being found and well pecked, was taken up and held transversely at the gape; when a second worm was discovered the first was laid on the ground until the other was secured; both were then caught up, and the search renewed till a third worm was hit on and despatched in a similar manner, the two first having been thrown down. Though the beak was now well nigh crammed the bird continued looking for more until scared away. That the bill was firmly closed is certain, or the worms must have dropped out. On the 15th of May cormorants were seen flying across the island, contrary to their usual habit, which is to follow the coast line. Three large birds were observed on the 16th of May, coming from off the sea, one considerably in advance of the others; in the distance they were taken for ravens, but though of the size the flight differed, and on their near approach I found the plumage was of a dark brown, with some white about it. The wings were rounded, the head and tail depressed, the flight heavy but powerful, the course northerly. Not having a glass, I could not be sure as to the species, but have reason to believe it was the osprey, it being too large for the buzzard, which it somewhat resembles in colour, though not in flight. The harrier (Montagu's) has not been observed, nor is it likely to nest here this season, the furze on our downs having been burnt in all directions.—*H. Hadfield; June 20, 1876.*

**Notes from the Zoological Gardens.**—With regard to the very attractive examples of the knot now alive in the fish-house at the Zoological Gardens, I have heard it questioned whether these sandpipers ever get the full red breeding plumage in confinement. Certainly I am able to say that there is now (May 29th) at that place as perfect a knot as I ever saw; and the turnstone and dunlin, in the same cage, are in the fullest summer plumage, showing what may be done with attention and care. Not the least striking birds there are the avocets, which, with a water rail, a yellow wagtail, and a gullbilled tern, make up as interesting an aviary as could be well imagined. The latter (the tern) is still in its winter garb, as to the head, but may partly change if it lives. In another pen adjoining, Jameson's gull, from

Australia is still sitting hard, and I hope some young gulls may come of it.—*J. H. Gurney, jun.*; 127, *Mount Street, W.*

**The Farne Islands.**—As I happen to have visited the Farne Islands a few weeks before Mr. Smith, I am the more interested with his pleasing narrative of his doings, and with the view of eliciting some further information I beg to offer a criticism or two. First, I was not aware that these islands had ever been honoured with the presence of the great auk until I found the circumstance noted in Hancock's 'Birds of Northumberland,' for my copy of Wallis—in which the original statement about it is made—is an abridgment: this, however, would hardly be the latest recorded specimen. Secondly, I would inquire if any of the cormorant's eggs on the Megstown were hatched. They had begun to lay on the 5th of April: if none were hatched on the 2nd of June, incubation lasts somewhat longer than has been previously suspected. In how many species of birds we are ignorant as to the period of the duration of incubation. Thirdly, inserted among the bird-breeders I find No. 12, shore lark, and No. 13, little ringed plover. Some further information on this head is desirable. The rock pipit, which I do not see mentioned in the list, appeared to me to be going to breed on the islands. Fourthly, I was assured that there were no rock doves on the islands, and as I do not recollect seeing them on any of my visits I concluded that the information of the boatmen was to be depended upon, until I read Mr. Smith's observations, which seem to show that it occurs and even breeds there, though doubtless in very small numbers. I would ask if any example was seen so as to be quite certain that there was no mistake about the species. It is not at all improbable that that bird should be there, and it will be interesting to make the fact certain. I quite agree with Mr. Smith that the present keepers are wholly incompetent to protect the islands, and that they are more poached than any other nursery I know of; but it is to be hoped that something better is in store for the most interesting spot (to an ornithologist) in the whole of England, and I believe the owner is ever willing to assist those who go to study the natural history of the feathered inhabitants of "Old Farne."—*Id.*; *Northrepps, Norwich.*

**The Museum at York.**—I think the plan of offering criticisms and suggestions on our provincial ornithological museums adopted by Miss Carey (*Zool. S. S.* 4406) is a very good one: but I must stand up for the Strickland Collection at York, which was, in its day, considered the finest private one of native species. It is of historical value now; and if it be not altogether in the best condition that could be desired, the length of time which the specimens have been stuffed must be borne in mind. Very sorry was I to see that the redbreasted goose was suffering from an attack of *Dermestes*, and that the nearly unique great white heron was getting mouldy. I hope that remarks such as your correspondent's will be the

means of arousing the authorities to a sense of their shortcomings.—*J. H. Gurney, jun.*

**The Somersetshire Egyptian Vulture.**—When at Twizell House, Northumberland, the seat of J. P. Selby, who died in April, 1867, at the age of eighty-seven, I saw, among many beautiful paintings by that distinguished artist and naturalist, a large and very finely-executed oil-painting of the Egyptian Vulture, the first, and at that time the only, specimen which had been obtained in England. I allude to this picture, because I have some additions to make to Mr. Selby's account. The owner of the bird, Mr. John Matthew, of Chelvey, near Bristol (not Mr. A. Matthew) has informed me that it was shot by a servant of his father's; that it was first seen in a field near the house; that it was killed on the cliffs bordering the Bristol Channel, about half a mile distant; and that its supposed mate—alluded to by Selby—was, he believes, only a heron. It was stuffed by Mr. Matthew, and has since found a place in his collection at Chelvey (Crotch, 'Birds of Somerset,' p. 1). When it was opened, we are told by Bishop Stanley, the smell was exceedingly offensive—a statement for the truth of which I will readily vouch, from what I have myself seen in Egypt. Stanley gives the wrong date, as did Mudie and others, which led Mr. Eyton to suppose that England had been visited by the Egyptian vulture two years following ('Rarer British Birds,' p. 3).—*Id.*; *June 9, 1876.*

**Variety of the Sea Eagle.**—In addition to the varieties of the sea eagle (*Halieetus albicilla* (Linn.), quoted in the fourth edition of Yarrell (p. 29), may be mentioned a very pale specimen in Mr. Newcome's collection at Feltwell, in Norfolk, which Mr. Baker, of Cambridge, informed me was caught in the nets which were set for catching falcons in a part of Holland. It is as much worth recording for the manner of its capture as for its being a variety.—*Id.*

**Peregrine Falcons breeding on the Yorkshire Coast.**—I have now in my possession three young peregrine falcons, two males and one female: they were taken on the cliffs at Bempton, three or four miles north of Flamborough Head, by the climbers who gather the eggs of the sea-birds. One old bird was frequently seen in the spring of 1875. This season two falcons were seen in the same neighbourhood. The nest was found and the young birds taken during the last week in May. I learn from the climbers that it is very many years since the peregrine was known to breed in these cliffs.—*W. J. Cope; Barnsley, June 20, 1876.*

**Sparrowhawk and Missel Thrush.**—Walking along the banks of the River Dodder, near Rathfarnham, County Dublin, on Ascension Day, Mr. Hunter Stokes and I saw a hen chaffinch closely pursued by a sparrowhawk. As the birds approached us, the windings and turnings of both pursued and pursuer were interesting in the extreme: they passed almost



beneath our feet as we stood on the bank, when, just as the hawk was about to seize its victim, a missel thrush darted down, right on his back, as it seemed to us: for a moment there seemed to be a glancing of wings, and the chaffinch dropped quietly down into the grass beneath our feet. The hawk, disconcerted, vanished into the woods on the opposite side of the river, and the missel thrush, with his exulting cry, flew to the top of one of the highest trees: the sight was a most interesting one. I may mention that willow warblers seem to be extraordinarily plentiful this year, and that whitethroats and wheatears are to be met with on the confines of Rathmines—the busiest and most populous suburb of Dublin.—*Charles W. Benson; Rathmines School, Dublin.*

*Erratum.*—In the May number of the 'Zoologist' (S. S. 4919), owing no doubt to my bad writing, my name was misprinted.—*C. W. B.*

**Spotted Flycatcher returning annually to the same Nest.**—In the last number of the 'Zoologist' (S. S. 4957) is a note concerning a martin returning annually to the same nest. For the last four years a spotted flycatcher has built its nest on an excrescence in an elm tree; and what makes it more remarkable is that the nest is always taken, being built close to a roadway, and is rather conspicuous. The nest is a slight structure, being made of moss, covered with lichen, and lined with hair. The number of eggs is generally five.—*C. Matthew Prior; The Avenue, Bedford.*

**Pied Flycatcher breeding in Wharfdale.**—In May, 1875, having heard that the pied flycatcher bred in Wharfdale, I went to Barden in order to procure a few eggs, but was unsuccessful, as they had not begun to build. This year I thought that if I went a little later I might perhaps meet with a few; so last Saturday my brother and I set off to Barden, and found two pairs within a hundred yards of each other. The first pair we met with had fixed upon a hole in an old oak; we saw the male and female go in several times: my brother went up the tree, but found that it had not begun to build. The other pair had selected a hole in a gnarled mountain ash, about eight feet from the ground: it contained a nest with one egg; both male and female belonging to this nest were very similar in plumage. I caught the male with a bird-lime twig whilst in the very act of singing, and found that it had not yet assumed its vernal drees; it was so much like the female that I hardly could persuade my brother that it was a male. I found another nest, which contained no eggs, built in a mountain ash, about four feet from the ground, just beside the River Wharf, a few miles lower down the valley. From the foregoing facts I infer that the pied flycatcher does not breed so early as some ornithologists suppose; also that its visit to our islands is not accidental,\* but that it purposely visits us for the sake of breeding. Nothing can be more pleasing to a real ornithologist

\* Mr. Selby supposes that the individuals found here are driven out of the track of their polar migration.—*E. P. P. B.*

than to see this most pretty bird flitting from bough to bough in pursuit of insect-food as one takes a ramble during a fine summer morning in some hilly wooded district. Its song is short, sweet, without much compass or variety, and is very similar to the redstart's—in fact, it is often confounded with it until one gets fully acquainted with it. Unlike the spotted flycatcher in its manners, when it is chasing insects, it does not return to the bough or twig from which it started, but very frequently flies to the hole in the tree selected for its nest, sometimes to the ground, picks something up, and then perhaps flies off to a considerable distance—for what purpose I am unable to explain, but I have noticed it repeatedly.—*E. P. P. Butterfield; Wilsden; Bradford, May 9, 1876.*

**Mottled Blackbirds.**—A friend of mine has shot two pied blackbirds in this neighbourhood. One of them has a white head; the rest of the plumage is of the ordinary colour. The other is a beautiful bird, having the head and rump perfectly white, and all the under plumage beautifully mottled. The latter bird visited a particular street (which abuts upon an extensive garden) very frequently last winter in search of food; in fact, it appeared to live amongst us in a semi-domesticated state. Both were male birds, and apparently very old.—*Id.; May 22, 1876.*

**Thrush laying in a Deserted Nest.**—A few days ago I saw a thrush fly out of a willow tree: thinking that it might have a nest, I peeped in, and saw three eggs lying upon the top of a very old and decayed nest. I think there can be no doubt that, her nest having been taken, she was fain to deposit her remaining eggs in the best place obtainable.—*C. Matthew Prior.*

**Note on the Song Thrush.**—With regard to the manner in which the song thrush extracts the snail from its shell, Mr. Selater expresses a doubt (*S. S. 4817*) as to the bird *fixing* the shell and then using its bill, after the manner of a pickaxe, to break up the snail's only protection. My observations certainly are in favour of the doubt expressed, and I have often seen the song thrush feeding, but never in the manner described in the quotation upon which Mr. Selater comments. From what I have seen, the thrush often takes hold of the snail, or the edge of the snail-shell, in its beak, and beats it to pieces against a stone or some other hard substance, the sound of which may be heard at some distance; but this is undoubtedly well known to every reader of the 'Zoologist' who has taken a walk near a hedge-bank in the winter time, where a number of the bleached, broken and empty shells may often be seen near the stone against which they were broken, so that it is quite possible the thrush resorts to the same spot from time to time. People who keep thrushes in captivity seem to understand this, since they put a stone in the cage, and the instinct of the bird teaches it to avail itself of the accommodation thus provided. If a portion of the snail protrudes from the partially-smashed shell, the thrush at once seizes it, and proceeds with the operation of "breaking up," until sometimes the snail-shell is

whirled around the thrush's head, almost after the manner of a thrasher's flail. As far as I have seen, the blackbird does not seem to have the power or instinct to smash up a snail-shell, much as it likes the contents; consequently people who keep birds in captivity often prefer the blackbird to the thrush as a cage-bird—not so much from a preference for the mellow notes of the former as compared with the singing music of the latter, but because one is so much more cleanly in its habits than the other.—*G. B. Corbin.*

**Nidification of the Pied Wagtail and Swallow.**—This summer there were three pied wagtails' nests near here,—all in places where there had been wagtails' nests before,—one in a haystack, one in a summer-house, and one on our ivied wall: on the latter the old bird began to sit on six eggs. Mr. Norgate tells me that, according to his experience, this is the usual number, though Yarrell and Hewitson put it at one less. But the most curious situation I have heard of for a pied wagtail to nest in, this year, was near Reigate, in Surrey, where—on the 22nd of May—I saw one which had built and was sitting in an old blackbird's nest. At first I could hardly believe there was no mistake; but Mr. Norgate has seen a similar thing in a Portugal laurel about six feet high. The same day I found a swallow's nest in the loop of a chain which was hanging down from the roof of a cowshed. A few days ago my friend found a nest of five swallow's eggs on the handle of the lid of a "malt-shoot" in a wherry-house in Norfolk.—*J. H. Gurney, jun.*

**"Black-headed Bunting"** (Zool. S. S. 4970).—It was not I, but Latham, who assigned this name to the bird we know as *Euspiza melanocephala*. Had I not followed his example (which has an usage of ninety-three years in its favour), and that set by all English authorities on European Ornithology known to me (including a "*List of Birds observed in Europe, being an addition to the 'Zoologist' List of Birds observed in Great Britain and Ireland,*" prepared in 1856 by Mr. Salmon, and sanctioned by the Editor of the '*Zoologist*' himself), I should have had to invent a new name for it—a thing which I abhor. If in availing myself of a long-established name—nay, the only English name that was available—I have "committed a grave error" I, at least err in good company; but should a better one be suggested I certainly shall raise no objection thereto. Meanwhile I trust I may be allowed to ask any of your contributors to provide me with a list of those English counties in which the reed-bunting or reed-sparrow (*Emberiza schanichlus*) is "universally known" as the "blackheaded bunting," since, so far as my own imperfect experience goes, the use of this name for that species is restricted to an extremely select circle of readers, or, perhaps I might say, to a still smaller number of writers.—*Alfred Newton; Magdalene College, Cambridge, June 1, 1876.*

[This note was not seen by the late Editor.]

**Lesser Redpoll Nesting in Suffolk.**—On Wednesday, May 10th, I took a lesser redpoll's nest, with four eggs, from the fork of a young Scotch fir,

about eight feet high, close by the garden of Mr. W. Page T. Phillips, at Melton Grange. The female bird allowed me to pull down the tree-top, on a level with my face, and look at her on the nest, though the eggs were not at all incubated. I used to take these nests yearly near Bungay, but had not found one for twenty years, and then generally so late as June or July. The Rev. E. J. Moor, of Great Bealings, tells me that a pair of lesser redpolls built in an apple tree in his garden, close by the house, last year, but they did not find the nest till the 5th of September, when the young birds were "full floppers" (Suffolk for ready to fly). On Saturday, May 20th, I again found a nest of the above birds on a larch by the carriage drive at the Grange, and near the house; I felt five eggs and looked at one, which was dark coloured from advanced incubation.—*Frederick Spalding; Woodbridge.*

**Starlings pecking with Open Beak.**—Since Mr. Gurney again drew my attention to this subject, in the February number of the 'Zoologist' (S. S. 4796), I have let no opportunity escape, by carefully concealing myself in the window-curtains, of watching the starlings feeding on the lawn. I have succeeded on four or five occasions in getting them within three yards of me, thus enabling me to see clearly the way the beak is used, and on no occasion have I seen it thrust into the grass closed, but invariably wide apart, and frequently with the upper mandible held perpendicularly, the lower then being considerably sloped back towards the breast; so that Mr. Newman's statement, that "in their digging operations the upper mandible penetrates the ground, but not the lower," is correct sometimes, so far as the bill is directed towards the ground, but I have yet to learn that the mandibles "penetrate the ground" at all, and in a former note (see S. S. 4836) I asked for information on this point. From all I have seen, I am persuaded that the beak is never thrust into the ground; in small thick tufts of very short grass the upper mandible is commonly used only, but where the grass is longer both mandibles are used, and invariably wide apart, often four or five times in quick succession, in or very near the same place; and it is used in the same way (open) amongst the small leaves of the daisy and other plants that are mostly lying flat on the ground. The object in using the mandibles apart appears to me to be to press the grass- or plant-leaves down, and thus disturb the insects that are hidden in the tufts of grass or beneath the leaves. I noticed that when they got a grub about a quarter of an inch long they always kept hold of the middle part, and by using their bill as if in the act of cleaning it on the grass, thus broke the grub into three parts; the part remaining in the bill was then swallowed, and then the other parts that had been wiped off were picked up. Be it understood that I have not said they do *not* pierce the ground, but that I have never seen them do so; and I do not see the use of the operation, as it appears to me the insects they want are not so much *in* the ground

as upon it. I can quite understand that there are many crevices in the ground where insects are hidden, and in these the starling, being a very ingenious little fellow, will just use his beak, as he can his tongue, in a multitude of ways; in fact, he no doubt takes the insects out of such places much in the same manner as the interesting little fellow mentioned by Mr. Clogg takes the favourite morsel from between the lips of the lady—without making a number of holes in her lips before finding out that there is a way between them; and surely the starling is not such a fool, when he is potato hungry, as to commence by making a lot of holes in the potato in searching for what he clearly sees he can feast from on the outside as well as if he was in the middle of it. I hope the writers of the very interesting and pleasing notes that have appeared in the 'Zoologist' will not be offended when I say that, inasmuch as they are chiefly observations made from tame birds,—and although they no doubt establish the fact that the starling can and does use his bill according to circumstances,—they are nevertheless foreign to the original question.—*John Sclater; May 24, 1876.*

**White Starling.**—I have just seen seven starlings,—*viz.*, two old birds and five young ones,—one of whom was of a pale dusky white. Readers will no doubt remember that I recorded a similar instance in the 'Zoologist' for April.—*C. Matthew Prior.*

**Starlings and Elder-berries.**—I can fully confirm Mr. Boyes' observation (Zool. S. S. 4877) with regard to starlings banquetting upon elder-berries, and it has often struck me that the birds seem uncommonly careless of their own safety when feeding upon them, as I have seen specimens shot by persons who had a weakness for elder-berry wine, and yet the surviving birds would soon return to the feast, and continued to do so until the trees were cleared of their fruit. The starling has also a peculiar taste for ivy-berries, at least while they have young ones. I know a place where the species annually build, in the thatch of a cottage, and the rejected seeds of the ivy have produced an abundant crop in the ground beneath. Whether the young starlings disgorge the ivy-berries, similar to young blackbirds and thrushes, I am not in a position to say. Whilst on the subject of birds and berries, I may remark that the holly-bushes in this neighbourhood are now (beginning of June) as heavily laden with their scarlet fruit as I ever saw them at Christmas; indeed last winter the "hips and haws" and holly-berries alike seemed to have been almost neglected by the feathered tribes, caused no doubt by the open weather and consequent supply of food of a different nature. I know not if the same observation was made in other localities.—*G. B. Corbin; Ringwood, Hants.*

**Crow laying twice in the same Nest.**—A friend of mine, who is a very close observer on matters connected with Natural History, informs me that last month he abstracted four eggs from the nest of a crow (*Corvus Corone*), because the young ducks were just appearing, and he feared that a few of

them might find their way to the nest, as this bird is well known to be so very partial to young aquatic poultry; but twelve days afterwards he was surprised to see the old crow go off her nest, and on looking into it he found it contained four more eggs. Nor is this the most curious part of the business, for he assures me he is confident that there were three old birds belonging to the nest, as three always went out of the tree, and were always seen in company.—*C. Matthew Prior; Old Wolverton, Bucks.*

**Partial Migration of Rooks.**—In the May number (S.S. 4907) your correspondent W. A. Durnford remarks on a partial migration of rooks. As I do not recollect having previously seen any record of this habit in rooks, I send you a similar case. In the neighbourhood of Huddersfield (where I lived until last October) there are several rookeries, the inhabitants of which only remain there from February to July or August (I cannot give dates, as my note-book is not at hand); during the rest of the year they frequent the neighbourhood in the daytime, and retire before night to some place to the eastward, I believe Nostell Priory, where there is a very large rookery, which is fourteen or fifteen miles from Huddersfield.—*J. E. Palmer; Lucan, Co. Dublin, May 19, 1876.*

**Flight of the Hoopoe.**—In one respect the interesting note on the hoopoe, quoted in your review of the late Dr. Saxby's 'Birds of Shetland' (Zool. 4209), does not agree by any means with my observations. He says its flight is rapid, but it always struck me in Africa, where I have seen hundreds, as being slow; and certainly the only time on which I have seen a hoopoe in England I should say the same of it.—*J. H. Gurney, jun.*

**Swift flying against Telegraph-Wires.**—A few days ago a swift was killed by flying against the telegraph-wires with such force as to nearly cut its wing off. I should not wonder so much at this circumstance if the wires had just been put up, but this is not the case. Although there are so many swifts about—I should think quite fourteen pairs—I have never been able to detect one with any material for building in its mouth.—*C. M. Prior.*

**Thirteen Eggs in a Moorhen's Nest.**—A person residing in this vicinity found a moorhen's nest containing thirteen eggs, and I know of one with ten in it. This is an enormous number, because the weight of a moorhen itself is from thirteen to sixteen ounces. I find in Waterton's 'Home, Habits and Handiwork' a similar instance, except that in this case nine eggs and four young ones were discovered. I believe the average number of eggs is nine.—*Id.*

**Lesser Whitefronted Goose.**—I find that our party was not the first to discover the lesser whitefronted goose in Egypt, as I see from a translation of Heuglin's 'Ornithologie Nord-ost Africas' ('Field,' Nov. 22, 1873), that it has been obtained before.—*J. H. Gurney, jun.*

**Duck nesting in a Pollard Willow.**—At Oakley, Bedfordshire, the seat of his Grace the Duke of Bedford, a common wild duck made its nest in a

willow, some distance from the ground, and reared in safety fourteen young ones.—*C. Matthew Prior.*

**Scarcity of the Razorbill.**—I am not in a position to answer Mr. Gurney's question as to whether the razorbill is getting scarcer on our coasts; but you will perhaps permit me to point out that there are two principal causes why it should be so, and as Mr. Gurney's note (*Zool. S. S.* 4959) supplies one of them, I will here give it the precedence. It would have been more interesting and clearer if Mr. Gurney had given us the exact date of his visit to Flamborough, as it would have nearly fixed the date of Mr. Bailey's great slaughter amongst these poor birds; but from the way I read the latter part of the note, it appears to me that Mr. Gurney was at Flamborough just before the razorbills had arrived to breed, and that as soon as they did arrive Mr. Bailey shot twenty. Now it would be very interesting—to more than myself, I think—to know what use these twenty dead razorbills were to Mr. Bailey after he had shot them. Bearing in mind that the razorbill lays only one egg,—and I need scarcely, I think, remind readers of the '*Zoologist*' that they too are ruthlessly destroyed,—the query appears to me to be, not so much as to the species becoming scarcer, but how it happens that there are twenty left to visit Flamborough or any other place to be shot. I need not be considered out of the way if I assume that every breeding station of the razorbill on the British coasts produces a Mr. Somebody who you may be sure is anything but a "crack shot," but all birds are tame in the breeding season. The second cause—not quite so easy of explanation—is the strange mortality so often noted in the '*Zoologist*' as taking place amongst them, almost periodically, on different parts of the coast. In the '*Zoologist*' for March, 1872, there appears an editorial remark, which I beg the author will allow me to repeat here. Mr. Newman says, "This morning (February 21st) I met a man going over London Bridge with a clothes-basket full of razorbills; he could not, or would not, tell me how he came by them, but, by the blood on their plumage, I think they had come by a violent death." I should like to know whether they are shot in such large numbers for any particular purpose. I have before this mentioned that some of the "gunners" on this part of the coast use the feathers of all sea-birds they may obtain, and also that some of them eat the flesh of the gulls; but I presume that the most terrible havoc is caused by such as shoot them for what is called "sport."—*John Selater; Castle Eden, June 13, 1876.*

**Manx Shearwater.**—In the '*Birds of Northumberland and Durham*'—one of the best local catalogues that has seen the light for many a day—there is a description of a bird resembling a Manx shearwater, except in being rather larger, and in "the back being two shades paler," and the whole of the under parts of the body "having the feathers tipped with ash-colour" (*l. c.*, p. 133). As among some ornithologists there has been a little

interest about this nondescript bird, I wish to say that it has been lately lent to me, and that, after comparing it with a young Manx shearwater killed near Plymouth in the summer of 1868, and sent to me by Mr. Gatcombe, I am quite satisfied that that is what it is—*viz.*, a Manx shearwater in the immature plumage, in which state it is certainly very rarely seen in collections.—*J. H. Gurney, jun.*

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## Proceedings of Scientific Societies.

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### ZOOLOGICAL SOCIETY OF LONDON.

May 16, 1876.—Dr. A. GÜNTHER, F.R.S., Vice-President, in the chair.

Dr. P. Comrie exhibited and made remarks on the zoological specimens collected by him during the Survey of the South-eastern coast of New Guinea by H.M.S. 'Basilisk.'

Dr. Günther exhibited and made remarks on a collection of Mammals from the coast of Borneo, opposite to Labuan. Among these were especially noticed a young example of a monkey (*Macacus melanotis*) of which the exact habitat was previously unknown, and a new species of *Tupaia*, proposed to be called *T. minor*.

Dr. Günther also read an extract from a letter recently received from Commander Cookson, R.N., stating that he was bringing home from the Galapagos Islands a living pair of the large land-tortoise of Albemarle Island. Commander Cookson stated that the male of this pair weighed 270 lbs., the female 117 lbs.

Mr. Selater exhibited the skin of a rare Pacific parrot (*Coriphilus Kuhli*), which had been obtained by Dr. T. Hale Streets, U.S. Navy, at Washington Island, of the Palmyra group, and had been sent to him for examination by Dr. E. Coues.

Prof. Martin Duncan read the second portion of a memoir on the Madreporaria dredged up during the expedition of H.M.S. 'Porcupine.'

Prof. Duncan also read descriptions of new littoral and deep-sea corals, from the Atlantic Ocean, the Antilles, the New Zealand and Japanese Seas, and the Persian Gulf.

Prof. W. H. Flower read a paper on some cranial and dental characters of the existing species of rhinoceroses. This paper contained the result of the examination of fifty-three skulls of rhinoceroses, contained in the Museum of the College of Surgeons and the British Museum, and described the principal characteristics of the five forms under which they could all be arranged, *viz.* :—

1. *Rhinoceros unicornis*, Linn. (including *R. stenocephalus*, Gray);
2. *Rhinoceros sondaicus*, Cuv. (including *R. Floweri* and *R. nasalis*, Gray);



3. *Ceratorhinus sumatrensis*, Cuv. (including *C niger*, Gray);
4. *Atelodus bicornis*, Linn. (including *A. keitlon*, A. Smith);
5. *Atelodus simus*, Burchell.

It was also shown that the skull of a rhinoceros, lately received at the British Museum from Borneo, was that of a two-horned species not distinguishable from *C. sumatrensis*.

A communication was read from Dr. Julius Von Haast, containing some further notes on *Oulodon Grayi*, a new genus of ziphioid whales, from the New Zealand Seas.

Mr. P. L. Sclater read a paper on the birds collected by Dr. Comrie under the circumstances just stated, amongst which was a new *Manucodia*, proposed to be called *Manucodia Comrii*, after its discoverer.

A communication was read from Dr. Hermann Burmeister, which contained some additions to the description already given of his *Dolichotis salinicola*.

June 6, 1876.—Dr. A. GÜNTHER, F.R.S., Vice-President, in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of May, 1876, and called particular attention to (1) a fine specimen of the tooth-billed pigeon (*Didunculus strigirostris*), purchased May 9th; (2) an example of the whitebacked trumpeter (*Psophia leucoptera*), presented May 20th, by Mr. H. Stacy Marks; (3) a pair of greenbilled curassows (*Crax viridirostris*), from Cartagena, purchased May 31st; (4) a mother and three young of the Indian fawn-coloured field mouse (*Mus cervicolor*, Hodgson; Jerdon, Mamm. of India, p. 206), presented by Lieut-Col. C. S. Sturt, and received May 31st; and (5) a blue or softbilled duck (*Hymenolæmus malacorhynchus*), from New Zealand, presented by the Acclimatization Society of Otago, and received May 31st.

The Secretary exhibited some specimens of a land crab (*Geocarcinus lagostoma*), from Ascension Island, which had been presented to the Society by Dr. J. B. Drew, and read a note by Dr. Drew on their habits.

Mr. Sclater exhibited skins of a male and female of the new pheasant from Borneo, lately described by Mr. Sharpe as *Lobiophasis Bulweri*. These birds had been obtained alive for the Zoological Society of Amsterdam, but the female only had lived to reach Amsterdam.

A letter was read from Mr. J. H. Gurney, containing some notes on the breeding of a pair of the Polish swan (*Cygnus immutabilis* of Yarrell), and a description of the young birds.

A communication was read from Dr. Julius Von Haast, containing some notes on the skeleton of *Ziphius Novæ-Zelandiæ*.

A second communication from Dr. Julius Von Haast contained some notes on *Mesoplodon Floweri*.

A communication was read from Dr. G. E. Dobson, containing a description of certain peculiarities in the structure of *Mystacina tuberculata*, which induced him to believe that this bat used its feet for purposes of locomotion on branches and leaves of trees.

Mr. A. H. Garrod read the first part of a memoir on certain anatomical characters which bear upon the major divisions of the Passerine birds.

A communication was read from Mr. E. L. Layard, containing notes on the birds of the Navigators and Friendly Islands, with some additions to the Ornithology of Fiji.

Mr. H. Adams and Mr. G. French Angas communicated descriptions of five new species of land shells from Madagascar, New Guinea, Central Australia, and the Solomon Islands.—*P. L. Sclater*.

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#### ENTOMOLOGICAL SOCIETY OF LONDON.

June 7, 1876.—Prof. J. O. WESTWOOD, M.A., F.L.S., &c., President, in the chair.

#### *Additions to the Library.*

The following donations were announced, and thanks voted to the donors:—‘Proceedings of the Royal Society,’ nos. 168 and 169; by the Society. ‘Journal of the Linnean Society (Zoology),’ no. 63; by the Society. ‘The Naturalist: Journal of the West Riding Consolidated Naturalists’ Society,’ no. xi.; by the Society. ‘The Zoologist’ for June; by the Editor. ‘Newman’s Entomologist’ for June; by the Editor. ‘The Entomologists’ Monthly Magazine’ for June; by the Editors. ‘Nature,’ nos. 340 to 344; by the Editor. ‘Conspectus of the Species of *Paratellusa*, an Indo-Malayan Genus of Fresh-water Crabs;’ by the Author, J. Wood-Mason, Esq. ‘The Geographical Distribution of Animals,’ 2 vols.; by the Author, A. R. Wallace, Esq. ‘The Canadian Entomologist,’ vol. viii., nos. 2, 3 and 4; by the Editor. ‘The American Naturalist,’ vol. x., no. 5; by the Editor. ‘New and Interesting Insects from the Carboniferous of Cape Breton;’ by the Author, Samuel H. Scudder, Esq., of Cambridge, Mass. ‘L’Abeille,’ nos. 172 and 173; by the Editor, M. de Marseul. ‘Von der Challenger-Expedition,’ Briefe von R. v. Willemoes-Suhm an C. Th. v. Siebold (vii.); by Prof. v. Siebold. ‘Bulletino della Società Entomologica Italiana,’ 1876, trimestre 1; by the Society. ‘Bulletin de la Société Impériale des Naturalistes de Moscou,’ 1875, no. 4; by the Society. ‘Note sur une Sécrétion propre aux Coléoptères Dytiscides,’ par Felix Plateau; by the Author. ‘Notes pour servir à l’histoire des Insectes du Genre *Phylloxera*, par J. Lichtenstein (de Montpellier), Extrait des Annales Agronomiques, tom. ii., no. 1; presented by the Author. Mémoires de l’Académie Royale des Sciences, des Lettres et des Beaux-Arts de

Belgique, 4to, tome xli., 1e and 2e parties; 'Mémoires Couronnés et Memoires des Savants Etrangers, 4to, tome xxviii. and tome xxxix., 1e partie; ditto (collection in 8vo), tomes xxiv., xxv. and xxvi.; 'Bulletino de l'Academie Royale de Belgique,' 2nd Série, tomes xxxvii. to xl.; 'Annuaire de l'Academie Royale de Belgique,' 1875 and 1876. 'Notices Biographiques et Bibliographiques,' concernant les Membres et les Correspondants, ainsi que les Associés résidents 1874; by the Academie Royale de Belgique. 'Reise der Oesterreichischen Fregatte Novara um die Erde in den Jahren, 1857, 1858, 1859—Zoologischer Theil, Zweiter Band, Zweite Abtheilung—Lepidoptera Rhopalocera, von Dr. Cajetan Felder und Rudolf Felder, heft 1—3; presented by Nathaniel C. Tuely, Esq.

By purchase:—'The Zoological Record' for 1874.

#### *Election of Members.*

Messrs. Alexander Augustus Berens, A. H. Swinton, and Charles Marcus Wakefield, were balloted for and elected Ordinary Members.

#### *Exhibitions, &c.*

Mr. Douglas made some further remarks on the "Corozo nuts," known as vegetable ivory, exhibited by him at the last meeting, which were attacked by a beetle belonging to the genus *Caryoborus*. The attention of the officials of the Dock Company had been drawn to the serious loss of weight that would be found when the nuts were to be delivered, and they were anxious to ascertain if there was any mode of arresting their depredations, and whether the beetles lived and bred among dried nuts, or entered the kernel in an earlier stage. It was suggested that the mischief originated in the parent beetles laying their eggs in the nuts when still in a green or soft state, and as there were several larvæ in each nut the interior was completely destroyed. The metamorphosis took place inside the nut.

Mr. McLachlan, in connexion with the above, exhibited another species of palm (*Copernicia conifera*), from Rio Janeiro, forwarded to him by Professor Dyer, which were also infested with a species of *Caryoborus* (*C. bactris*, Linn.). In this case each nut served as food for a single larva only, which bored in it a cylindrical hole of considerable size and depth.

Mr. E. A. Fitch exhibited the seeds of a leguminous plant (an article of commerce) imported from Egypt, infested by a *Bruchus*, which was estimated to cause a loss of 50 per cent. to the owners.

The President exhibited the larva of an Australian species of *Hepialus* (he believed from Queensland), bearing a fungus with four or five different branches, issuing from the back of the neck and the tail. Also, a fungus growing from the back of a *Noctua* pupa.

Mr. Fryer exhibited a curious variety of one of the *Geometridæ*, believed to be *Melanippe rivata*.

Mr. M'Lachlan, on behalf of Dr. Atherston, of South Africa, exhibited a pair of a very singular Orthopterous insect (belonging to the Acrydiidæ), which, in colour and in the granulated texture, so exactly mimicked the sand of the district as to render it almost impossible to detect it when in a quiescent state. The name of the insect was uncertain, but it was supposed to approach the *Trachyptera scutellaris*, *Walker*. Also some singular oval, flattened cases, open at each end, and from six to eight lines in length, formed of silk, to which was externally fixed a quantity of fine light brown sand. The cases were found under stones in sandy districts, and were stated by Mr. Charles O. Waterhouse to belong to a beetle of the genus *Paralichas* (one of the *Dascillidæ*). Also the cases of a species of *Oiketicus*, of peculiar structure; the inner lining of the tube was, as usual, composed of toughened silk, but to this was attached, externally, a quantity of fine sand, and outside this a number of small angular pebbles, only the tail-end bearing a few rather long twigs and species of grass stems: thus the cases differed from those of most species in which substances exclusively vegetable were attached externally, the addition of the pebbles making the cases (which were nearly two inches in length) unusually heavy.

The President read descriptions and exhibited drawings of two very singular forms of Coleopterous insects from Mr. A. R. Wallace's private collection. For the first, which belonged to the family *Telephoridæ*, he proposed the generic term *Astychina*, remarkable for the form of the two terminal joints of the antennæ, which were modified in one sex into what appeared to be a prehensile apparatus, different from anything in the insect world, but of which some analogous forms were found to occur in certain Entomostracous Crustacea. The other belonged to the family *Cleridæ*, and was named *Anisophyllus*, differing from all known beetles by the extremely elongated branch of the ninth joint of the antennæ.

Mr. Smith read descriptions of new species of Hymenopterous insects from New Zealand, collected by Mr. Charles M. Wakefield. The number of known Hymenoptera from New Zealand appeared to be about 48.

#### *Papers read.*

Mr. J. S. Baly communicated descriptions of new genera and species of *Halticinæ*.

Dr. Sharp communicated descriptions of a new genus and some new species of *Staphylinidæ*, from Mexico and Central America, collected by Mr. Salvin, Mr. Flohr, and Mr. Belt.

#### *New Part of 'Transactions.'*

Part I of the 'Transactions' for 1876 was on the table.—*F. G.*

### Notices of New Books.

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*The Birds of the North-West: a Handbook of the Ornithology of the Region drained by the Missouri River and its Tributaries.* By ELLIOT COUES, Captain and Assistant-Surgeon United States Army. Demy 8vo, 791 pp. 1874.

SINCE the time when the indefatigable John James Audubon was scouring America for subjects for his pencil the study of American Ornithology has been keenly pursued. So great is the number of species in the rich Avifauna of the Western Hemisphere that even to-day the ground is very far from exhausted, and the labours of ornithologists who may chance to be posted at some outlying station are still rewarded by the discovery of new species or of interesting hitherto-unknown habits of species already recorded. Wilson and Audubon knew only of two humming-birds visiting North-America; to-day eleven at least have been recognised, and observation will probably extend the list. Two years ago Dr. Elliot Coues, of the U. S. army, contributed a very important addition to the published works on American birds. His book was brought out at Washington at the Government Printing Press by the Geological Survey of the U. S. Territories, under the title of 'The Birds of the North-West,' and comprises a notice of all the birds detected as resident in or visiting the immense tract of country drained by the Missouri River and its tributaries, as well as monographs of the North-American Laridæ, Colymbidæ and Podicipidæ. It contains 790 closely-printed pages, and is full of observations of great interest on the habits and distribution of numerous American birds. Dr. Coues is fortunate not only in being a good observer himself, and one able to set down his observations in a lucid style, but also in having the advantage of several correspondents who, to judge from the extracts from their letters given in the Doctor's book, must be keen and able students of bird-life. The book is thus an ample treasury of information to the lover of birds, and we shall make no scruple to quote rather largely from its pleasant pages.

Like many recent writers on Ornithology, Dr. Coues is something of a systematist, and prefers to place the Passerine birds in the front of all the others, beginning with the Oscines, or singing

birds. He claims the first rank for these on account of the delicate structure of their vocal organs. It is like Art going before Power. The old arrangement which commences with the Raptorial birds springs from the instinct which deifies force. There is something higher than mere brute strength; therefore, place for the songsters! Although there are a number of these which enliven the woods and glades of America with their notes, yet it does not appear that there is any one which is, *facile princeps*, like our English nightingale.

Wilson's thrush (*Turdus fuscescens*) is praised for its song:—

“When its clear bell-like notes, resonant, distinct, yet soft and of indescribable sadness, fall upon the ear as we press through the tangled undergrowth beneath the shade of stately trees, we pause involuntarily to listen to music that for the moment makes us forget the terrible torture of body and vexation of spirit that we endure continually from the innumerable hosts of the scourge—mosquitoes.”

Another songster is the blue-gray gnat-catcher (*Polioptila cærulea*). Mr. Maynard, one of the Doctor's correspondents, thus writes of it:—

“I was walking in a narrow path through a hummock, which lies back of the old fort at Miami, Florida, and had paused to observe a female of this species, when I heard a low warbling which sounded like the distant song of some bird I had never heard before. I listened attentively, but could make nothing of it, and advanced a few paces, when I heard it more plainly. This time it appeared to come from above me, and looking upward I saw a male gnat-catcher hopping nimbly from limb to limb on some small trees which skirted the woods. Although he was but a short distance away, I was obliged to watch the motions of his little throat before I became convinced that this music came from him. It was even so, and nothing could be more appropriate to the delicate marking and size of the tiny, fairy-like bird, than the silvery warble which filled the air with sweet continuous melody. I was completely surprised, for I never imagined that any bird was capable of producing notes so soft and low, yet each one given with such distinctness that the ear could catch every part of the wondrous and complicated song. I watched him for some time, but he never ceased singing, save when he sprang into the air to catch some passing insect. The female seemed to enjoy the musical efforts that were accomplished for her benefit, for she drew gradually nearer, until she alighted upon the same tree with her mate. At this moment she took alarm, and flew a short distance, followed by her mate. As I walked away I could hear the murmur of the love-song till it became indistinguishable from the gentle rustling of the leaves around.”

Of the winter wren (*Anorthura Troglodytes*, var. *hiemalis*), the Doctor quotes as follows:—

“The song of the winter wren excels that of any other bird of its size with which I am acquainted. It is truly musical, full of cadence, energetic and melodious; its very continuance is surprising, and dull indeed must be the ear that thrills not on hearing it. When emitted, as it often is, from the dark depths of the unwholesome swamps, it operates so powerfully on the mind, that it by contrast inspires a feeling of wonder and delight, and on such occasions has impressed me with a sense of the goodness of the Almighty Creator, who has rendered every spot of earth in some way subservient to the welfare of His creatures.”

The Missouri sky lark (*Neocorys Spraguei*) appears to have the same habits as our English favourite:—

“Rising from the nest, or from its grassy bed, this plain-looking little bird, clad in the simplest colours, and making but a speck in the boundless expanse, mounts straight up on tremulous wings till lost to view in the blue ether, and then sends back to earth a song of gladness that seems to come from the sky itself to cheer the weary, give hope to the disheartened, and turn the most indifferent, for the moment at least, from sordid thoughts.”

The mourning warbler (*Geothlypis Philadelphia*), Townsend's fly-catching thrush (*Myiadestes Townsendii*), the purple finch (*Carpodacus purpureus*), the bay-winged bunting (*Poocetus gramineus*), and the fox-sparrow (*Passerella iliaca*), are some of the other favourites of the American wilds. We must quote a description of the song of one of these, the bay-winged bunting:—

“The charming song of the ‘vesper-bird’ has been fittingly described by one of the most enthusiastic and agreeable of writers upon birds,—I mean John Burroughs,—in his welcome little volume entitled “Wake Robin.’ ‘Have you heard the song of the field sparrow?’ he asks. ‘If you have lived in a pastoral country, with broad upland pastures, you could hardly have missed him. Wilson, I believe, calls him the grass-finch, and was evidently unacquainted with his powers of song. The two white lateral quills of his tail, and his habit of running and skulking a few yards in advance of you as you walk through the fields, are sufficient to identify him. Not in meadows or orchards, but in high, breezy pasture-grounds, will you look for him. His song is most noticeable after sundown, when other birds are silent, for which reason he has been aptly called the vesper sparrow. The farmer following his team from the field at dusk catches his sweetest strain. His song is not so brisk and varied as that of the song sparrow,

being softer and wilder, sweeter and more plaintive. Add the best parts of the lay of the latter to the sweet vibrating chaunt of the wood sparrow (*Spizella pusilla*), and you have the evening hymn of the vesper-bird—the poet of the plain, unadorned pastures. Go to those broad, smooth, up-lying fields, where the cattle and sheep are grazing, and sit down on one of the warm, clean stones, and listen to this song. On every side, near and remote, from out the short grass which the herds are cropping, the strain rises. Two or three long, silver notes of rest and peace, ending in some subdued trills or quavers, constitute each separate song. Often you will catch only one or two of the bars, the breeze having blown the minor part away. Such unambitious, unconscious melody! It is one of the most characteristic sounds in Nature. 'The grass, the stones, the stubble, the quiet herds, and the warm twilight among the hills, are all subtly expressed in this song: this is what they are at least capable of.'"

We find in the 'Birds of the North-West' that much care has been given to a description of the nests and eggs of the various species where they have been observed. It is well known that among American birds are some of the most skilful architects to be met with in the world. The beautiful Baltimore oriole (*Icterus Baltimore*), which has its name from its colours of black and orange being the livery of Lord Baltimore, once proprietor of Maryland, weaves its pensile nest close to houses almost everywhere in the States; while throughout the middle States the chimney swallow (*Chætura pelagica*) builds its home with so much cleverness that it is worth while to quote the account of it furnished by the pen of Dr. Brewer:—

"The nest of the chimney swallow is one of the most remarkable structures of the kind to be found among the handiwork of even this interesting family, nearly all of whom are far from being undistinguished for their architectural accomplishments. It is composed of small twigs of nearly uniform size, which are interwoven in a neat semicircular basket. In selecting the twigs with which to construct the nest, the swift seems to prefer to break from the tree such as are best adapted to its wants, rather than to gather those already scattered upon the ground. This is done with great skill and adroitness, while on the wing. Sweeping on the coveted twig, somewhat as a hawk rushes on its prey, it parts it at the desired place, and bears it off to its nest. This fact is familiar to all who have attentively observed its habits. Each of these twigs is firmly fastened to its fellows by an adhesive saliva, secreted by the bird, and the whole structure is strongly cemented to the side of the chimney in which it is built by means of the same secretion. When dry this saliva hardens into a glue-like substance,



apparently firmer even than the twigs themselves. In separating a nest from the side of a chimney, I have known portions of the brick to which it was fastened to give way sooner than the cement with which it had been secured. When moistened, however, by long or heavy rains, the weight of their contents will sometimes cause them to part, and precipitate the whole to the bottom. The young birds cling very tenaciously to the sides of the chimney, with their strong claws and muscular feet, and often save themselves from falling in such accidents by this means, even at a very early age, and before they have attained their sight. As the nest, even when undisturbed, soon becomes too small for them, the young leave it long before they are able to fly, and climb to the top of the chimney, where they are fed by their parents."

Birds are not given to adopt new fashions in building their nests hastily; we believe that the ring dove has made its slovenly nest just in the same way time out of mind; while the longtailed tit has always been equally skilful and painstaking over the beautiful structure it devises for its numerous brood. Dr. Coues, however, is able to instance some cases where the nest-building instinct has been modified, and where birds have been induced, through certain reasons of advantage to themselves, to deviate from their usual plan. The cliff swallow (*Tachycineta thalassina*) has abandoned the cliffs in many places, and now prefers to attach its nest beneath the eaves of cottages. The blue-headed Vireo (*Vireo solitarius*), a small flycatcher, according to Audubon, used to hang its nest between two twigs of a low bush, and construct it externally of gray lichens, internally chiefly of hair from the deer and racoon. In all nests of this species which have come under the notice of Dr. Coues the materials used have been almost exclusively—

"Clusters of male flowers of *Quercus palustris*, which, having performed their allotted function, don their brownish hue at the very period when they can be utilized. Here is evidently a change within a moderately short period, rendered necessary by external causes. This necessity may have grown out of inability to procure the favourite materials, or a desire for self-preservation. In the case of the species under consideration, it cannot be denied that the utter inability, without unnecessary physical effort, to procure the hair of the afore-mentioned animals, particularly in sections where *they* have been compelled to retreat before the advance of man, may have been one of the causes which have induced the change. I am satisfied, however, that it has not been the leading one, but that self-preservation has operated in this case for individual and family good. The adaptation of the

colours of the female bird to the tints of surrounding objects, during the trying period of incubation, and the establishment of certain resemblances to familiar external objects, are two of the ways in which it manifests itself."

In old times, before the forests had been thinned by the woodman's axe, the Baltimore oriole found in the dense foliage of the trees in which it placed its nest sufficient protection from the burning sun. But now that this shelter has been generally encroached upon, the bird has learned to weave an outer covering and roof for its nest: "They interweave and fabricate a sort of coarse cloth into the form intended, towards the bottom of which they place the real nest, made chiefly of lint, wiry grass, horse- and cow-hair." The peewit flycatcher (*Sayornis fuscus*) has supplied instances of deviation from the ordinary and characteristic form of nest built by this species; several nests found in a barn were more loosely constructed than others placed in exposed situations, the birds plainly perceiving the advantage of adapting their plan to the circumstances of the site. A correspondent of Dr. Coues, Mr. Gentry, actually succeeded in inducing a pair of cedar-birds (*Ampelis Cedrorum*) to modify their nests by supplying them with unaccustomed building materials:—

"While watching a pair of *Ampelis Cedrorum*, engaged in the building of a nest on a branch of an apple-tree, it occurred to me that, by supplying them with materials, I might secure a nest neater and more compact than those usually made. The birds entered into the project with readiness, and carried away every piece of coloured string and cotton fabric with which I supplied them. After I had ceased to furnish the materials they would fly repeatedly to the branch where the articles were deposited, as if imploring my services. The result was a nest firmer, more symmetrical, and more elegant in proportions than any I had ever observed. If instinct had been the controlling principle in this case, the birds would not have given my labours so much attention; but admitting that they had been actuated by reasoning faculties in their selection, the whole thing is perfectly plausible. Instinct is always the same thing; it never advances, never retrogrades; but reason tends to improvement, when it can serve a good purpose."

We may add, in confirmation of these last words of Mr. Gentry, the case of a wood-lark's nest which once came under our observation. This nest was discovered upon the ground in a rough field full of ferns, thistles and other weeds, and had eggs in it. Passing

the spot some few days later, we wished to see if the young birds had yet appeared, but nowhere could the nest be found, although we imagined an accurate mental note of the site had been made. At last, when we were wellnigh abandoning the search, the nest was seen close at hand, but so cunningly domed over by the birds with fern-fronds and grass that it might easily have escaped detection. Here was an instance where the birds, understanding that they were exposed to danger, had done the best they could to provide against it by altering the form of their nest in a manner which plainly revealed something of a reasoning power.

The following is a list of the birds which are best able to contend with the severity of a North-American winter:—

“The cold in winter becomes intense at Fort Randall, the thermometer sometimes marking thirty or forty degrees below zero. The surrounding country is ‘flat, windy, and uncomfortable,’ furnishing as bleak and dreary a prospect as can well be imagined. Even the shelter afforded by the thick undergrowth and low position of the river-bottom, defended as it is in a measure by bluffs and hills, is insufficient to allure any but a few of the hardiest birds to pass the inclement season. The river freezes solid, and the water-birds betake themselves elsewhere; some hawks and owls remain, indeed, but the other land-birds of the immediate vicinity, as far as I have made them out, may also be counted on the fingers. There are sharp-tailed grouse in plenty, and quails too, though these smaller birds sometimes freeze to death. There is a stray pinnated grouse now and then. Sorry-looking crows wing about and croak dismally, and gangs of magpies screech noisily through the trees. Snow-birds fleck the open, with shore larks, during a part of the season, and probably longspurs (*Plectrophanes Laponicus* and *ornatus*); troops of tree sparrows\* cover under the bushes. Cheery companies of titmice stand the cold, and hairy woodpeckers hammer at the old cotton woods as industriously as ever. A shrike is seen now and then on his perch; but hereabouts the short list ends.”

The two familiar species of American cuckoo (the yellow-billed and the black-billed) differ from our common English cuckoo in not being parasitic, and in building their own nests, untidy, loosely-arranged structures, in which there is rather an owlish style of bringing up the family. It is not unusual to find in the same nest an egg freshly laid, an egg or two more or less incubated, a young cuckoo just hatched, and a couple of others almost fledged.

\* Not our European *Passer montanus*, but *Spizella monticola*, the Canadian or tree sparrow of American ornithologists.

Eleven young cuckoos have been known to proceed one after the other from a single nest, and there is some interest in this fact, as it probably furnishes a clew to the number of eggs deposited in one season by parasitic cuckoos in the nests of other birds. It seems to be the rule that most birds bring off two families in the year; and if our common cuckoo, for instance, built its own nest it would lay from four to five eggs each time, so that we may consider that each female cuckoo entrusts eight or nine eggs to other birds to attend to. From being extra noisy before wet weather, the American cuckoos are commonly called "rain-birds." "Although not parasites, like the European species, devoid of parental instinct, they have their bad traits, being even worse enemies of various small, gentle birds, for they are abandoned thieves, as wicked as jays in this respect, continually robbing birds of their eggs, and even, it is said, devouring the helpless nestlings."

One of the most eccentric birds in the North-American list is a species of starling, the cowbird (*Molothrus pecoris*), which, like our cuckoo, is parasitic, laying its eggs in the nests of other birds, chiefly flycatchers and thrushes. Some mystery still clings to the progress of the foster-child thrust in this manner upon many victimised birds; for it has been found that in whatever nest it may be placed the egg of the cowbird is hatched before any of the eggs which are the lawful occupants, and that directly the young cowbird appears all these are wont to vanish, in whatever stage of incubation they may have been. It is supposed that all the time and care of the parent birds being taken up in providing for their suppositious offspring they themselves carry away their eggs, as now only encumbering the nest. Dr. Coues looks upon the cowbird as "an advanced thinker," so entirely does it dispense with all family ties. But how was this strange instinct first originated in the cowbird and various cuckoos? The Doctor accounts for it on a Darwinian hypothesis:—

"Ages ago, it might be surmised, a female cowbird, in imminent danger of delivery without a nest prepared, was loth to loose her offspring, and deposited her burden in an alien nest, perhaps of her own species, rather than on the ground. The convenience of this process may have struck her, and induced her to repeat the easy experiment. The foundlings duly hatched, thrived, and came to maturity, stamped with their mother's individual traits—an impress deep and lasting enough to similarly affect them

in turn. The adventitious birds increased by natural multiplication, till they outnumbered the true-born ones: what was engendered of necessity was perpetuated by unconscious volition, and finally became a fixed habit—the law of reproduction for the species. Much current reasoning on similar subjects is no better nor worse than this, and it all goes for what it is worth.”

The Doctor also suggests that as the parasitic habits of the various species of *Molothrus* operate injuriously upon the increase of many birds, “the special check thus provided may be intended to preserve the delicate balance of some of Nature’s forces.” His remarks upon this subject are very interesting, as they naturally bear upon the economy of the cuckoo, concerning which there is much yet to be learned. We therefore do not hesitate to quote further from what he has to relate of the cowbird:—

“It does not appear that the cowbird ever attempts to take forcible possession of a nest. She watches her chance while the owners are away, slips in by stealth, and leaves the evidence of her unfriendly visit to be discovered on their return, in the shape of the ominous egg. The parents hold anxious consultation in this emergency, as their sorrowful cries and disturbed actions plainly indicate. If their nest was empty before, they generally desert it, and their courage in giving up a cosy home results in one cowbird the less. Sometimes, even after there is an egg of their own in the nest, they have nerve enough to let it go, rather than assume the hateful task of incubating the strange one. But if the female has already laid an egg or two, the pair generally settle into the reluctant conviction that there is no help for it; they quiet down after awhile, and things go on as if nothing had happened. Not always, however, will they desert even an empty nest; some birds have discovered a way out of the difficulty—it is the most ingenious device imaginable, and the more we think about it the more astonishing it seems. They build a two-story nest, leaving the obnoxious egg in the basement. I want no better proof that birds possess a faculty indistinguishable, so far as it goes, from human reason; and such a case as this bears impressively upon the general question of the difference between reason and that faculty we designate by the vague and misleading term ‘instinct.’ The evidence has accumulated till it has become conclusive, that the difference is one of degree, not of kind—that instinct is a lower order of reason—the arrest, in brutes, at a certain stage, of a faculty reaching higher development in man. Instinct, in the ill-considered, current sense of the term, could never lead a summer yellowbird up to building a two-story nest to let a cowbird’s eggs addle below. Such ‘instinct’ is

merely force of habit, inherited or acquired—a sum of tendencies operating unknowingly and uniformly upon the same recurring circumstances, devoid of conscious design, lacking recognized prevision; totally inadequate to the requirements of the first special emergency. What bird, possessed of only such a faculty as this, could build a two-story nest to get rid of an objectionable deposit in the original single-story fabric? It argues as intelligent a design as was ever indicated in the creation of a building by a human being. No question of inherited tendency enters here; and if it did, the issue would only be set back a step, no nearer determination, for there must have been an original double nest, the result of an original idea. Nor is this wonderful forethought very rarely exhibited; considering what proportion the double nests discovered bear to the ordinary ones brought to our notice, among the millions annually constructed, we can easily believe that the ingenious device is in fact a frequent resort of the birds plagued by the cow-bunting. And how can we sufficiently admire the perseverance and energy of a bird which, having once safely shut up the terrible egg in her cellar, and then having found another one violating her premises, *forthwith built a third story?* She deserved better of fate than that her house should at last be despoiled by a naturalist. This was a summer yellowbird, to whom the price of passing thus into history must have seemed hard.”

Cowbirds are occasionally to be found in our aviaries, and even here they comport themselves strangely. It is most amusing to watch one when he is about to attempt any singing; he ruffles up his feathers and swells himself out as large as possible, and appears to be in labour of something very important, until at last one dismal croak is emitted, and the bird subsides until another effort of the same kind is felt to be required.

Some of our readers will doubtless recollect a controversy which raged a few years ago in the ‘Field’ respecting the habits of the water ouzel. It was then asserted by some who had never observed the bird very closely that its common feat of walking under the water was clearly impossible; that the structure of the bird, the laws of specific gravity, &c., &c., all forbade such a thing, and that it was all either a fable or an optical illusion. It is therefore interesting to find that the American dipper (*Cinclus Mexicanus*) is also guilty of the same impossible conduct. The description given of its habits by Dr. Coues would apply *totidem verbis* to any water ouzel frequenting our English moorland streams:—

“It is an odd little bird, both in its notes and manners, and attracts the attention of the tourist and miner, as well as the naturalist, from the

singularity of its movements. On being startled from the side of a brook, it flies off, flitting down the stream, close to the surface, uttering a rapid, chattering note; and having flown a certain distance, alights on a stone or drift-log, in or close to the water's edge. Upon alighting it begins bobbing up and down, bending the knees as though curtseying, and eyes the intruder suspiciously. Having satisfied itself of safety, it walks into the water, picking here and there, and, getting beyond its depth, spreads its wings and disappears beneath the surface. Apparently as much at home under the water as above, it flies some distance beneath the surface, and stays under for a minute or more. At times it alights on the surface of the water and floats down the rapid stream like a cork, till it has found footing. In winter it frequently goes beneath the ice, walking with the utmost composure, and re-appearing at some air-hole a few yards off. \* \* \* \* \* Although its ordinary note is the rapid chatter referred to before, it has a very beautiful song, which it utters, however, very rarely, and then only in August, after the young birds are able to shift for themselves. Like the hermit thrush, it seeks the wildest, darkest ravines, and is very timid while singing. Its song is clear, sweet and varied, more wren-like than anything else, yet peculiarly its own, and, only to be heard amid the most romantic scenery mingled with the music of mountain torrents, has a charm that is wanting to other and finer songs."

We have only space for one more extract from the Doctor's work, and this shall be given to his most interesting observations on the wings of humming birds, those feathered gems of the New World:—

"The wings are remarkable in several respects. In general they are thin, sharp and pointed, with long, stiff, curved primaries, rapidly graduated, and short secondaries, resulting in the shape especially to be called falcate. They have but six remiges, in addition to the ten primaries. The upper arm-bone is extraordinarily short; perhaps representing the extreme of this condition among birds. The breast-bone is very large, and has an enormous keel; this is in relation to the immensely developed pectoral muscles that move the wing. The whole conformation illustrates perfectly a well-known law, yet one not often mentioned, respecting the movements of the wing of a bird, *viz.*, that the nearer to the body the longest quill-feather is, the more rapidly is the body moved. We will assume, for example, what is very near the truth, that a humming-bird and an albatross have about the same relative length of wing in the 'hand' or pinion portion that bears the ten primaries, and the same relative length of these quills. In the albatross this portion of the wing is widely separated from the body by the length of the humerus and fore-arm; in the former, the reverse extreme exists; and

we see the result in the long, measured sweep of the ocean-bird's wing and the rapid strokes of the others. This is in strict accordance with a mechanical law respecting the ratio between time of motion and distance traversed. Given, say, a hummer's wing two inches from flexure to tip of first primary, and one inch from flexure to shoulder-joint; this would make the point of the wing describe an arc of a circle with a radius of three inches; and a certain amount of muscular contraction effects this in a certain time. Now, lengthen fore-arm and upper-arm till they are each about two inches long, which would be something like the relative lengths in an albatross' wing; this would make the point of the wing move in an arc of a circle with a radius of ten inches. Now, the muscular force remaining the same, it is evident that the point of the wing could not move through this much larger arc in the same time; *i. e.*, the wing-strokes would be necessarily slower. It is interesting to observe how, in some other birds, a similar result is brought about by different means. In a partridge, for instance, without special shortening of upper-arm or fore-arm, the longest quill-feather is brought nearer the body by the roundness of the wing, that is, the successive shortening of several outer primaries; and this bird, as is well known, makes correspondingly more rapid wing-beats, and vigorous, whirring flight. In the humming-bird, the quickness of the wing-vibration reaches the maximum; so rapid is it that the eye cannot follow the strokes, but merely perceives a film on each side of the body. The flight of the bird is also the most rapid; frequently the eye cannot follow the bird itself. It is almost needless to add that the peculiar sound, from which the family takes its English name, is not vocal, but produced by the wings, just as it is in the case of so many insects."

We shall probably return again to the 'Birds of the North-West.' There are some amusing life-pictures of various Totanidæ, a group of birds largely represented in America, which we should be glad to make extracts from. For the present we bid Dr. Coues farewell; our difficulty has been in so much that is interesting to select passages for quotation.

MURRAY A. MATHEW.

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*A few Ornithological Notes from Guernsey and some of the other Channel Islands, from the 3rd to the 19th of June, 1876.*  
By CECIL SMITH, Esq., F.L.S.

FIRST amongst the birds to be mentioned is the Iceland falcon, recorded by Mr. Couch in the June number of the 'Zoologist' for



this year (S. S. 4953). Though killed some time before my visit to the islands, I mention it here, as Mr. Couch's note leaves it rather doubtful whether the bird was an Iceland or a Greenland falcon, and until I saw it I had some doubts about it myself; it is, however, an Iceland falcon, an adult bird, and Mr. Couch informed me proved on dissection to be a male. It was killed on the little island of Herm on the 11th of April. Another bird of the same kind was said to have been seen with it: the pair were occasionally seen about for some time before this one was shot. The island of Herm is about three miles from Guernsey, and is rented by a gentleman who preserves the game. This game proved a great attraction to the two falcons, and the keeper saw either this one or its companion kill several pheasants before he shot it. Although the Channel Islands are an extreme southern latitude for the Iceland falcon—or, indeed, for either of the three white northern falcons—to be found in, even as an occasional straggler, would it be too great a stretch of imagination to suppose that these birds, having wandered so far from their home,—and finding pheasant a good substitute for ptarmigan, and the season getting on,—might, if unmolested, have remained to breed?

I also saw at Mr. Couch's a female hen harrier, which had been killed at Herm about the same time as the Iceland falcon. There were also in Mr. Couch's shop three bartailed godwits, which he had stuffed for the keeper at Herm: these had all been shot in that island in May, out of a considerable flock which seems to have passed over the islands about that time: one of these birds was in the most perfect breeding plumage, the other two were hardly so far advanced.

As we went outside the Caskets on the passage to Guernsey, there was very little to be seen in the bird way—only a few puffins near those rocks: either of the other passages between the Caskets and Alderney would have been more interesting.

On the rocks at the south end of Guernsey there was a large colony of herring gulls who had taken possession, for breeding purposes, of all the available portions of the rocks not previously occupied by the shags, who were also very numerous. The herring gull appeared to be the only gull breeding here: I did not see even a single lesser blackback amongst this colony of herring gulls. By far the greater part, if not all, the shags had hatched, and some of the young were nearly as large as their mothers, who stood

beside them as if to guard them from slipping off the rocks; a few were more advanced and had taken to the water. None of the herring gulls had hatched, but most of them appeared to be sitting.

There seems to me very little doubt that a few pairs of turnstones breed every year, either on Guernsey itself or on the outlying rocks. On the 8th I saw a pair in full breeding plumage in Lanresse Bay. I saw them again about the same place on the 16th. Besides this a friend showed me two eggs which he had taken on the rocks to the north of Herm: these seem to me to be certainly turnstone's eggs—at least they closely resemble, both in measurements and colour, all the other turnstones' eggs I have seen. On other occasions I have seen the old birds about with their young in July, and shot one of the birds out of such a flock. In spite of this I have hitherto been rather sceptical as to the turnstone breeding in the Channel Islands; but the eggs from the rocks to the north of Herm,\* and the two birds which I saw about in Lanresse Bay, which I think had their nest on an outlying rock, have pretty well convinced me that the turnstone does breed in places on or near Guernsey; and indeed I do not quite see why it should not, as it appears to breed in the same sort of places still further south in the Azores and Canaries.

I saw several pairs of Kentish plovers about in some of the bays in the low part of Guernsey, and watched a pair for a long time near Cobo Bay: they certainly had eggs or young about somewhere, as they showed great anxiety, and exercised all the usual plover dodges, to draw one from the nest. A few days after I went with a friend to look up the same pair of birds, and there they were about the same place: deluded by them, my friend set his dog after one, thinking it was a wounded bird, and, having drawn the dog a good way off, of course away went the bird: after that there was very little chance of finding the nest, as though the birds flew round, they took care not to go near their nest while we and the dog were about.

I did not see a single ring dotterel all the time I was in the islands, and only one small flock of purres near the Vale Church; these were in a flock, and not in pairs as if they were breeding, like the turnstone and Kentish plover. There were a good many

\* I could not manage during my stay to get to these rocks, or I might have made the thing certain.—C. S.

choughs and a few oystercatchers breeding in the rocky part of the island.

On the 10th I went over to Sark, but did not see much there—a few puffins on the passage, and a large number of herring gulls and shags breeding in every available place on the rocks; there were a few lesser blackbacks about, but very few in comparison to the herring gulls. There were innumerable swifts about the Coupée, and a few choughs; these were not so numerous as in Guernsey, but jackdaws were more so.

On the 13th I went to Alderney. Herring gulls and shags were breeding in considerable numbers about the rocks, but very few lesser blackbacks amongst them, and I could not be sure that these few had nests. The jackdaws seem quite to have taken the place of the choughs here: I did not see a single chough: the jackdaws, however, were numerous.

On the 14th I paid a visit to the little island of Barhoe, on the other side of the Swinge passage. I went here with the idea of hunting up the stormy petrels and their nests; but in this I was very unsuccessful, only finding one broken egg and part of a dead bird. I did find out, however, what had become of the lesser blackbacks: these gulls were now very conspicuous by their absence, both in Guernsey and Sark, and even in Alderney itself, though at other times of the year there were generally a fair proportion mixed with the herring gulls; but at Barhoe, a small rather flat rocky island, they had congregated in large numbers, almost to the total exclusion of the herring gulls, of which there were only two or three scattered pairs to be seen. The nests of the lesser blackbacks were scattered all over the island, some being placed on the bare rock and some among the bracken and thrift, the only vegetation. Scanty, however, as was this vegetation, it afforded a precarious subsistence to a good many rabbits, who bred partly in the crevices of the rocks and partly in burrows made in the shallow soil out of which the bracken and thrift grew. So thickly strewn were the gulls' nests about the island that it was difficult to walk amongst the fern without treading on the eggs, and the white heads and yellow bills appeared everywhere craning up to look at the intruder. The eggs varied very much both as to ground colour and markings; some were a pale blue, some olive-green and some brown: the pale blue and a few of the greenish ones were freckled all over with small dark marks, almost or quite

black; the rest generally had larger markings, not quite so dark; in most cases these markings were gathered round the larger end. Besides the gulls there were a few oystercatchers and a large colony of puffins breeding. The puffins must have led the rabbits rather a life of it, as they had taken possession both of the burrows and of the crevices of the rock. The puffins seem to have been rather irregular in their proceedings, for some had hatched, and the young were nearly ready to quit their holes, and some of the eggs were quite fresh. None of the gulls or oystercatchers had hatched, though the eggs of some were all but ready to hatch. I did not see any razorbills or guillemots breeding at Barhoe, or indeed at any of the islands: I only saw a few scattered birds on the passage to Alderney, and was told they bred on a small steep rock called Ortaek, between Alderney and the Caskets. I also saw one great blackback on the passage to Alderney: he looked a tremendous size through the thick fog. There were no great blackbacks breeding at Barhoe, but this one might have had a nest either at Ortaek or on the rocks to the north of Herm.

Before concluding, I may remark that I believe the Iceland falcon to be quite a fresh addition to the list of Channel Island birds. Professor Ansted, I know, mentions a gyr falcon, but gives no date or particulars, so there may be some mistake about it, or it may have been a Greenland falcon, in which case the islands would be able to claim two of the northern falcons as occasional stragglers.

CECIL SMITH.

Bishop's Lydeard, July 10, 1876.

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*Ornithological Notes from Devon and Cornwall.*

By J. GATCOMBE, Esq.

(Continued from Zool. S. S. 4993.)

JUNE, 1876.

*Herring Gulls and Peregrine Falcon at Wembury.*—On the 12th of June I was at length able to visit the breeding-place of the herring gulls at Wembury, near Plymouth, and found them nesting as usual, but not in such large numbers: notwithstanding which I think there were as many, if not more, young birds to be seen than I had observed on any previous occasion during the last

few years. The day was exceedingly bright and hot, and the poor little things were in some instances standing bolt upright on the ledges of the rocks, in the face of a blazing sun, with their necks stretched and mouths wide open, as if gasping for breath, whilst others were lying huddled two or three together in niches or fissures of the cliff; and a few, on finding they were watched, would immediately try to conceal themselves behind stones or plants: they generally, however, stand or lie perfectly motionless as long as the intruder remains. Judging from the number of egg-shells lying about on the grassy summit of the cliff, I should say the nests had been robbed to some extent, probably by jackdaws, which abound, breeding close by and among the gulls. Directly I arrived on the cliffs three peregrine falcons made their appearance, flying forward and back, but not very near, and these I at once knew, by their comparatively small size, to be young ones of the present season. Soon afterwards the old female came up with a rather large bird in her talons, upon which the young ones, with loud cries, immediately began swooping and dashing at her so furiously, in their endeavours to snatch the prey from her grasp, that she was compelled to fly across the water to the opposite cliffs, closely pursued by her hungry and eager progeny, where no doubt the spoil was divided. I also saw the old male peregrine, which flew round continually, making a great noise until I left the place. I think the alarm-note or cry of the peregrine on being disturbed during the breeding season is the most angry and menacing of any bird I know. On the 20th I again visited Wembury, and found the young gulls much grown, but saw only one peregrine, which was adult, the three young ones having apparently left the neighbourhood. I noticed the remains of several young jackdaws on the cliffs, which had evidently been torn in pieces by some bird of prey, no doubt the peregrine. I also picked up many large pellets or castings, which I examined, and found them to consist chiefly of rabbits' fur. A friend informs me that there is another colony of herring gulls nesting a few miles further up the coast, which locality is also frequented by peregrines, and that he has often seen them swoop towards the nests, which the parent gull would immediately cover with her wings, in the manner of a domestic fowl.

*Water Ouzel and Kingfisher.*—June 21. Observed several young water ouzels on the rocks and stones in the Rivers Lydd and Tamar: they were as large as the old ones, but with the whole

under parts light in colour. Two pairs of kingfishers were constantly passing up and down: they had evidently nests and young in the neighbourhood.

JOHN GATCOMBE.

8, Lower Durnford Street, Stonehouse, Plymouth,  
July 7, 1876.

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*Ornithological Notes.* By H. M. WALLIS, Esq.

*Scarcity of the Razorbill.*—On the 2nd of June, 1875, I visited Handa, Sutherland, and it may interest Mr. Gurney to know that there were countless thousands of razorbills breeding there then, and unless something very destructive to the species has occurred during the past year, they are probably breeding there now. So keen appeared to be the competition for eligible sites that this unfortunate bird was driven to lay in the most unwise places. I saw two eggs kicked off by the bird in leaving the ledge, and many deposited in places where incubation seemed impossible, and from whence the first movement of the chicks would precipitate them. Whilst climbing it was constantly necessary to move eggs occupying the only available foothold. So much for numbers. The guillemots monopolised all the best ledges, the puffins had all the holes, and as the kittiwakes had filled up the next best places with their nests, only the upper thirty or forty feet of the cliff was left for the razorbills, and there they bred with little competition from other species. From the number of shells on the grass at the summit it seemed the gray crows were fonder of their eggs than of those of the other birds—another reason for their scarcity, if they had been scarce there. Having only observed the birds from the top, and a few yards down, I cannot say what proportion of razorbills bred on the lower half of the cliff: if I might hazard a guess, I think the proportions of razorbills, guillemots and kittiwakes breeding on the upper half were as four, five and two, or thereabouts, but these proportions varied at different points where shags and herring gulls appeared as disturbing elements. The Sea Birds Protection Act is a dead letter in Sutherland, and I heard of *two boat-loads* of dead birds being taken back to Lewis (for food or fuel?), the result of a day's steady shooting by the fishermen.

*Puffin*.—I observed the running power of the puffin, mentioned by Mr. Tuck in the June number of the 'Zoologist' (S. S. 4958), and that the bird took the air without changing the upright position of its body, only gaining a horizontal attitude after a rapid descent of some feet and hard flapping. This bird waddles much in running, and gives one the impression of being bow-legged. At the date above named (June 2, 1875) I saw no young birds, and all the eggs taken were fresh or nearly so.

*Black Guillemot*.—I saw no black guillemots at Handa, though a friend tells me he found them further north.

*Habit of the Common Sandpiper*.—The following incident struck me as unusual at the time I witnessed it, and I should be glad of any confirmatory observations from your readers:—On the 11th of May, this year, I flushed a pair of the common sandpiper from one side of a tiny bay of a Scotch loch. The birds crossed to a low rocky point on the other side of the bay with apparently the intention of settling, and had almost reached their destination when a merlin dashed at them from the last stone on which it had been sitting so motionless as to escape both their attention and my own. For some seconds the doubling and turning was incessant, the falcon keeping them together, and preventing either from escaping, and all three being within a few inches of the surface of the loch. Suddenly the bird which he seemed in the very act of grasping dived from the wing most curiously, without any apparent splash. The merlin instantly turned upon the second, which was perhaps three yards distant, and which immediately acted in a similar manner: after hovering for a moment over the spot where his quarry had vanished, the falcon flew off, and first one and then the other sandpiper rose, sat on the surface for a little, whistled to one another, and taking wing came straight towards me and alighted just where they started from. The distance traversed under water was about six yards. If this is a common habit, as I imagine it is, of this bird, it explains the apparent immunity it seems to enjoy from destruction by hawks; for whilst one is sure to come across remains of curlew, grouse, lapwing, or golden plover in an hour's ramble in Sutherland,—so killed and picked that a hawk's work is recognised,—I never saw remains of this, the commonest bird of all. Can any of your readers say if this bird breeds along the Thames? One is almost sure to flush them whilst boating any day between May and August; I heard one

whistling on the 4th instant—it was too dark to see—whilst coming home from Henley Regatta.

H. M. WALLIS.

Reading, July, 1876.

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*Aquarium Notes.* By JOHN T. CARRINGTON.

I HAVE thought from time to time that a series of jottings upon current news relating to Aquaria would be useful to those interested in Marine and Fresh-water Zoology and Botany, and the maintenance of animals and plants in aquaria. I therefore venture to contribute the first attempt to systematically chronicle the passing events of the "Aquarian World."

I am pleased to inform your readers that aquarian studies are rapidly advancing, and the general popularity of the subject is greatly on the increase; even one or two somewhat disappointing temporary failures, which in every new science are sure to occur, will I doubt not only prove incentives to greater exertions, and will make public aquaria not only permanent institutions for the education of the people, but convenient schools for scientific men, in which to study creatures and plants which cannot be observed with sufficient closeness in a state of nature. As an example of what I mean, I may say that Dr. Carpenter and other eminent scientific men have been studying at the Naples Aquarium, which has been so efficiently established by Dr. Anton Dohrn: of this I shall write on another occasion when referring to a very able lecture recently given by Dr. Carpenter, at the Zoological Society's lecture-room, Regent's Park.

To return to this increasing popularity, it will interest your readers to know that there are now thirty-three large public aquaria, either actually building or about to be built; three of these are in Australia, where the feeling in their favour is so strong that they are receiving Government aid; this is also the case in America in one instance at least. The New York public have long desired an institution of this character: they are now to have one in their Central Park. In Europe there are already several, but many more will soon be added; even in cities which now possess them they are being constructed on the improved circulating system of that father of aquaria, Mr. Lloyd: he is consulting naturalist for these foreign aquaria.



In Great Britain almost every town or watering-place of any note is to have its aquarium, the North of England, with its usual energy, eminently taking the lead.

Scotland, so far from being behindhand, has, within the last few days already opened its first, at that charming little place, Rothesay, so much frequented by the people of Glasgow. There, through the influence of its patron, the Marquis of Bute, has been established an aquarium, which, when quite complete and in working order, will not only be an ornament and attraction to the town, but I have every reason to believe will be of great scientific value, for on this rock-bound north-west coast of Scotland is a grand marine fauna. This, without some aid and central base for operations, such as this aquarium will afford, could hardly ever be worked out satisfactorily. Rothesay will I hope prove to be a famous place in future aquarium reports, especially in its record of rarities and new species discovered in Britain. It is fortunate in having a curator, Mr. Barker, who has his "heart and soul in the cause," and from whom we hope much. Already he reports to me that the northern stone crab (*Lithodes arctica*), which, up to the present time, has only been reported as British from one or two isolated captures by the trawlers of Yorkshire and Lincolnshire, has been discovered in some numbers by the collectors sent out on behalf of this aquarium. Large *Nephrops Norvegicus* also have been found abundantly by them: this species, although known by the name of the "Norway lobster," has hitherto been found in Britain most commonly on the eastern Irish coast, from whence the English, and even some of the continental, aquaria have been supplied. In Dublin I have often seen this species sold in the streets, after being boiled, as "prawns," at a few pence per dozen; they are a very great delicacy, and quite equal to the common lobster (*Homarus vulgaris*) as an article of food. As an aquarian animal they are very attractive; their bright colour, their dignity of bearing, their habit of throwing up great earthworks for the protection of their hiding-places—make them great objects of attraction to visitors.

At the Rothesay Aquarium marble has been greatly used, for the first time, in the construction of the tanks. This I believe is a very important application, one which will be largely adopted in place of slate, as at present used for smaller tanks. Slate, from its laminated structure, is liable to split when any lateral pressure is

put upon it, while marble remains intact. Again, though slate is somewhat unsightly unless enamelled, it unfortunately happens that this so-called "enamel" chips or peels off under the action of any sea-water with which it may come in contact; and the tanks then become unsightly and untidy in appearance. My readers will naturally say that the enamel being outside the tanks, it should *not* come in contact with the sea-water; but all who know the great difficulty of making large show-tanks absolutely water-tight will see the inadvisability of using a material which, in the present immature stage of aquarium construction, adds greatly to the first cost, and then afterwards only adds to the many complications of management.

Unfortunately the aquarium at Rothesay suffers from the same failing as every other aquarium yet constructed—namely, the miserable leakage of water from reservoirs and tanks. It seems such a pity that, for the sake of a comparatively small fee, Aquarium Companies have hitherto persistently refused to engage a really competent engineer to superintend the earlier stages of construction. Had this been done there is little doubt that much anxiety in the management would have been saved, besides the disastrous consequences of the wear from leakage, which, from its very insidiousness, is a dreadful enemy to cope with. Aquarium construction has so far been treated entirely from an architectural stand-point, whereas it is eminently engineering, and large sums of money have been spent upon external decorations, which earn nothing, while tanks, pipes, and especially reservoirs, being out of sight, are neglected, to the infinite damage of future dividends. In fact, it amounts to this, that a well-constructed aquarium is a most valuable property, which, with little outlay after first cost, will earn large results, both biologically and financially; while a badly constructed one is a veritable "white elephant."

The most valuable addition recently received to the animals now exhibited in Britain is several very fine Italian eels (*Muræna Helena*), which, with other animals, came from Naples to the Crystal Palace Aquarium, all of them being successfully transported on this long voyage by Captain Badcock, of the S.S. 'Aurora,' who has before, with great care and generosity, in this manner lent a helping hand to Science. This handsome fish has rarely been recorded as British: it is described by Yarrell as the "Murry," while Mr. Couch calls it the "Muræna." The figures

of this species in both works are very poor, Yarrell having copied the original drawing, as he avows, through the kindness of Mr. Couch. This drawing was taken from a dead specimen, as indeed seems to be the case throughout Couch's work: certainly many of the figures represent the colours of dead fish, and give no idea of living examples of the species represented. The Murry is a much handsomer fish than the figure suggests, both in symmetry and colour. At present these are the only live specimens exhibited in Britain. I ought to add that one other—brought in the same manner by the same gentleman eighteen months ago—is in good condition, having grown much, in a tank in the same aquarium. In this consignment is also a fine Callappa crab and a most lovely specimen of *Anthea cereus*: if the latter is a type of the Mediterranean sea-anemones, they must indeed be beautiful.

Recently the literature of Aquaria has been greatly added to. In the 'Field' there has been a somewhat lively correspondence upon the rival systems,—that of Brighton, which consists of changing the water at frequent intervals, and the system of the Crystal Palace Aquarium, where the water is *never* changed, but simply circulated through the tanks from a large cool and dark reservoir containing several times more water than that exhibited. By this system the water is thoroughly aërated and the temperature is kept even. In this correspondence in the 'Field' the arguments in favour of the Brighton Aquarium system have been answered and exploded.

But by far the most valuable contribution is that of Mr. W. Alford Lloyd, which appeared in the July number of the 'Popular Science Review,' entitled "Aquaria; their Present, Past and Future." In this exhaustive article Mr. Lloyd, in his usual happy style,—commencing with a story of how, eighty-six years ago, the late Sir John Graham Dalyell used to supply his aquarium (then without a name) with water,—goes carefully through the somewhat complicated history of the rise and progress of aquaria. Then, so differently to some others, who seem only to look upon aquaria as a means of raising money, he shows why his system is such a great success, by a careful and masterly explanation of the bearing of physics, chemistry and engineering upon the question. I make no apology to my readers for quoting the following extracts from his paper:—

“If it be urged that small reservoirs may be made to do as makeshifts, because money and space for them cannot be afforded, there is some kind of reason in *that*. But if it be averred to the contrary *as a principle*, then that indicates a singular amount of no knowledge which, if possible, is something more than wonderful. My arguments are founded on the clear and simple obviousness of the fact that a given quantity of dead organic matter diffused through a large quantity of water sullies it less than if it were small, and on the necessity of maintaining an evenly moderate temperature for the reasons already given, avoiding the high and low ranges of the atmosphere; and I show that the easiest manner of attaining this is by having a large reservoir sunk in the earth at a distance giving a known temperature. Thus, referring to the sunk thermometers at the Greenwich Observatory, with a thermometer having its bulb on a level with the scales of the sunk instruments, the lowest (January) mean monthly reading in a named year was  $36\cdot4^{\circ}$  F., with a mean daily range of  $6\cdot9^{\circ}$  F.; and under the same circumstances the highest (July) mean monthly reading was  $66\cdot9^{\circ}$  F., with a mean daily range of  $19\cdot9^{\circ}$  F. But from the showing of other thermometers whose bulbs are sunk in the ground to the respective depths of one inch, three feet, twelve feet, and twenty-five feet, the temperatures become strikingly even for the whole year through—so much so, that at twenty-five feet deep the mean monthly reading of January was  $52^{\circ}$  F., with a mean daily range of only  $0\cdot025^{\circ}$  F.; and the mean monthly reading of July was  $49\cdot0^{\circ}$  F., with a mean daily range of but  $0\cdot06^{\circ}$  F., the highest mean daily range at that depth in any month of the year being  $0\cdot07^{\circ}$  F. in August.”

\*            \*            \*            \*            \*            \*

“Indeed if a reservoir were one hundred times as large as the show tanks, and was kept at  $50^{\circ}$  F., then the tanks might be in an atmosphere at  $212^{\circ}$  F. (the heat of boiling water), and yet the water would be only  $52\cdot12^{\circ}$  F., and the most delicate English animals would live in it.

In a note to a preceding passage Mr. Lloyd supplies the following further particulars as to the temperature of the water in the Crystal Palace Aquarium:—

“The water in the Crystal Palace Aquarium has a very small range of from  $52^{\circ}$  F. in very cold, to  $61^{\circ}$  F. in very hot, weather. In April last (1876) we had, at Sydenham, blue skies, a bright sun, and an oppressive warmth, with  $74^{\circ}$  F. in the shade, on the 8th of the month. On the 12th, four days after, we had a leaden firmament, and clouds of blinding snow and sleet driven by a bitter north-east wind, with the thermometer at  $29^{\circ}$  F., giving so great a range as  $45^{\circ}$  F. within a week. Yet the water in the aquarium had a range of only  $1^{\circ}$  F. =  $54^{\circ}$  F. to  $53^{\circ}$  F.”

He then proceeds to give some interesting details:—

“Yet in this comparatively small quantity (120,000 gallons) of unchanged fluid we have, from September, 1871, to March 31, 1876 (four and a half years), given to the animals in it the following enormous quantity of food without the water being otherwise than always sparklingly clear:—

1. Sandhoppers ( <i>Talitrus</i> ), in pounds weight -	-	-	12
2. Shrimps ( <i>Crangon</i> ) in quarts -	-	-	4735
3. Crabs ( <i>Carcinus</i> )	{ in gallons	-	137
,, ( <i>Cancer</i> ), large	{ „ numbers	-	1450
4. Scallops ( <i>Pecten</i> ), large, in numbers	-	-	32
5. Oysters ( <i>Ostrea</i> ) „	-	-	2195
6. Cockles ( <i>Cardium</i> ), in gallons	-	-	18
7. Mussels ( <i>Mytilus</i> ) „	-	-	3544
8. Whelks ( <i>Buccinum</i> )	{ in gallons	-	7
,,	{ „ numbers	-	100
9. Fish, chiefly whiting ( <i>Gadus</i> ), in pounds weight	-	-	3159
10. Smelts' roe ( <i>Osmerus</i> ) „	„	-	14
11. Green seaweed ( <i>Ulva</i> ), purchased „	-	-	400
12. „ „ ( <i>Conferva</i> ), grown in tanks, quantity unknown.			

And, in addition, we obtain occasional and unrecorded supplies from neighbouring fishmongers when the regular supply runs short. Of this animal food, all but the denominations 9 and 10 are kept alive in a series of reserve tanks till the moment of being eaten. Scarcely any uneaten food, and never any excrement, is manually removed; but all which is not consumed by the animals is chemically dissipated, without filtering, by the enormous volumes of air constantly being injected into every tank by machinery, the speed of which is accelerated (*i. e.*, the oxygenation is quickened) when the water is slightly turbid from an excess of organic matter. All this I have explained more at length in the ‘Official Handbook to the Crystal Palace Aquarium,’ and in ‘Observations on Public Aquaria,’ both published at the Crystal Palace. It is this power of oxygenating, or consuming, or burning, at a low temperature, termed by Baron Liebig ‘*eremacausis*,’\* which expresses the real work done in an aquarium, and the force necessary to do that work.”

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“Of the general influence of aquaria on Zoology we have curious evidence in Mr. Gosse’s most excellent ‘Manual of Marine Zoology for the British Isles,’ published in two volumes, in 1855—1856, in which the author enumerates 1785 species, from sponges to fishes, and of which he

\* From the Greek “to remove by burning, or by fire.” The words “caustic” and “cautery” have the same derivation.

figures 779 genera, always preferring to draw from living animals whenever possible. Now, as at that period a larger number of aquarium animals had passed through his hands than through those of any other person, he may be presumed to have, up to then, seen more of them alive than anyone else. Yet he enumerates only 201 as having been drawn from life, as he avowedly preferred doing, and of these but a dozen were fishes, others being, for the most part, small creatures, or those which are easily maintained, and do not need large tanks and elaborate machinery. But, during the twenty years which have elapsed since 1856, I have seen and handled, and had under my care, in England, France, and Germany, about 433 species of British marine animals, of which 112 were fishes.

“There are few things more trying to that great virtue—patience—than a large public aquarium, especially in its preparation, before it is ready for the reception of animals. It is to this lack of patience on the part of the directors of the Royal Westminster Aquarium, and to their absolute refusal to allow me to have proper engineering assistance during its construction, and to general mismanagement, that its present confused state, and its unsatisfactory condition in every way, is due. On this account I resigned my post of adviser to the Society, as I found it useless to advise when advice was recklessly disregarded. Aquarium work, being hydraulic engineering on a small scale, is essentially the work of an engineer, and not that of an architect, unless he is also an engineer and a mathematician. There is for aquaria a great and important future, both as regards their influence on science, and as pecuniary speculations, if indeed, as I much doubt, there can be any real severing of these two interests. Success, however, must always be the result of a careful study and representation of what nature does, and of a strict avoidance of the recent heresies to which I have in this communication adverted.”

My foregoing reference to Sir John Graham Dalyell reminds me that some little time ago there were published in the ‘Zoologist’ some letters from Sir John’s sister to Mr. Lloyd. These letters are now being reproduced in facsimile.

JOHN T. CARRINGTON.

Crystal Palace Aquarium,

July 20, 1876.

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**Wild Cats: period of Gestation.**—My old pair of wild cats have bred again this year, two healthy kittens being born on Sunday morning, the 21st of May. I mentioned in the ‘Zoologist’ (S. S. 4868) that the gestation was nearly—*i. e.*, perhaps as much as ten hours less than—sixty-eight days; and as this year the gestation was—to within an hour or two, at most—the same length, is it jumping at conclusions in too great a hurry to suppose

this to be the regular time? I am happy to say that up to the present time the twins continue to flourish, and on the morning of the 18th of June—they being on that day four weeks old—I for the first time found them out, in the outer part of the cage. A point I forgot to mention in my last letter is the great difference in size at birth of the wild and domestic breeds, which exceeds, or is at least more noticeable, than that between the adult animals. Will Mr. Harvie-Brown tell us whether the wild cat he mentions (S. S. 4825) has presented her owner with the promised litter of “real ringtailed squealers,” and if so whether he knows the length of the gestation? I wrote to Mr. Stuart, who has charge of Lord Seafield’s wild cats at Balmacaan, but he has never noticed the length of the gestation, and I know of no other place where they have been bred in captivity.—*Alfred Heneage Cocks; 42, Great Cumberland Place, Hyde Park, June 27, 1876.*

**Pied Rats.**—There is at present at this place a brood of pied rats (*Mus decumanus*)—how many I do not know, but I have shot two to stuff, and there are at least three others left. They are all marked in a similar manner, having a patch of white on each side covering the ribs.—*John Selater; Castle Eden, July 20, 1876.*

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**Our Summer Migrants in Cornwall.**—In the course of upwards of thirty years’ observation of our spring songsters, I never remember such a scarcity in numbers; nor such a paucity and poverty of song in the few that have visited us. The abrupt shortened song of the blackcap scarcely amounted to a song, and rarely exceeded five notes, and there was a continued feebleness in the expression of the passages which seemed to belong to every individual. The whitethroat was very late; the song was heard on the 3rd of May for the first time, and, singular enough, I heard the blackcap’s first attempt at song on the same day. The chiffchaff’s immigration was the latest I ever remember, but I speak entirely from its song: it is quite possible that it might have been with us all the winter, which is not unfrequently the case—but my notes apply to the first appearance of the songs of birds: I remarked the song first on the 3rd of April, and only once, but on the following day they were generally distributed all about in every thicket. I do not think that there are more than half-a-dozen willow wrens in the district; they were very late in their arrivals here and very chary in their song. The sedge warbler was also very late, and I heard its song for the first time on the 27th of May. We have no redstarts, garden warblers, lesser whitethroats, or reed warblers in the West of Cornwall, and I never but once detected the wood wren, and it was evidently in *statu migratû*, as it was not observed afterwards. I have never observed the tree pipit’s song in the Land’s End district, although it is a common bird in the eastern part of the county: I remarked the song of this species when I was

in the eastern district several days, but it was a miserably mutilated performance, quite destitute of the vigour it usually displays when the song is accompanied by flight. I have only heard of one golden oriole at Scilly this year.—*Edward Hearle Rodd; Penzance, July 5, 1876.*

**Notes from Flamborough, &c.**—June 1. At Bempton to-day I procured three herring gulls' eggs from a climber, which had been taken there about a week previously. The herring gull has not bred here for many years. I also saw two young carrion crows which had been brought from the cliff.

June 26. As I was on Filey Brigg to-day a single old cormorant flew past me. This bird had been seen about the cliffs at Bempton all the spring. I called on Mr. Brown, who showed me a mature black tern which had been brought to him, having been killed in mistake for a swift. Speaking to me on the subject of the young peregrines mentioned by Mr. Cope (*Zool. S. S. 5000*), Mr. Brown told me he had four peregrine's eggs brought him in the spring of 1875, taken on the Filey cliffs. There are still a quantity of herring gulls on the cliffs: a great many eggs have been taken this year. If Mr. Selater would walk along the cliff from Flamborough to Speeton, I think he would agree with me that there are still plenty of razorbills. All that Mr. Bailey kills he makes into plumes.

July 7. I found two young stock doves in our church-tower to-night, in a jackdaw's nest, from which the young had been taken. The pigeons had made no alteration whatever in the nest. The stock dove is breeding this year in the Flamborough cliffs in large numbers: this Mr. J. H. Gurney, jun., can corroborate.—*Julian G. Tuck; Old Vicarage, Ebberston, York.*

**Notes on Nesting.**—In the 'Zoologist' for January (*S. S. 4765*) Mr. Gurney, jun., mentions a tame duck laying in the nest of a French partridge. I was at Goitstock last May, and the gamekeeper told me that his hens lay very frequently in the nests of the pheasants which breed in his neighbourhood. I went with his son to a pheasant's nest which contained twenty-four eggs: this is an unusual number, but he said two had been laying in the same nest: how he had ascertained this I forgot to enquire. Last Whit Monday, as I was coming through Bolton Wood (a magnificent wood belonging to the Duke of Devonshire), I found the nest of a garden warbler within four feet of one of the principal roads along which persons were continually passing and repassing: it contained four eggs, and the old bird sat so close as to almost allow me to catch her. Within a hundred yards of this nest, and very little further from the road, I found a blackcap's nest, with two eggs, which had been set about a week, but, alas! I was afraid the old bird had become the booty of some prying boy, as a profusion of feathers in and around the nest fully testified. As I was coming from Bingley the other day I found a garden warbler's nest in a rather curious place; it was built in the midst of the common male fern (*Aspidium Filix-mas*). The blackcap has not been so common in this district for above ten



years as it has been this summer.—*E. P. P. Butterfield; Wilsden, Bradford, July 8, 1876.*

**The Axillary Feathers.**—In the fourth edition of “Yarrell,” I read, in the description of the brambling, “*axillary plumes*, and the smaller lower wing-coverts, bright yellow” (part 9, p. 80). I rather doubt if it is right to speak of any of the feathers under the wing of small birds like a finch (*Insessores*) as axillary plumes. They have not any, I take it, in the true sense of the word. It would be a good thing to have the word defined again in the ‘Zoologist,’ so as to know what its proper meaning really is, and whether Mr. Yarrell and Prof. Newton could rightly use it in speaking of such a bird as a brambling.—*J. H. Gurney, jun.; Northrepps, Norwich.*

*Erratum.*—Zool. S. S. 4977, six lines from the bottom, for coots read ducks.—*J. H. G., jun.*

**Bird imitating a Duck.**—A correspondent (Zool. 9679) mentions a remarkable case of mimicry of the quacking of a duck, in which the author of the sound was a bird about the size of a blackbird or a starling, and he believes it to have been the former, for reasons which he gives. I should, on the contrary, believe it was the latter, because I have more than once heard of starlings imitating ducks.—*Id.*

**Errata in Mr. Harting’s ‘Handbook of British Birds.’**—In Harting’s ‘Handbook of British Birds’ I observe it stated that a Bonaparte’s sandpiper shot at Eastbourne in November, 1870, and a redbreasted snipe shot at Yarmouth in the autumn of 1836, are in our collection (pp. 142, 144). This is a mistake, and it may be desirable to correct it, that it may not go any further. I may also add that a male parrot crossbill, shot at Southgate in November, 1864, which he mentions as being in Mr. Bond’s collection (p. 115) is in mine, that gentleman having presented it to me.—*Id.*

**Falco peregrinus in Egypt.**—It was probably owing to my not clearly expressing myself that Mr. Dresser has inadvertently misquoted me in his article on *Falco peregrinus* in part xlvii. of the ‘Birds of Europe,’ where he cites my authority for this bird being “commoner than the lanner in Egypt” (*l. c.* p. 7). It is true I found it much commoner than the lanner falcon in the winter, when we were in the Delta, but this was quite reversed in the summer, when we saw many lanners, but no peregrines that I was sure of. At that time we were in Upper Egypt, and whether there were any left behind the retiring tide of migrants below Cairo I cannot say. Certainly none came under my notice in the Faioum in June, and that province is reckoned in the Delta. It is a fine sight to see either of these noble falcons; it carries one back to the palmy days of falconry, when to kill one of these birds was a deed severely punishable.—*Id.*

**On the Snowy Owl Nesting in Confinement.**—In the ‘Zoologist’ for 1875 (S. S. 4573 and 4663) I recorded the interesting fact of a pair of snowy owls, belonging to Mr. Edward Fountaine, having nested and

hatched in confinement; this year the same pair laid five eggs, but unfortunately did not hatch them, probably owing to the female bird having been apparently less healthy than she was last year. This year's eggs were laid on the 23rd, 25th, 27th, 29th and 31st May. I am glad to be able to add that Mr. Fountaine informs me that the two surviving young birds of last year's brood continue to be well and flourishing.—*J. H. Gurney; Northrepps, Norwich, July 18, 1876.*

**Castings of the Spotted Flycatcher.**—I know of a great many spotted flycatchers' nests, yet I never can find Mr. Bartlett's "blue pills," which I believe only exist in grimy London, where the hot and indigestible house-flies abound. Your readers will remember that they were castings found under a nest of the spotted flycatcher in Regent's Park.—*J. H. Gurney, jun.*

**Blackbird's Nest on the Ground.**—While walking a few days since with a friend I was much surprised by finding a blackbird's nest built on the ground in a field which was put up for hay; it was composed principally of grass, roots, twigs and mud, lined with grass; there were three fine young birds in it just fledged. What could have induced the bird to have built there, instead of its usual nesting place, a hedge, seems impossible to say.—*H. C. Warry; Chalbury Rectory, Wimborne, Dorset, July 6, 1876.*

**Redstart's Nest built in a Human Skull.**—A great number of human skeletons were recently discovered in Mr. G. Stacey Gibson's meadow, close to that gentleman's garden, no less than one hundred and seventy having been found: the place is supposed to have been the site of a Saxon cemetery. During the time the skeletons have been exposed a redstart has made a nest in one of the skulls and brought out its four young ones. So singular an incident may be of some interest to the readers of the 'Zoologist.'—*J. Travis; Saffron Walden, June 25, 1876.*

**The Bunting (*Emberiza miliaria*).**—We are told, in Saxby's 'Birds of Shetland' (1874) that the bunting (*Emberiza miliaria*) is common in winter and rare in summer. On the other hand, we are told in Robert Dunn's 'Ornithologist's Guide' (1837) that in Orkney it is common in summer and rare in winter, or words to that effect. Can time have changed the habits of this species, or can its habits differ so materially in the two groups of islands? I am very sure that the observations of such a naturalist as Saxby are not likely to be wrong, and I hope the discrepancy between his account and Mr. Dunn's (who was also a very good observer) will be cleared up by Captain Kennedy in his work, when that is published. Mr. R. Dunn may have been quite right, and he is rather corroborated by the Rev. George Low, who, in his 'Fauna Orcadensis' (p. 60), says, "The bunting continues with us the whole year, builds in the fields of corn, often in a tuft."—*J. H. Gurney, jun.*

**"Black-headed Bunting"** (Zool. S. S. 5003).—I think it cannot be questioned that "black-headed bunting" is the right name to use for

*Euspiza melanocephala*. Its having been employed to designate *Emberiza schœniclus* is an unfortunate circumstance, but in future the latter species must go by the name of the "reed bunting."—*J. H. Gurney, jun.*

**House Sparrows and Drought.**—It is well known that during the time of rearing their young, house sparrows are very active in the pursuit of caterpillars, such a pabulum, no doubt, agreeing best with the juvenile beaks and weak digestive organs of the callow brood; and amongst the chief attractions to the old birds at such a time are the larvæ of *Depressariæ* and other *Tineæ* which live in moss upon the tiles of the houses; and frequently the ground beneath is strewn with the moss which has been detached during the search. During the continued drought which we experienced in this neighbourhood through the latter half of April and nearly the whole of May the sparrows became almost a nuisance from the litter they made with the moss, &c., and one old thatched cottage was nearly unroofed by flocks of them settling upon and tearing the thatch to pieces. I attributed this somewhat unusual performance to the drought, or possibly to the cold nights and backward spring, and consequent lack of caterpillars in other quarters.—*G. B. Corbin.*

**Crossbill on Fair Island.**—Perhaps I may, without impropriety, copy for you the following extract from a letter to the late Mr. J. H. Dunn, and given to me by him, recording, though unfortunately without any date, the capture alive of a crossbill on the little-known island called Fair Island, which lies midway between the groups of Shetland and Orkney:—"I got the enclosed [crossbill] at Fair Island on our late trip—I forgot it on board the steamer until to-day—it was alive when I got it; please skin it." The above may be interesting to some, if you can find a corner for it, and may be strictly relied on. Some time ago, I cannot now turn to the passage, a crossbill with dull white tips to the wing-coverts, shot in Norfolk, was named in the 'Zoologist.' There was no solid reason for supposing either that it was a variety of the whitewinged crossbill or a hybrid between that species and the common one, but when I saw it at the house of Mr. Gunn in October, 1871, it struck me that it quite tallied with the description of those singular varieties of Mr. H. Doubleday's mentioned in Yarrell ('British Birds,' ii., 25, article "Common Crossbill"), and I pointed out the coincidence to some of my friends, but I am not aware that it was ever alluded to.—*J. H. Gurney, jun.*

**Curious Nesting-places of the Starling.**—The partiality of starlings for building their nests in or very near the dwellings of man is well known; but it seems to me that many of them delight in noise and bustle at such a time, if I may judge from the number of nests annually constructed in the roof of a large school in this neighbourhood. During a half-hour's delay at the railway station at Westbury, Wilts, a few seasons ago, I was much interested in watching the movements of some starlings who had built their

nests close to the platform, where they were rearing their young in apparent safety, notwithstanding the frequently-passing trains and the din and bustle of the adjacent iron-smelting establishment.—*G. B. Corbin.*

**Starlings Pecking with Open Beak.**—I cannot concur with Mr. John Selater that "observations made from tame birds are foreign to the original question." I think the fact of his and my observations bringing us to the conclusion "that the beak is never thrust into the ground" shows that such observations are not so foreign to the original question as he would have us suppose, but his (I suppose facetious) remarks as to the starling making holes in the potato and ladies' lips are so intensely "foreign to the original question" that I only notice them that he may see how apt persons are to impute to others the very thing they are themselves doing. In spite of being thought "foreign to the original question," I would remark that I have seen the starling insert his beak closed into his food in the food cup, and then press back the under mandible three or four times, rapidly, so much so as to scatter his food over the bottom of the cage, as well as on to the floor, a very different action to the pressing down as noticed by Mr. Selater, and I am decidedly of opinion that the action of opening the beak in the manner I have described would be more efficacious in disturbing "the insects hidden in the tufts of grass or beneath the leaves" than if the grass or leaves were merely pressed down as described by Mr. Selater, and that a vastly greater number of the death-shamming insects would be discovered by the starling through the first-described operation than by the latter. One more remark and I have done with the matter, as I do not intend entering into controversy on the subject: my observation on the capacity of "swallow" in the tame bird would not have led me to suppose that the wild one would find it necessary to make so minute a division of a quarter-inch grub, as described by Mr. Selater, in order to swallow it, and to me the idea of a starling making three bites of such a grub far outdoes the proverbial "making two bites of a cherry."—*Stephen Clogg; Looe, July 22, 1876.*

**Three Crows to a Nest.**—In the last number of the 'Zoologist' (S. S. 5006), Mr. C. M. Prior alludes to three old birds which belonged to the same crow's nest. A similar circumstance was notified in the 'Field,' and the following is an extract from the paragraph, the date of which I have unfortunately not kept:—"A fortnight ago I shot one of a pair of crows which had hatched and were feeding young ones. A few days afterwards I found three old birds busy about the nest, and, watching them, there was no doubt they were engaged in feeding the young." No locality is given. The communication is signed "D." As an interesting corroboration Mr. Prior may like to receive this extract.—*J. H. Gurney, jun.*

**Note on Rooks** (Zool. S. S. 4926).—From my own observation I should think the copulation of rooks upon trees is much more the exception than

the rule. For my own part I fully believe what Gilbert White has said on the subject, since I never observed anything to the contrary, but much to confirm his statement, and especially during the past spring. This, however, is but another proof of how cautious we should be of pronouncing as unalterable any of the laws which regulate the economy and habits of our favourites.—*G. B. Corbin.*

**Notes on the Cuckoo and Redbacked Shrike.**—For several days at the beginning of the present month a young cuckoo, which had been hatched in an adjacent hedge, frequented my kitchen garden, where it was assiduously tended by its foster parent, a hedgesparrow. It was also constantly visited by an old cuckoo, which I disturbed each time I visited the garden, generally finding it either among the raspberry canes or the gooseberry bushes; twice I saw the old bird squatting on the ground under a gooseberry bush. The appearance of the old cuckoo so frequently in the garden greatly interested me, and I began to wonder whether it was an instance of parental regard towards the young bird which had been brought up by the hedgesparrow, or whether there was some other attraction in the garden which induced the old cuckoo to visit it. The gooseberry trees were infested by the common gooseberry grub, and the cuckoo might have come solely for the purpose of feeding upon them. A friend told me that he actually shot a cuckoo the other day while it was devouring his raspberries, but this seems so strange that he probably had made some mistake. The other morning my gardener saw a male redbacked shrike kill and carry off a sparrow; the bird is nearly always on the lawn, making one of the standard roses his perch, from which he sallies to capture any passing fly or beetle.—*Murray A. Mathew; Bishop's Lydeard, July 13, 1876.*

**Roller in Suffolk.**—A fine male specimen of the roller (*C. garrula*) was shot at Raydon, near Ipswich, on the 14th of June, by a gamekeeper named Mortimer. A report having been circulated to the effect that the hen bird had also been seen, and the nest discovered, I went to Raydon on Saturday last, and saw Mr. Mortimer, who informed me that he had seen the bird for several days before he shot it, and it was always alone. He had kept a sharp look out for the hen bird ever since, but without success. A woodman in the locality stated that he had seen a second bird. The supposed nest proved to be nothing more than a blackbird's, with an abnormal egg in it. The roller being a very rare bird in this country, I am pleased to send you the above authentic account of its occurrence. I may add, the bird has been preserved by Mr. Podd, taxidermist, of this town, for Mr. Mortimer, who intends to retain possession of it.—*H. Miller, jun.; Ipswich. (From the 'Field' of July 15th, 1876.)*

**Migrations of the Swift.**—On the 30th of June, 1873, a great migratory movement of swifts took place in Sussex from east to west, as is stated in the 'Zoologist.' A continuous flight of them was seen passing over Brighton

for hours (S. S. 3690). I saw something similar on the 1st of this July at Overstrand, near Cromer. The number was much less, there being not more than one hundred and fifty, I should say, but the direction was the same, and the date only one day different. A hundred and fifty swifts upon a journey take a long time in passing, for besides going in a straggling flock they are slow flyers, in spite of their long wings. I should like to know if, on or about this date, a similar migration was observed anywhere else.—*J. H. Gurney, jun.*

**The Alpine Swift.**—The alpine swift mentioned by Mr. Stevenson (Zool. S. S. 3319) has now passed into my possession, and I am able to tell you that, like the other Norfolk one, it is in immature plumage; so, at least, I judge from their dark colour, and from the fine white edging to some of the feathers, more particularly the secondaries. It is a male, and was shot by Mr. Alfred Andrews, of York. While writing on this species, I may as well mention a specimen which has not been recorded, which was seen by Mr. Bartlett in Kent, in June, 1871, and also that the example referred to in the 'Birds of Middlesex' (p. 129) as shot near Reading in August, 1841, is the same which Yarrell records as being killed at Oakingham on the 8th of October, of that year (Preface to 'British Birds,' 1st ed., ix.).—*Id.*

**Nidification of Pheasants.**—In mentioning the eggs which the keeper's boy found at Trimmingham (Zool. S. S. 4799), I might also add that he found a pheasant's nest in the fork of a large ivied oak, about twenty feet from the ground, and that we have this summer had a nest nearly as high on the wall of a house overrun with ivy at Northrepps.—*Id.*

**Little Bittern at Plymouth.**—Towards the end of April a Tauntonian had occasion to visit Plymouth, and, taking a walk just outside the town, noticed a curious bird in a field, which permitted him to approach it. This was an adult little bittern, which was standing on the ground with its head and bill pointed upwards (a favourite bittern attitude), and so exhausted by hunger that it allowed itself to be taken up by the hand. It was brought to Taunton alive, but died the next day, being reduced almost to a skeleton from starvation. The occurrence of the little bittern in adult plumage in this country is very rare.—*Murray A. Mathew; Bishop's Lydeard, July 4, 1876.*

**Hérons at Bishop's Lydeard.**—For several days I have noticed herons flying over this village, and attribute their presence here—we are at a considerable distance from the nearest heronry—to the continued drought, which has so reduced the water in all our brooks that the trout in them must be an easy prey to these feathered poachers.—*Id.*

**Bartailed Godwit.**—I beg to say that the British godwits which I saw in Leadenhall Market, to which Mr. Gatcombe alludes, were in beautiful summer plumage. I saw several more, quite as good, in a shop in Brompton.—*J. H. Gurney, jun.*

**The Polish Swan.**—At page 145 of his 'Birds of Northumberland and Durham,' Mr. Hancock has a note about a Polish swan mentioned in Mr. Harting's 'Handbook' as having occurred at Hartlepool, and he rightly refuses to give it admission as it rested on newspaper authority. I have just lighted on the passage in the newspaper in question, which is a cutting from the 'Hartlepool Free Press,' reproduced in the 'Field.' It states that the plumage was pure white, legs and feet slate-gray, weight twenty pounds, and that it was shot in March, and presented to the Museum of the Hartlepool Natural-History Society. I went to the Museum some time after, and saw a bird which I was told was the one, and as far as I could judge, without plates or specimens to compare it by, it was nothing more than an escaped mute swan. For my own part I have never thought that the Polish swan was a good species; but the question is attracting a good deal of attention in Norfolk now, and it is hoped that we shall elicit some new facts. It will be entered into fully in the third volume of the 'Birds of Norfolk,' and I will not anticipate Mr. Stevenson further than to say that he considers the gray feet are no good specific character, an opinion in which I entirely coincide, from having observed mute swans in the Serpentine and at Gatton Park, in Surrey, whose feet were of this colour. In a pair which we at present have alive, which were sent down by the Zoological Society, and have now four cygnets, they are a dark gray; and I believe these are the same pair which I saw at Mr. Castang's in Leadenhall on the 3rd of May, 1871, when the legs and feet were nearly white. That pair went to the Zoological Gardens, and I remember noticing soon after that the feet had got darker. Of course, if the colour is not permanent it cannot be a specific character. Again, the fact that in the same brood have been more than once found cygnets white and cygnets brownish gray, militates much against it. On this head, see the 'Field' of July 8th, 1871; Bull. Soc. Vaudoise Sc. Nat., x., No. 61, 1869; and 'The Mute Swan on the Rivers and Broads of Norfolk,' p. 60.—*J. H. Gurney, jun.*

**Varieties of the Teal.**—Mr. Sclater mentions a young female teal which had the breast so red as to have the appearance of being stained with blood (Zool. S. S. 4816). I bought one some time ago in Leadenhall which this description would pretty well apply to, and out of the great number which I have examined in this market I never saw another which was so strongly suffused with rufous.—*Id.*

**Summer Plumage of the Little Grebe.**—I have no doubt, from Mr. Corbin's accurate description, of his bird being the little grebe in summer plumage. It just resembles some I have had, except in being slightly larger. At this period of the year—March and April—the little grebe is much darker than in winter time. By far the darkest I ever saw, and it amounts to a real melanism, with only a little bay in the throat, is in the collection of Mr. Bond. It was caught at Dartford, and kept, I do not

know how long, in confinement. I should like to see it compared with Mr. Corbin's.—*J. H. Gurney, jun.*

**Scarcity of the Razorbill.**—In reply to Mr. Sclater I was at Flamborough on the 23rd of March. I did not enquire what the razorbills were wanted for.—*Id.*

**The Materials of Gannets' Nests.**—When I was at the Bass Rock this summer I observed that all the gannets' nests which I examined were composed of sea-weed, mixed with grass, and I wish to ask if any one has found plenty of sticks in their nests on this or any other rock. H. Boece (1526) says, "They gather such great plentie of sticks and boughs together for the building of their nests, that the same doo satisfie the keeper of the castell, for the yeerlie maintenance of his fewell, without any other prouision." This is quite at variance with my observation, and the following is what some other writers have said on the subject:—Willughby (1661) says, "These kind of Birds do not make their Nests of straws, sticks, or such like combustible matter, good for fewel; but either lay their Eggs on the naked rocks, or spread under them very few straws, bents, or such like inconsiderable stuff." ('Ornithology,' p. 19). Upon this Dr. Walker, as quoted by Fleming, remarks:—"If Mr. Willughby had ever been on the Bass\* he would in some measure have altered his opinion concerning the nests of sea-fowl. The nests of the Solan geese, which cover a considerable part of the island, are of a great size, are built for the most part of sticks and branches of trees, some of them pretty large; and \* \* \* \* the demolition of these nests still supplies the keepers of the Bass with a considerable quantity of fuel." ('Essays on Nat. Hist.,' Edin., 1808, p. 287). If the explanation be that the gannet will only take its materials off the water, and that off the water it will lift anything from a red coat to a large basket, and that some years there are branches brought down by the floods and plenty of wreckage timber, we might expect sometimes to find these things in their nests now.—*Id.*

**Kittiwake in Winter.**—Mr. Alston (Zool. 9470) alludes to the occurrence of a kittiwake on the Ayrshire coast in the month of January, and says that this is a rare bird in Scotland in winter. In February, 1869, I received two from the adjoining county of Dumfriesshire. I was not aware that they were rare, or I might have recorded them before.—*Id.*

**Tropic Bird.**—In reply to Dr. Bree (Zool. S. S. 4803), I did not mean to write that he had said the tropic bird (*Phaëton æthereus*) was a doubtful species, in the usual acceptation of that word, but only a doubtful European species. The word "European" must have been omitted by a slip of my pen.—*Id.*

\* Which he had been.—*J. H. G., jun.*



**Fox-Shark on the Irish Coast.**—I have much pleasure in recording the capture of a small specimen of the fox-shark (*Alopias vulpes*, Gmelin), which was taken in a salmon net at Portrush, County Antrim, on June 16th. The total length of this example was fifty-seven inches, of which the tail measured twenty-nine. I am told, by the gentleman who skinned it, that the stomach was filled with a thick dark-coloured fluid. I believe that this is the first well-authenticated instance of the capture of this species on the Irish coast, although there are at least three records of its having been seen on different occasions. Since it has been long included in our Fauna on mere circumstantial evidence, it is satisfactory to be able to place it now on a firm footing. The specimen is in the Royal Dublin Society's museum.—*J. Douglas Ogilby; Portrush, County Antrim.*

**Lesser Forkbeard at Kirkwall.**—A specimen of the lesser forkbeard (*Raniceps trifurcatus*), a comparatively rare fish in British waters, was caught here on June 24, in a dying condition, by some boys off the head of the pier. Its length was eight inches, breadth immediately behind the head one inch and a half, and it was entirely destitute of tubercles above the pectoral fins.—*John Bruce; Kirkwall, Orkney. ('Field,' July 6).*

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## Proceedings of Scientific Societies.

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### ZOOLOGICAL SOCIETY OF LONDON.

June 20, 1876.—Professor FLOWER, F.R.S., Vice-President, in the chair.

The Secretary exhibited a drawing of a fine species of fruit pigeon of the genus *Carpophaga*, living in the Society's Gardens, which apparently belonged to *C. paulina*, *Bp.*, of Celebes and the Sulu Islands.

Mr. Sclater read extracts from letters received from Signor L. M. D'Albertis and Dr. George Bennett, respecting Mr. D'Albertis' proposed new expedition up the Fly River, New Guinea, and exhibited a small collection of bird-skins made at Yule Island, and on the adjoining coast of New Guinea, by the last-named naturalist.

Dr. A. Günther read a letter from Commander W. E. Cookson, R.N., respecting the large tortoises obtained in the Galapagos Islands, which had been recently deposited in the Society's Gardens by Commander Cookson. The living specimens had been obtained in Albemarle Island, those obtained in Abingdon Island having died before reaching this country. Dr. Günther added some remarks on the specimens of tortoises and other animals collected by Commander Cookson, and promised a more detailed account on a future occasion.

Mr. G. E. Dobson read a paper on peculiar structures in the feet of certain species of mammals, by which they are enabled to walk on smooth perpendicular surfaces, especially alluding to Hyrax and the bats of the genus *Thyroptera*.

A communication was read from Dr. J. S. Bowerbank, being the sixth part of his monograph of the Silicio-Fibrous Sponges.

A communication was read from the Rev. O. P. Cambridge, containing a catalogue of a collection of spiders made in Egypt, with descriptions of new species and characters of a new genus.

A communication was read from Mr. W. T. Blanford, containing remarks on the views of A. von Pelzeln as to the connection of the Faunas of India and Africa, and on the Mammalian Fauna of Tibet.

A second communication from Mr. W. T. Blanford contained remarks on some of the specific identifications in Dr. Günther's second report on collections of Indian reptiles obtained by the British Museum.

Mr. Howard Saunders read a paper on the Sterninae, or terns, with descriptions of three new species, which he proposed to call *Sterna Tibetana*, *Sterna eurygnatha*, and *Gygis microrhyncha*.

Dr. Cunningham, of the University of Edinburgh, described a young specimen of a dolphin, caught off Great Grimsby, in September, 1875. After pointing out the great difficulty experienced in referring it to its proper place amongst the dolphins—this difficulty arising chiefly from the unsatisfactory and even unreliable descriptions which have been given in this country by former observers—he came to the conclusion that he was justified in referring it to *Delphinus albirostris*, the differences being in his opinion merely those of age.

Mr. J. W. Clark read some notes on a dolphin lately taken off the coast of Norfolk, which he was likewise induced to refer to the same species.

A communication was read from Mr. R. B. Sharpe, containing the description of an apparently new species of owl from the Solomon Islands, which he proposed to call *Ninox Solomonis*.

Mr. A. H. Garrod read some notes on the anatomy of certain parrots.

Mr. H. E. Dresser read the description of a new species of broadbilled sandpiper, from North-Eastern Asia, to which he gave the name *Limicola Sibirica*.

A second communication from Mr. Dresser contained the description of a new species of *Tetraogallus*, discovered by Mr. Danford in the Cilician Taurus, which he proposed to call *T. Tauricus*.

Dr. A. Günther read some notes on a small collection of animals brought by Lieutenant L. Cameron from Angola.

A communication was read from Lieutenant R. Wardlaw Ramsay, giving the description of a fine species of nuthatch, from Karen-nee, which he proposed to call *Sitta magna*.

This Meeting closes the present Session. There will be no more Scientific Meetings until the commencement of the next Session in November.—*P. L. Solàter.*

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ENTOMOLOGICAL SOCIETY OF LONDON.

July 5, 1876.—Professor WESTWOOD, M.A., President, in the chair.

*Additions to the Library.*

The following donations were announced, and thanks voted to the donors:—‘Proceedings of the Scientific Meetings of the Zoological Society of London for the year 1876,’ part 1; by the Society. ‘The Zoologist’ for July; ‘Newman’s Entomologist’ for July; by the Representatives of the late Edward Newman. ‘The Entomologist’s Monthly Magazine’ for July; by the Editors. ‘The Naturalist: Journal of the West Riding Consolidated Naturalists’ Society,’ no. xii., for July; by the Editors. ‘Journal of the Quekett Microscopical Club,’ no. 31 (May); by the Club. ‘Nature,’ nos. 345 to 348; by the Publishers. ‘Exotic Butterflies,’ part 99; by the Author, W. C. Hewitson, Esq. ‘Proceedings of the Linnean Society of New South Wales,’ vol. i., part i.; by the Society. ‘Annual Report of the Entomological Society of Ontario for the year 1875;’ by the Society. ‘The Canadian Entomologist,’ vol. viii., no. 5; by the Editor. ‘L’Abeille,’ nos. 174 to 176; by the Editor, M. de Marseul. ‘Tijdschrift voor Entomologie,’ 1875-76, 1e & 2e Aflevering; by the Editors. ‘Verhandlungen des Vereins für Naturwissenschaftliche Unterhaltung zu Hamburg, 1875,’ band ii.; by the Editor. ‘Eighth Annual Report on the Noxious, Beneficial and other Insects of the State of Missouri; by the Author, Charles V. Riley. ‘The American Naturalist,’ vol. viii., parts 2 to 12, and vol. ix.; by the Editor. ‘The Sixth Annual Report of the Trustees of the Peabody Academy of Science for the year 1873;’ by the Academy. ‘The Invertebrate Cave Fauna of Kentucky and adjoining States;’ ‘On the Development of the Nervous System in *Limulus*;’ ‘Descriptions of new North-American Phalænidæ and Phyllopora;’ ‘On the Transformations of the Common House-fly;’ ‘Explorations of the Gulf of Maine with the Dredge;’ ‘On the Distribution and Primitive Number of Spiracles in Insects;’ ‘New Phyllopod Crustaceans;’ ‘On Gynandromorphism in the Lepidoptera;’ by the Author, A. S. Packard, jun. ‘Reports on the Zoological Collection of Lieut. W. L. Carpenter, made in Colorado during the Summer of 1873;’ by the Author.

By purchase:—‘Fauna del Regno di Napoli.’ By Achille Costa. *Coleotteri*, 2 parts; *Lepidotteri*, 2 parts; *Ortotteri*, *Neurotteri* & *Emitteri*, 1 part; *Imenotteri*, 2 parts.

*Exhibitions, &c.*

Mr. Douglas exhibited the following Psyllidæ, taken by himself near Lee, Kent, viz.:—

*Psylla* ———? On birch trees. . Possibly *P. Betulæ*, Linn., *Flor.*

„ *spartifoliella*, Först. On broom bushes.

*Aphalara renosa*, Först. New to the British Fauna; now first identified as living on *Achillea millefolium*.

*Rhinocola aceris*, Linn. On maple trees (*Acer campestris*).

„ *ericæ*, Curtis. On heather.

The President showed some microscopic slides containing specimens of Diptera, &c., prepared with extraordinary care by Mr. Enock. He also brought for exhibition twigs of horse-chestnut from Oxford, that had been attacked by some kind of larva, which had eaten away the inside of portions of the stem, causing the buds to drop off. He was in doubt whether the insect was *Zeuzera Æsculi*, or some other, but he would be glad to know if the destruction to the trees had been noticed elsewhere. He also exhibited two species of *Coccus*, one of them on *Camellia* leaves in his greenhouse, which he had previously described in the 'Gardener's Chronicle,' under the name of *C. Camelliæ*, and which had afterwards been observed by Dr. Verloren in his greenhouse in Holland. The female, which is one line in length, discharges a white waxy matter, having the appearance of the excrement of a young bird. The other species had been sent to him by the Rev. T. A. Preston, of Marlborough, on a species of *Euphorbia*, obtained from Dr. Hooker, of Kew. The leaves were covered with small scales, which, on close examination, were observed to have two small spines attached, and these proved to be the caudal extremities of the males. These insects emerge from the pupa backwards, and in consequence they make their appearance with the wings drawn forwards over the head.

Mr. Stevens exhibited varieties of some British Geometræ, and what appeared to be a small variety of *Lycæna Adonis*, taken near Croydon.

*Papers read.*

Mr. Baly communicated "Descriptions of a new Genus and of new Species of Halticinæ."

Mr. Peter Cameron communicated "Descriptions of new Genera and Species of Tenthredinidæ and Siricidæ, chiefly from the East Indies, in the Collection of the British Museum."

*New Part of 'Transactions.'*

Part ii. of the 'Transactions' for 1876 was on the table.—*F. G.*

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*Muræna helena*, Linneus (*the Murry of Yarrell, the Muræna of Couch*). By JOHN T. CARRINGTON.

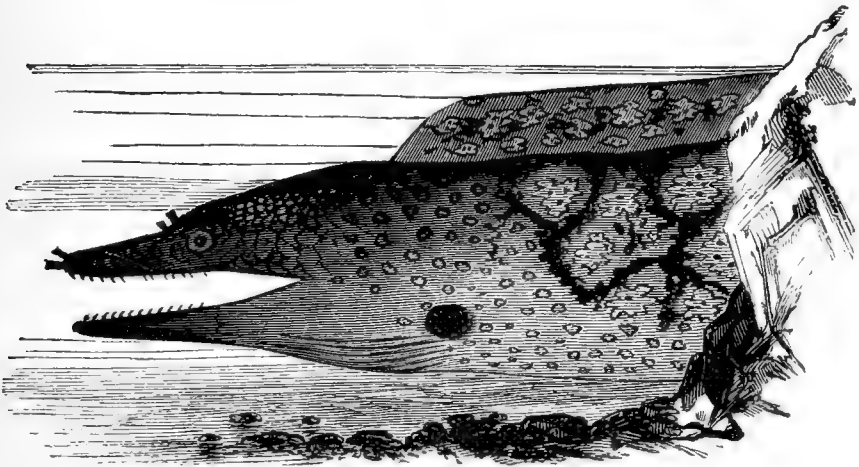


Fig. 1. MURÆNA HELENA.

THIS classical fish has hitherto been so incorrectly figured in every English Manual of Ichthyology where an illustration is given, that it seems desirable, now an opportunity is afforded, to refigure at least the most important part of it from life. Had the pages of the 'Zoologist' been sufficiently large, I should have preferred giving a figure, drawn to scale, of the entire fish.

The first published figure with which I am acquainted is that given in the second edition of Mr. Yarrell's 'British Fishes.' He says, "Of this singular and beautifully-marked fish Mr. Couch very kindly sent for my use a coloured drawing made from a fresh specimen, from which the figure, carefully reduced in size, was drawn and engraved."

I find on reference to Mr. Couch's 'Fishes of the British Isles,' that the fish which was made the subject of that drawing was caught with a line on the 8th of October, 1854, by a fisherman of Polperro, in Cornwall, who gave it to Mr. Couch shortly after he came to land. I cannot help thinking that Mr. Couch was to some extent deceived as to the fresh state of this animal when he figured it. I believe also the fore part of its body had become abnormally swollen through either hard usage or other cause, otherwise the extraordinary shape of the head could never have been given to us

in the figures in Yarrell's and Couch's books: of this I have drawn an outline at fig. 2: on reference this will be found a correct copy of their figures.

In fig. 2 of this paper my readers will observe the total absence of any indication of a dorsal fin. When describing the fresh specimen, Mr. Couch says, "the dorsal fin begins four inches and a half from the snout" and afterwards goes on to say that this and the anal fin are "thick and fleshy, so as not to be readily distinguished from the general surface of the body." In four fine healthy living specimens now before me, in the Crystal Palace Aquarium, which were sent

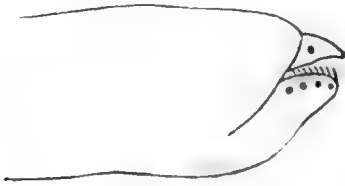


Fig. 2.

to that institution, with some other Italian fishes, by Dr. Anton Dohrn, from the Naples Aquarium, each measuring about the same length, two feet from snout to end of tail; the dorsal fin is rather more than one inch in height, while the ventral fin is half an inch deep. When swimming these fins are most conspicuous features, occasionally drooping in folds which almost touch the body.

By referring to my drawing of the head of a healthy live specimen (fig. 1) it will be seen that it is much more symmetrical than that depicted by Yarrell and Couch (fig. 2). It is quite devoid of the large heavy under jaw and chin shown in the outline. Again, in Mr. Couch's coloured figure he makes the head appear as of the same colour as the rest of the body, while, in fact, it is of a rich dark purplish chocolate-brown, with darker patches and very indistinct small cloudy yellow markings, the darker colour only shading off to lighter where the head joins the thorax.

I would particularly point out the existence of four short but very conspicuous barbs, each about a quarter of an inch in length. In drawing fig. 1, I was careful to show these characters somewhat prominently, but not more so than they appear upon a living specimen. They are not shown in either of Yarrell's or Couch's figures or in any English book where *Muraena* is figured, excepting in one instance, that describing the fishes seen on the Voyage of the 'Erebus' and 'Terror,' wherein an Australian example is well figured. I can scarcely understand how an acute observer like Mr. Couch could have missed figuring these important features,

unless, as I have suggested, his specimen had been long dead. He casually refers to them in his description of the fish, but does not lay sufficient stress upon the posterior pair.

In every English book, with the one exception named, where it has been necessary to figure *Muræna Helena*, chiefly as an illustration of the genus, Yarrell's figure has been carefully copied, and special remark has been made on the peculiar shape of the head and shoulders. Even in a chart of fishes illustrating orders and families, this erroneous figure is carefully given in all its incorrectness. This is evidently one of those cases where a scientific error has been perpetuated for a long period without correction by one writer after another: on this occasion possibly there is some excuse because of the previous difficulty of observing the animal in a living state. This is one of the instances of the coming scientific use of public aquaria, wherein may be so readily studied, in comfort, creatures which otherwise could never have their habits observed.

*Muræna Helena* seems to have been an object of attention in several ways from very remote times. Who does not remember the story told by Pliny of that "Roman gentleman" and favourite of the Emperor Augustus, Vedius Pollio, who used to punish his offending slaves by throwing them into ponds wherein were kept numbers of *Muræna* eels, that they might be nibbled or worried to death by these animals? Dr. Holland, in his quaint translation, says, "That there were not wilde beastes ynow upon lande for this fate, but because he tooke pleasure to behold a man torn and plucket in pieces all at once, which pleasant sight he could not see upon any other beastes upon lande." That there was some foundation for this legend there can be little doubt, for a story has been told by more than one author of one particular occasion when Augustus was paying a visit of state to the house of Vedius Pollio. During a large entertainment which was being given in honour of this event one of the attendant slaves was waiting at table. Possibly he was confused by the greatness of the occasion or the "quality" of the guests; at any rate he was not attending to the warning motto placed over the door of the servants' hall, which might be very liberally translated as

"Whoever breaks the glass or dishes,  
That man becomes the food for fishes,"

for in an unpropitious moment he let fall and broke a wine decanter (*fregit crystallinum*)! This poor wretch, knowing what was in store for him, and thinking there was a slight chance in appealing for mercy to the powerful Augustus, summoned courage to throw himself at the feet of the Emperor and ask intercession with his master, or at least to beg for some less terrible death than the nibbling process so delightful to Vedius Pollio. To the great credit of Augustus, it is related how he not only instantly pardoned this poor wretch, but applying the rule so golden in ethics, removed the cause of this cruelty by ordering the immediate smashing of all Vedius Pollio's glass and china and the filling up of the fish-ponds. So is written and handed down a pretty—as we in modern times would say, a slightly sensational—legend. Whatever may have been the foundation for this story, I strongly suspect it never happened. Although I have often heard of the ferocious and cruel habits of *Muræna*, this, too, is in my opinion quite as untrue; for during the considerable time I have had opportunities of closely observing this creature I have uniformly found it just the reverse. It has certainly an unpleasant appearance when lying with its head and shoulders only visible from some hole in a rock, and with its mouth, so liberally furnished with teeth, wide and threateningly open. It is a common habit of this animal to rest for short periods in this way, with its mouth wide open, just as is represented in Fig. 1. Another character given to this much ill-used fish is that of taking—or, more correctly, maiming—its food by “reiterated snaps” of its jaws. This, again, is an error, for one of the most remarkable and first-noticed features in this animal is its very gentle and peculiar mode of feeding. This is done by a curiously quiet movement of the head, so as to bring the *cheek* down upon the object about to be eaten, seizing it with the side of his mouth, and never by the front.

The specimens to which I have referred are usually fed with mussel-flesh or live shrimps. At first it was thought that, from their slow and deliberate habits, the shrimps would get away, and so the *Muræna* starve; but no, the *Muræna* quietly sits in his hole, as shown in fig. 1, not showing the least movement until it marks down a shrimp; then, in its graceful manner, it glides up to it, gently lays one cheek upon it, and so holds it until it has secured the shrimp with the side of his mouth, when with one quick bolt it swallows its food.



So far from being the vicious creatures we are led to believe, these specimens have become great pets; they readily take food from the hand of any one in the habit of feeding them, even coming a third of their length out of the water to take the food. There seems little doubt that this famous fish was kept for more than mere culinary purposes in ancient times, for we read of their being carefully tended, and decked with rings of silver and gold; and Porphyrius says that the loss of one of these pets was a greater grief to him than the death of his three children. Antonia, too, exhibited hers at Bauli, near Naples, in the grounds of Drusus, decorated with these rings; while Hortensius the orator never quite got over the death of his favourite Muræna. There seems to have been a time when these animals were as extravagantly fashionable as some of our modern hobbies. Even sedate Cicero says these people "deemed no moment of their lives more happy than when these creatures first came to eat out of their hands." This fashion was carried so far that the aristocratic Roman family of Licinii, to express their admiration for this fish, took the name of Muræna in addition to their own.

I have already said how gentle and timid, until familiar with those who attend them, are these fish. I have seen no indication of their wilfully biting any one, although in one clearly accidental case one did bite its feeder, making a slight puncture with the back teeth, which caused little or no pain. Amongst other bad habits attributed to this handsome animal, is one which I think is doubtlessly as untrue as the others I have stated. I am glad to say it is given on the authority of one writer only, Columella, who says it has, for a fish, the remarkable phenomenon of a strong tendency to hydrophobia and canine madness! Surely these old authors must have invented some of the terrible attributes of this fish, to act as a check upon the expensive custom of keeping them as pets; no other idea can be suggested as an explanation for such extraordinary statements. Even Appian comes forward with a wonderful description of a frequent battle which is waged between the Muræna and the cuttle, in which the former is always successful; but he afterwards more graphically describes a sanguinary sea-fight between the victorious Muræna and a heavily mailed Cancer, in which, this time, the crab gets the better of the two, and Muræna at last falls ignominiously to his powerful jaws. Lastly (though certainly not least), Cæsar distributed six thousand

specimens of this *Muræna* amongst his friends, to celebrate one of his triumphs.

So much for some of the ancient history of this animal. I will now return to its present mode of life and description.

In the northern hemisphere *Muræna Helena* is probably commonest on the coasts of Italy and Sicily, although it frequently occurs throughout the Mediterranean, and more sparingly in the Atlantic. I cannot find it recorded as occurring in North American waters; it is not mentioned in Part I. (the only one published) of the 'Report of the United States Commission on Fish and Fisheries, 1872.' Mr. Lowe reports it as not rare at Madeira; it is likewise said to be common in the Chinese and Australian seas. I distinctly remember seeing what I now believe to have been a specimen of *Muræna*, though possibly an allied species, in a fisherman's canoe at Coquimbo, on the west coast of South America, about three years ago. I am told it has been seen in the Straits of Magellan, and commonly at Ascension.

The *Muræna* is said to live as well in fresh water as in the sea, but of this I know nothing personally. Again, it has the reputation of great vitality, existing a long period out of its natural element: this is a well-known habit of most of the family to which this species gives the name *Murænidæ*.

There seems to be a common idea that the *Muræna* manifests a decided early tendency to obesity. I do not think this is so, for one specimen with which I am familiar has been kept and well fed, even to daily satiety, with shrimps, mussel, and an occasional small wrasse of his own poaching, for the last eighteen months, and, although much grown, it has lost none of its symmetrical appearance, and is now of as finely graceful shape as when younger. It is stated by one author, when writing of this species, that its corpulency frequently becomes so great that it cannot dive under water, but *floats*, from which habit it has obtained its name, though I think it more probable the name is derived from the Greek *μῦρην*, to flow, from its *flowing* or graceful undulations when swimming.

This animal was early held to be an exceptionally good article of food; the flesh is delicately white, and very agreeable eating. Large quantities are offered for sale in some of the Mediterranean sea-ports.

The description given below was taken generally from a dead

specimen, which had been some time in spirits of wine; the colouring, however, is described from the living specimens before alluded to.

## MURÆNA HELENA.

*Mύραινα*, Aristot.; *Ælian*.

*Muræna*, Plin.; Bellon de Aquat.; Rondel; Salvian; Willoughby, Hist. Pisc.; Aldrov.

*Muræna* (sp. nov.), Artedi, Synon. Genera; Gronov. Zoophyl.

*Muræna helena*, Linn. Syst. i. p. 425; Brünn. Pisc. Mass. p. 11; Bloch, Ausländ Fisch. ii. p. 31, tab. 153; Risso, Ichth. Nice, p. 336, and Eur. Mérid. iii. p. 189; Costa, Faun. Nap. Pisc., with fig. of skull; Jenyns, Man. p. 479; Yarrell, Brit. Fish. 2nd edit. ii. p. 406, and 3rd edit. i. p. 73; Couch, Fish. Brit. Isl. iv, p. 335, pl. 237; Guichen, Explor. Algér. Poiss. p. 114; Gronov. Syst., ed. Gray, p. 18; Rich. Voy. Ereb. & Terr., Ichthyol. p. 80, pl. 49, figs. 1—6; Kaup. Apod. p. 55; Günther, Cat. Fish. Brit. Mus. viii. p. 96.

*Muranophis helena*, Lacép. v. p. 631.

*Gymnothorax Muræna*, Bl. Schn. p. 525.

*Muræna Romana*, Shaw, Gen. Zool. iv. 1, p. 26.

*Muræna guttata*, Risso, Eur. Mérid. iii., 1826, p. 191.

Skeleton, Rosenthal, Ichthyotom. Taf. tab. 23. Owen, Osteol. Cat. i. p. 14.

Teeth very acute, subulate, more or less compressed, cutting edges towards the tip. The teeth of the upper jaw are arranged in three rows, one row on each side and one short one on the palate. The posterior nasal and adjoining palatine tooth are longest of the series; these with some neighbouring ones, also a few on the lower jaw, have an acute notch on the posterior edge, with a slight nasal lobe beneath it. Nasal teeth, and anterior mandibular teeth, considerably rounded towards the base. The teeth arranged along the sides of the upper jaw are in two rows of thirteen each, the first six on each side are equidistant and of equal size; then follow three pairs, and lastly a single one. The pairs and the single one are slightly more delicate in structure than those in front; all about an eighth of an inch in length. Nasal teeth about twelve, exclusive of about twelve very short ones alternating with them, but rather exterior to their bases, so that the mingled nasal teeth may be considered as making an approach to the biserial arrangement. Three teeth on the mesial line of the nasal disk long, slender, and very acute, the posterior pair being the longest in

the mouth. The lower jaw has about twenty-nine teeth, equidistant, one-eighth of an inch in length; all teeth much curved and inclined backwards.

Head slender and pointed, one-twelfth the length of the whole animal; jaws elongate, two-thirds the length of the head, equal in length. Gape very large. Tongue adherent. Posterior nostrils shortly tubular; eye moderately large; upper and lower jaw are bordered by a row of large pores, and there are also six on top of snout. Dorsal fin commences before the gill-opening, gradually increasing in height until it attains its greatest altitude beyond the vent. Both dorsal and anal fins are conspicuous towards the tip of the tail, which is considerably compressed.

The ground colour of the fish is very dark chocolate-brown, varied by oval, roundish, or irregular marks of various sizes, and tints of pale yellow to deep golden yellow. These spots are very small, and so crowded on the head as to produce merely brown with yellowish white markings; towards the snout and over the eyes is quite brown. Immediately over and behind the eyes is a curious roughing up of the skin, giving the appearance of very coarse velvet pile, followed by a darker patch of skin on the top of the head. The spots of yellow are again small posteriorly, and arranged near the tail so as to have a distinct banded appearance; they are large along the back and middle of the fish, extending on to the dorsal fin, but the spots of each fin are complete in themselves, and not flowing on to the body. In the larger spots are included oval and roundish smaller blackish spots, generally darker than the ground colour. The belly is much paler and the spots more minute. The corners of the mouth, gill-openings, and folds of the throat are black, the latter looking like a series of black lines under the mouth and throat. The edges of the dorsal and anal fins are marked by a series of light yellow or whitish dots, most numerous on the anal; the bases of these fins are also spotted by a less dense series. Along the side of each fin is a row of larger spots, same in character as on the body, but less bright in colour. Individual specimens are very liable to variation both in markings and intensity of colour.

The rays of the two fins are 552 in all, the anal having 220 and the dorsal 332; rays simple, without joints. Vertebrae 141, 71 of which are abdominal and 70 caudal. Air-bladder about  $1\frac{1}{2}$  inch long, oval in shape.

In taking the following measurements from a living specimen I was assisted by my friend Mr. E. Howard Birchall:—

Total length	-	-	-	-	25 inches.
Length of head	-	-	-	-	2½ "
„ jaws	-	-	-	-	1¾ "
Position of vent (from snout)	-	-	-	-	12½ "
Dorsal fin, length of	-	-	-	-	22½ "
„ height of	-	-	-	-	1½ "
Anal fin, length of	-	-	-	-	12½ "
„ height of	-	-	-	-	½ inch.
Girth at one inch before vent	-	-	-	-	4½ inches.
Gill orifice, from end of snout	-	-	-	-	3¾ "
Eyes, from snout	-	-	-	-	¾ inch.

Habitat:—Mediterranean, English Channel, North African coast, Indian Ocean (Bloch), Australian Seas, Mauritius, Mid-Atlantic Islands, &c., frequenting rocky shores.

JOHN T. CARRINGTON.

Crystal Palace Aquarium,  
August 18, 1876.

### *Ornithological Notes from North Lincolnshire.*

By JOHN CORDEAUX, Esq.

(Continued from S. S. 4985).

JUNE AND JULY, 1876.

*Green Plover.*—June 22. Have already congregated in flocks of from sixty to seventy in the turnip-fields.

*Golden Plover.*—June 23. I heard the note of the golden plover in the marshes this morning, but did not see the bird.

*Reed Warbler.*—For several years I have searched during the summer for this species in North Lincolnshire without success in many very likely localities, and have never either heard its note or been able to detect the presence of the bird. I am also in the habit, when shooting in the winter, of keeping a look out in ditches and reed-beds for the old nests, so that I do not think it could occur, even occasionally, in this district without its presence having been detected.\* I am therefore to-day (June 28th) much

\* I have only once met with it here during the autumn, evidently a migratory bird moving south.—*J. C.*

pleased to hear one singing from some reeds in a dry ditch separating two fields in these marshes. A few minutes of careful crawling through the long grass of a meadow brought me close to the spot and within a few feet of the songster. I watched it for some time, and almost came to the conclusion—judging from the conspicuous light streak over the eye and light-coloured legs—that I had stumbled upon an example of the rare marsh warbler (the *A. palustris* of Bechstein); the note, however, was that of the reed warbler, so there was no use entertaining the idea. The next day, hearing the bird near the same spot, I entered the reeds, and had scarcely done so before I came upon the nest, containing four eggs, suspended in the usual manner to the reeds. This ditch was four feet wide at the bottom, and filled with reeds, six to seven feet in height. The nest was placed eighteen inches from the bottom, near its centre, and had six stems of the reed woven into and supporting the sides: it was a much slighter and more loosely-woven structure than is usually the case, and the walls so thin as to be easily seen through, shallower, too, than the average nest of this species. The materials were coarse stems of a grass (without the florets, so it was difficult to say what grass it was), mixed with some wool and moss, the inside lined with the same coarse materials. On again inspecting the nest, on the 13th of July, I found the young just hatched; by the end of the month they had left the nest, and I saw the old bird feeding them with insects.

*Stock Dove*.—The stock dove is becoming quite a common species with us: this year a pair have built, for the first time, amongst the ivy on the chancel of the church, and I have also met with several pairs nesting amongst the thick upper branches of the Scotch fir.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,  
August 9, 1876.

*Errata*.—'Zoologist,' July, 1876, p. 4983, line 10, for Loch Hess read Loch Ness; same page, line 15, for Wragley read Wragby; p. 4985, line 1, for fisheries read foreshores.—J. C.

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### Notices of New Books.

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*The Birds of the North-West: a Handbook of the Ornithology of the Region drained by the Missouri River and its Tributaries.* By ELLIOT COUES, Captain and Assistant-Surgeon United States Army. Demy 8vo, 791 pp. 1874.

(SECOND NOTICE.)

To students of English Ornithology the American Ornis possesses an additional interest from the fact that the greater number of the accidental visitants in our bird-list are to be traced to the American Continent. It has been even asserted that when there are European and American types of the same bird, it is the latter which are generally met with in England. Thus it is the American and not the European form of the hawk-owl which has been obtained in this country. As a rule American birds are darker in plumage than the corresponding European types. There are few of the numerous sandpipers, tattlers, and stints of the American list, representatives of which have not crossed over to our shores; and to the English collector these birds are a specially interesting group. They are suggestive of wild and desolate shores; of moor and marsh; of those secluded scenes where birds are to be met with in greatest variety, and where the shyest of them can alone be studied. The route by which these Americans probably reach our coast is by British America, Northern Russia, and Greenland. But against this is to be set the fact that our visitants from America have never been observed in Greenland, while very many of them have never been procured in any part of Europe except the British Isles. From this it would appear that, after all, the direct ocean route may be the one by which most of these strangers come to us.\* Not all who wander to such a distance meet with the fate of finding their way to a collector's cabinet. Some few, certainly, must escape the gunner's notice, and it is an interesting subject for speculation whether these lost ones ever return to their familiar homes, or whether they go on in their wanderings until they reach some climate so uncongenial to them that they must finally perish? There is hardly

\* *Vide* Harting's 'Handbook,' Introduction, p. xi.

any part of the vast American continent which is without the presence of some members of the numerous family of sandpipers. Around the coast the sands and oozes swarm with the redbreasted snipe, the tiny peep, and many other *Limicolæ*; the sides of inland rivers and lakes are haunted by various tattlers; waders, fat and in good condition, are met with around the alkaline pools of the Upper Missouri; and the level expanse of the prairie affords a home to the beautiful Bartram's sandpiper, vulgarly known as the "prairie pigeon," to the pectoral sandpiper, and to the buffbreasted sandpiper—one of the most prized of all the *Tringæ* which occasionally wander to our country. In the month of May the prairie presents a sight which would delight any student of birds. It is then alive with thousands of Esquimaux curlews, on their way to their favourite haunts, where they can feast on the berries of *Empetrum nigrum*, the "curlew's berry"; with flocks of golden plover, and with numerous Bartram's sandpipers, the latter tame and confiding, and preparing to nest. Here is the Doctor's account of a young brood of the latter beautiful species:—

"Young birds are abroad late in June,—curious little creatures, timid and weak,—led about by their anxious parents, solicitous for their welfare, and ready to engage in the most unequal contests in their behalf. When half-grown, but still in the down, the little creatures have a curiously clumsy, top-heavy look; their legs look disproportionately large, like those of a young colt or calf; and they may be caught with little difficulty, as they do not run very well. I once happened upon a brood, perhaps two weeks old, rambling with their mother over the prairie. She sounded the alarm to scatter her brood, but not before I had secured one of them in my hand. I never saw a braver defence attempted than was made by this strong-hearted though powerless bird, who, after exhausting her artifices to draw me in pursuit of herself, by tumbling about as if desperately wounded, and lying panting with outstretched wings on the grass, gave up hope of saving her young in this way, and then almost attacked me, dashing close up and retreating again to renew her useless onslaught. She was evidently incited to unusual courage by the sight of her little one struggling in my hand. At this downy stage the young birds are white below, finely mottled with black, white, and rich brown above; the feet and under mandibles are light coloured; the upper mandible is blackish."

Some of the *Totaniidæ* are amongst the most wary and difficult birds to approach. At the breeding-season, however, their habits



are entirely changed; and it then becomes possible to get near the most timid and suspicious of the family:—

“Under ordinary circumstances willets are notoriously restless, wary, and noisy birds; but their nature is changed, or, at any rate, held in abeyance, during and for a short time after incubation. They cease their cries, grow less uneasy, become gentle, if still suspicious, and may generally be seen stalking quietly about the nest. When willets are found in that humour—absent-minded, as it were, absorbed in reflection upon their engrossing duties, and unlikely to observe anything not directly in front of their bill—it is pretty good evidence that they have a nest hard by. It is the same with avocets, and probably many other waders. During incubation the bird that is ‘off duty’ (both parents are said to take turns at this) almost always indulges in reverie, doubtless rose-tinted, and becomes in a corresponding degree oblivious to outward things. If then they are not set upon in a manner entirely too rude and boisterous, the inquiring ornithologist could desire no better opportunity than he will have to observe their every motion and attitude. But once let them become thoroughly alarmed by too open approach, particularly if the sitting bird be driven from her nest, and the scene quickly shifts; there is a great outcry, violent protest and tumult, where was quietude. Other pairs, nesting near by, join their cries till the confusion becomes general. But now, again, their actions are not those they would show at other times; for, instead of flying off with the instinct of self-preservation, to put distance between them and danger, they are held by some fascination to the spot, and hover around, wheeling about, flying in circles a little way to return again, with unremitting clamour. They may be only too easily destroyed under such circumstances, provided the ornithologist can lay aside his scruples and steel himself against sympathy.”

The correctness of the following amusing life-picture may be tested by any one who lives in a part of the country where the summer snipe, the common redshank, or the green sandpiper are to be met with. All these birds have the same fondness for bowing to themselves as the solitary tattler, whose “nods and becks” the Doctor has recorded. This, by the way, is an American species, of probably not infrequent occurrence in England, but easily to be confounded with the wood sandpiper, and hence overlooked. The chief distinction lies in the colour of the feathers above the rump, which are green in the solitary tattler, and white in the wood sandpiper. Writing of the former bird, the Doctor remarks:—

“These tattlers indulge on all occasions a propensity for nodding, like Lord Burleigh or the Chinese mandarins in front of tea-shops; and when they see something they cannot quite make out, seem to reason with themselves, and finally come to a conclusion in this way; impressing themselves heavily with a sense of their own logic. They go through the bowing exercise with a gravity that may quite upset that of a disinterested spectator, and yet all through the performance, so ludicrous in itself, contrive to preserve something of the passive sedateness that marks all their movements. This bobbing of the head and fore parts is the correspondent and counterpart of the still more curious actions of the spotted tattlers, or ‘tip-ups,’ as they are aptly called, from this circumstance; a queer balancing of the body upon the legs, constituting an amusement of which these last-named birds are extremely fond. As often as the tip-up, or ‘teeter-tail,’ as it is also called, stops in its pursuit of insects, the fore-part of the body is lowered a little, the head drawn in, the legs slightly bent, whilst the hinder parts and tail are alternately hoisted with a peculiar jerk, and drawn down again, with the regularity of clockwork. The movement is more conspicuous in the upward than in the downward part of the performance; as if the tail were spring-hinged, in constant danger of flying-up, and needing constant presence of mind to keep it down. It is amusing to see an old male in the breeding-season busy with this operation. Upon some rock jutting out of the water he stands, swelling with amorous pride and self-sufficiency, puffing out his plumage till he looks twice as big as natural, facing about on his narrow pedestal, and bowing with his hinder parts to all points of the compass. A sensitive and fastidious person might see something derisive, if not actually insulting in this, and feel as Crusoe may be presumed to have felt when the savages who attacked his ship in canoes showed the signs of contumacious scorn that De Foe records. But it would not be worth while to feel offended, since this is only the entirely original and peculiar way the tip-up has of conducting his courtships. Ornithologists are not agreed upon the useful purpose subserved in this way, and have as yet failed to account for the extraordinary performance. The solitary tattlers, that we have lost sight of for a moment, are fond of standing motionless in the water when they have satisfied their hunger, or of wading about up to their bellies with slow, measured steps. If startled at such times, they rise lazily and lightly on wing, fly rather slowly a little distance, with dangling legs and outstretched neck, to soon re-alight and look about with a dazed expression. Just as their feet touch the ground, the long, pointed wings are lifted, till their tips nearly meet above, and are then deliberately folded. The Esquimaux curlews and some other birds have the same habit. The tattlers are unusually silent birds; but when suddenly alarmed they utter a low and rather pleasing whistle as they fly off, or even without moving.”

We cannot leave the *Tringæ*, a very favourite group of birds with us, without quoting Dr. Coues' very pathetic description of the nest of the peep, that tiniest of all sandpipers, which, in spite of its pigmy size, has yet dared the long journey from America to our shores. A short time since we had the pleasure of seeing a very beautiful specimen in the rich collection of Mr. Vingoe, of Penzance, which had been shot by him at Marazion:—

“Fogs hang low and heavy over rock-girdled Labrador. Angry waves, paled with rage, exhaust themselves to encroach upon the stern shores, and baffled, sink back howling into the depths. Winds shriek, as they course from crag to crag in mad career, till the humble mosses that clothe the rocks crouch lower still in fear. Overhead the sea gulls scream as they winnow, and the murre, all silent, ply eager oars to escape the blast. What is here to entice the steps of the delicate birds? Yet they have come, urged by resistless impulse, and have made a nest on the ground in some half-sheltered nook. The material was ready at hand, in the mossy covering of the earth, and little care or thought was needed to fashion a little bunch into a little home. Four eggs are laid (they are buffy yellow, thickly spotted over with brown and drab), with the points together, that they may take up less room and be more warmly covered; there is need of this, such large eggs belonging to so small a bird. As we draw near the mother sees us, and nestles closer still over her treasures, quite hiding them in the covering of her breast, and watches us with timid eyes, all anxiety for the safety of what is dearer to her than her own life. Her mate stands motionless, but not unmoved, hard by, not venturing even to chirp the note of encouragement and sympathy she loves to hear. Alas! hope fades and dies out, leaving only fear; there is no further concealment—we are almost upon the nest: almost trodden upon, she springs up with a piteous cry and flies a little distance, re-alighting, almost beside herself with grief; for she knows only too well what is to be feared at such a time. If there were hope for her that her nest were undiscovered, she might dissimulate, and try to entice us away by those touching deceits that maternal love inspires. But we are actually bending over her treasures, and deception would be in vain; her grief is too great to be witnessed unmoved, still less portrayed; nor can we, deaf to her beseeching, change it into despair. We have seen and admired the home—there is no excuse for making it desolate; we have not so much as touched one of the precious eggs, and will leave them to her renewed and patient care.”

In the July number of the ‘*Ibis*,’ Messrs. Seebohm and Harvie Brown, in an interesting article on the birds met by them at the mouth of the Petchora river, relate their discovery of the nest of a

near relation of the peep—the little stint—under circumstances very similar to those mentioned above. Particulars of the nesting of the rarer *Tringæ* are very welcome to British ornithologists, not all of whom possess the energy or the opportunity to visit Northern Russia in search of those secluded spots in which hitherto the secret of the eggs and nests of many species has been kept inviolate. Like the peep, the little stint appears to be a fearless parent. We quote from Mr. Harvie Brown's account of his first little stint's nest:—

“As I came nearer I saw a small bird flying in circles round him (Piottuch) and Simeon, and alighting now and again close to them. Seeing this I ran forward, and Piottuch held out two young little stints,\* not more than a day, or at most two days, out of the shell. I sat down; and ere many seconds elapsed the old bird alighted within a yard or two of our feet, uttering a very small, anxious, whistling note. My gun lay on the ground beside me, within reach of my hand; and I put down one of the young about six inches beyond it. Almost immediately the old bird advanced close up to it, and, uttering its low notes, endeavoured to lead it away. Piottuch then held out the other young one in his left hand, and it uttered a scarcely audible cheep. The old bird advanced fearlessly to within twelve inches of his hand; and he nearly caught it. I then shouted to Seebohm to come, being at the same time prepared to shoot the bird if it flew away to any distance; but no, it only flew about ten or fifteen yards, and then began to sham lameness, tumbling about among the little hummocks and hollows, and never going further from us than about thirty paces.”

The eggs of the little stint are described as like dunlin's eggs in miniature. Drawings of four of those brought to England by Mr. Harvie Brown are given in the 'Ibis.'

To return to Dr. Coues. Among the extraordinary birds furnished by the American list may be mentioned the wood ibis, called in Colorado the “water turkey.” This ibis is nearly as large as a crane, is white, with black tips to the wings, and a black tail. “The head is peculiar, being entirely bald in the adult bird, and having an enormously thick, heavy bill, tapering and a little decurved at the end.” The wood ibis avoids the intense mid-day heats by mounting high into the heavens, circling round and round in the cooler currents of air.

\* There is a very beautiful drawing, from the pencil of Mr. Keulemans, of the little stint in its nestling plumage, taken from Mr. Harvie Brown's specimens, in Mr. Dresser's magnificent work on the 'Birds of Europe.'

“A long white line, dimly seen at first in the distance, issues out of the gray-green woods. It is a troop of wood ibises, leaving their heated covert for what seems the still less endurable glare of day, yet reckoning well, for they have before enjoyed the cooler currents of the upper air, unheated by reflection from the parched and shrinking sands. They come nearer, rising higher as they come, till they are directly overhead in the bright blue. Flapping heavily until they had cleared all obstacles, then mounting faster, with strong, regular beats of their broad wings, now they sail in circles with wide-spread, motionless pinions, supported as if by magic. A score or more cross each other's paths in interminable spirals, their snowy bodies tipped at the wing-points with jetty black, clear cut against the sky; they become specks in the air, and finally pass from view.”

Audubon, quoted by the Doctor, gives a good description of the manner in which these ibises feed:—

“The wood ibis,” he says, “feeds entirely upon fish and aquatic reptiles, of which it destroys an enormous quantity, in fact more than it eats; for if they have been killing fish for half-an hour, and gorged themselves, they suffer the rest to lie on the water untouched, to become food for alligators, crows and vultures. To procure its food, the wood ibis walks through shallow, muddy lakes, or bayous, in numbers. As soon as they have discovered a place abounding in fish, they dance, as it were, all through it, until the water becomes thick with the mud stirred from the bottom with their feet. The fishes, on rising to the surface, are instantly struck by the beak of the ibises, and on being deprived of life they turn over, and so remain. In the course of ten or fifteen minutes, hundreds of fishes, frogs, young alligators, and water-snakes, cover the surface, and the birds greedily swallow them until they are completely gorged, after which they walk to the nearest margins, place themselves in long rows, with their breasts all turned towards the sun, in the manner of pelicans and vultures, and thus remain for an hour or so.”

It is a common fallacy to discredit any variations in the habits of animals or birds familiar to us. When such are reported we are sometimes apt to dispute the fact. Were any one bold enough to record in a popular journal that he had seen a snipe sitting on a rail, a woodcock perched upon a tree, or a sky lark singing upon the ground, the experience of many people would be so outraged that they would at once take pen in hand to send in a contradiction of these statements. Because they had never themselves seen such things (and all that we have instanced are by no means

unusual) they will argue that they never could have happened. The other day, in North Cornwall, we saw a sky lark perched upon the topmost twig of a tall bush in a hedge, singing lustily. But to state such an occurrence as this is like throwing down the gauntlet for anyone who has not seen a sky lark so behaving to take up. In foreign countries the conduct of some of our familiar English birds is so abnormal that a great demand will seem to be made on the credulity of some by the mere statement of them. Audubon has recorded the fact that the herring gull,—the commonest of all our sea-gulls, which nests on every part of our cliffs, and the sight of whose beautiful eggs has been the delight of many a holiday excursionist to the sea-side, as, leaning over the edge, he has looked down on the clutches resting on the ledges beneath him,—that our well-known and beautiful herring gull so far forgets itself as to be found breeding in communities in trees! In Mr. Harvie Brown's article in the 'Ibis,' which we have already referred to, we are told that on the Petchora it is quite common to see the common snipe perched high up on trees. He states that he saw one sitting on the topmost upright twig of a bare larch, seventy feet from the ground, from which it was uttering "its curious, double 'clucking' note." To make sure that there was no mistake in the matter, a snipe was shot when perched on a high tree. "Nor is the common snipe the only bird which, not practising the habit with us, we found perching freely in Northern Russia: the snow bunting and pipits have already been instanced; and we may also mention the common gull. The curlew also was seen to perch on bushes and trees at Sujma, near Archangel, by Alston and Harvie Brown, in 1872. There can be little doubt, we imagine, that this habit was induced in the first instance by the flooding of great tracts of country by the annual overflow of the rivers in spring, just at the time of the passage of the migratory flights, and, further, that what was originally forced upon them has become, by use, a favourite habit." Dr. Coues states that *Branta Canadensis*, the commonest wild goose of North America, nests, in various parts of the Upper Missouri and Yellowstone regions, *in trees*; and adds, "This fact of arboreal nidification is probably little known, and might even be doubted by some." But there are others of the Anatidæ, such as the wood duck and the common goldeneye, which place their nests in trees, and carry their young down to the water in their

bills. And a well-known instance is on record of a wild duck nesting on the top of a church-tower.

If one characteristic of the American Ornis is the number and variety of the Totanidæ, another is the extreme beauty of the game-birds which, known by the names of pheasants, partridges or chicken, are all of them true grouse. Of these, *Cupidonia Cupido*, the pinnated grouse, the well-known "prairie hen," may be pronounced the most beautiful. In the wilds spring is ushered in by the strange booming call of the sharptailed grouse. The effect of these peculiar notes, when heard for the first time, is, the Doctor says, indescribable. "No one could say whence the sound proceeded, nor how many birds, if more than one, produced it; the hollow reverberations filled the air, more like the lessening echoes of some great instrument far away, than the voice of a bird at hand."

The ruffed grouse (*Bonasa umbellus*), in those districts where it is to be met with, in the spring months produces a peculiar drumming, concerning which there has been some dispute among ornithologists. Dr. Coues agrees in the main with the reason assigned by Nuttall for this performance, and quotes his account of it:—

"In the month of April the ruffed grouse begins to be recognised by his peculiar drumming, heard soon after dawn and toward the close of evening. At length, as the season of pairing approaches, it is heard louder and more frequent till a later hour of the day, and commences again toward the close of the afternoon. This sonorous crepitating sound, strongly resembling a low peel of distant thunder, is produced by the male, who, as a preliminary to the operation, stands upright on a prostrate log, parading with erected tail and ruff, and with drooping wings, in the manner of the turkey. After swelling out his feathers and strutting forth for a few moments, at a sudden impulse, like the motions of a crowing cock, he draws down his elevated plumes, and, stretching himself forward, loudly beats his sides with his wings with such accelerating motion, after the first few strokes, as to cause the tremor described, which may be heard reverberating, in a still morning, to the distance of from a quarter to half a mile. This curious signal is repeated at intervals of six or eight minutes. The same sound is also heard in autumn as well as in the spring, and is given by the caged birds as well as the free, *being, at times, merely an instinctive expression of hilarity and vigour*. The drumming parade of the male is often likewise the signal for a quarrel; and when they happen to meet each other in the vicinity of their usual and stated walks, obstinate battles, like those of our domestic fowls for the sovereignty of the dunghill, but too commonly succeed."

Besides these peculiar notes and actions indulged in by the birds at particular times, most grouse at the pairing season perform strange dances and antics, which have been amusingly described by various writers. There is a laughable account of one of these "chicken-dances," as the Americans call them, in the first volume of the late Mr. T. Keast Lord's 'The Naturalist in British Columbia.' On this occasion it was the sharptailed grouse (*Pediocætes Phasianellus*) which provided the entertainment. At the risk of extracting a passage which may be well known to many of our readers, we give the humorous picture of the performance in Mr. Lord's own words :—

"I had often longed to be present at one of these chicken-dances ; and it so happened that, riding up into the hills early one spring morning, my most ardent wishes were fully realised. The peculiar 'chuck-chuck' came clear and shrill upon the crisp frosty air, and told me a dance was afoot. I tied up my horse and my dog, and crept quietly along, and, without exciting observation, gained the shelter of an old pine-stump close to the summit of a hillock ; and there, sure enough, the ball was at its height.

"Reader, can you go back to the days of your first pantomime, your first Punch-and-Judy, or bring to your remembrance the fresh, bounding, joyous delight that you felt in the days of your youth, when you had before your eyes some long and deeply-wished-for novelty ? If you can, you will be able to imagine my childish pleasure when looking for the first time on a chicken-dance. There were about eighteen or twenty birds present on this occasion, and it was almost impossible to distinguish the males from the females, the plumage being so nearly alike ; but I imagine the females were the passive ones. The four birds nearest to me were head to head, like game-cocks in fighting attitude—the neck-feathers ruffed up, the little sharp tail elevated straight on end, the wings dropped close to the ground, but keeping up by a rapid vibration a continued throbbing or drumming sound.

"They circled round and round each other in slow waltzing time, always maintaining the same attitude, but never striking at or grappling with each other ; then the pace increased, and one hotly pursued the other until he faced about, and *tête-à-tête* went waltzing round again ; then they did a sort of 'Cure' performance, jumping about two feet into the air until they were winded ; and then they strutted about and 'struck an attitude,' like an acrobat after a successful tumble. There were others marching about, with their tails and heads as high as they could stick them up, evidently doing the 'heavy swell ;' others, again, did not appear to have any well-defined ideas what they ought to do, and kept flying up and pitching down again,



and were manifestly restless and excited—perhaps rejected suitors contemplating something desperate. The music to this eccentric dance was the loud ‘chuck-chuck’ continuously repeated, and the strange throbbing sound produced by the vibrating wings. I saw several balls after this, but in every one the same series of strange evolutions were carried out.”

As is well known, our own black-game are given to very similar proceedings. The beauty of the scene is still fresh in our memory when, one perfect evening in early May, we witnessed certain gallant young black-cocks entertaining a select party of gray-hens to an exhibition of their dancing powers on the top of Winsford Hill, one of the most beautiful peaks of Exmoor. All sportsmen know how wary a bird is Master Blackie and difficult to get near when the shooting season is well on; but those mentioned above were so engaged in their antics that they permitted us to approach them within a few feet without taking any notice. Their attitudes closely resembled those of the sharptailed grouse described by Mr. Lord; there was the same dancing of the birds round and round, with their heads close together, like young cockerels commencing an *affaire d'honneur*; the same standing near at hand of other cock birds, engrossed in seeing that all was done in proper style; while above the tufts of heather we could see the heads of the belles of the pack, their bright eyes raining influence, no doubt, and prepared to award the prize of their devotion to the best-approved performer.

We are fond of reading of that touching tameness which takes possession of all wild things when under the power of the parental *storgé*. Dr. Coues has mentioned many instances, some of which we have already quoted; here is yet another, relating to the whitetailed ptarmigan (*Lagopus leucurus*):—

“While on her nest, the bird is very tame. Once, while walking near the summit of the range, I chanced to look down, and saw a ptarmigan in the grass, at my very feet; at the next step I should have trodden upon her. Seeing that she did not appear frightened, I sat down gently, stroked her on the back, and finally, putting both hands beneath her, raised her gently off the nest and set her down on the grass, while she scolded and pecked my hands like a sitting hen; and, on being released, merely flew off a few yards and settled on a rock, from which she watched me until I had gone away. Late in July I came across a brood of young ones, apparently not more than four or five days old. They were striped with broad bands of white and blackish brown, and looked precisely like little game chickens.

The mother flew in my face and hit me with her wings, using all the little artifices that the quail and partridge know so well how to employ, to draw me away; while her brood, seven or eight in number, nimbly ran and hid themselves in the dense grass and among the stones."

We have always felt a weakness for owls. By the American Indians these birds are regarded with much superstition; the rule being, the smaller the owl the bigger the medicine. *Glaucidium Californicum* of Selater, the tiniest of all the American species, is the "medicine" or "death owl" of the Indians. Mr. Keast Lord had an opportunity of observing this little species nesting in Vancouver Island, and has written an interesting account of its habits. But, besides these pigmies, there are in the American list such splendid owls as the Virginian great horned owl, and the beautiful snowy owl. With but few exceptions, owls are solitary recluses. It is not often that more than a pair are seen together. In this country, in the winter time, sometimes as many as a score of the shorteared owl may be flushed together from a spot of rushy ground; but we have no other owls in our list which congregate. Dr. Coues relates an instance of the longeared owl once forming a community. This bird is a variety of our English species, known as *Otus Wilsonianus*. Quoting from information supplied by Dr. Gentry, Dr. Coues tells us:—

"Within three-quarters of a mile of Chestnut Hill (upper part of German-town), existed an immense forest of pines, within a comparatively recent period, which was the great place of rendezvous of the longeared owl during the dreary winter months, and where, in the spring-time, the females deposited their eggs in rude and unsightly nests of their own construction. The numbers that thronged this thicket of pines was prodigious, so there were very few of the trees, if any, that had not supported one or more nests. The many fragments of the bones of mammals and birds, and the other remains of the same in piles upon the ground, bore testimony to the wholesale destruction of life that was carried on. Within the last two years, during which time many of the trees have yielded to the woodman's axe, the number that visit the wood is small in comparison. The birds have mostly gone to more congenial localities, and but a few remain of all that mighty host."

There is one interesting species of owl, varieties of which are common in both North and South America, which, as is well known, is social; concerning whose habits a good many fables

have been handed down. This is the burrowing owl, at one time believed to live in common with prairie dogs and rattlesnakes. Whenever it can save itself the trouble of excavating its own burrow, this bird is only too pleased, and the disused dens of wolves, foxes, and badgers, and especially of the various species of marmot squirrels, are taken advantage of. From this lazy custom of the owls arose the tradition of their sharing the homes of the prairie dogs, and the rattlesnakes were thrown in by way of making things comfortable :—

“According to the dense bathos of such nursery tales, in this underground Elysium the snakes give their rattles to the puppies to play with, the old dogs cuddle the owlets, and farm out their own litters to the grave and careful birds; when an owl and a dog come home, paw-in-wing, they are often mistaken by their respective progeny, the little dogs nosing the owls in search of the maternal font, and the old dogs left to wonder why the baby owls will not nurse. It is a pity to spoil a good story for the sake of a few facts, but, as the case stands, it would be well for the Society for the Prevention of Cruelty to Animals to take it up. First, as to the reptiles, it may be observed that they are like other rattlesnakes, dangerous, venomous creatures; they have no business in the burrows, and are after no good when they do enter. They wriggle into the holes, partly because there is no other place for them to crawl into on the bare, flat plain, and partly in search of owls' eggs, owlets, and puppies, to eat. Next, the owls themselves are simply attracted to the villages of prairie-dogs as the most convenient places for shelter and nidification, where they find eligible, ready-made burrows, and are spared the trouble of digging for themselves. Community of interest makes them gregarious to an extent unusual among rapacious birds; while the exigencies of life on the plains cast their lot with the rodents. That the owls live at ease in the settlements, and on familiar terms with their four-footed neighbours, is an undoubted fact; but that they inhabit the same burrows, or have any intimate domestic relations, is quite another thing. It is no proof that the quadrupeds and the birds live together, that they are often seen to scuttle at each other's heels into the same hole when alarmed; for in such a case the two simply seek the nearest shelter, independently of each other. The probability is, that young dogs often furnish a meal to the owls, and that, in return, the latter are often robbed of their eggs; while certainly the young of both, and the owls' eggs, are eaten by the snakes. In the larger settlements there are thousands upon thousands of burrows, many occupied by the dogs, but more, perhaps, vacant. These latter are the homes of the owls. Moreover, the ground below is honey-combed with communicating passages, leading in every direction. If the underground plan could be mapped, it would

resemble the city of Boston, with its tortuous and devious streets. The dogs are continually busy in fair weather in repairing and extending their establishments; the main entrances may be compared to the stump of a hollow tree, the interior of which communicates with many hollow branches that moreover intersect, these passages finally ending in little pockets, the real home of the animals. It is quite possible that the respective retreats of an owl and a dog may have but one vestibule, but even this does not imply that they nest together. It is strong evidence in point, that, usually, there are the fewest owls in the towns most densely populated by the dogs, and conversely. Scarcity of food, of water, or some obscure cause, often makes the dogs emigrate from one locality to another; it is in such 'deserted villages' that the owls are usually seen in the greatest numbers. I have never seen them so numerous as in places where there were plenty of holes, but where scarcely a stray dog remained."

The nest of the burrowing owl is described as very filthy. The birds carry into it all manner of refuse. One nest which was examined was found to be well filled "with dry, soft horse-dung, bits of an old blanket, and fur of a coyoté" (*Canis latrans*). The whole nest swarmed with fleas. In the passage leading to it were scraps of dead animals, such as pieces of the skin of the antelope, half-dried and half-putrefied; the skin of the coyoté, and part of a snake on which the birds had been feeding. Seven young birds were in the nest, all balls of down. In general the burrowing owl is an insect-feeder, running over the prairie in search of grasshoppers and small lizards, but nothing comes very much amiss to it. Our last quotation from Dr. Coues' book shall be his amusing account of the gesticulations of these owls:—

"As commonly observed, perched on one of the innumerable little eminences that mark a dog-town, amid their curious surroundings, they present a spectacle not easily forgotten. Their figure is peculiar, with their long legs and short tail; the element of the grotesque is never wanting; it is hard to say whether they look most ludicrous as they stand stiffly erect and motionless, or when they suddenly turn tail to duck into the hole, or when engaged in their various antics. Bolt upright, on what may be imagined their rostrum, they gaze about with a bland and self-satisfied, but earnest air, as if about to address an audience upon a subject of great pith and moment. They suddenly bow low, with profound gravity, and rising as abruptly, they begin to twitch their face and roll their eyes about in the most mysterious manner, gesticulating wildly, every now and then bending forward till the breast almost touches the ground, to propound the argument with more telling effect. Then they face about to address the rear, that all

may alike feel the force of their logic; they draw themselves up to their fullest height, outwardly calm and self-contained, pausing in the discourse to note its effect upon the audience, and collect their wits for the next rhetorical flourish. And no distant likeness between these frothy orators and others is found in the celerity with which they subside and seek their holes on the slightest intimation of danger."

Thus have we wandered on from one pleasant extract to another, until we fear we have more than occupied our allotted space; and still are there many more passages we should like to present to the reader. We have not touched on the great family of raptorial birds, save a notice or two upon the owls, some of its humblest members; and many of the larger American hawks are interesting to us from the fact that individuals have strayed to the British Islands. It would appear that there is an American condor which as yet has not come into the hands of any naturalist for scientific description. This is the Queleli of the Indians, a bird regarded by them with the utmost veneration, concerning which they have strange legends. The people of Sonora declare that it possesses *four wings*. In Mr. Boyle's amusing tales of adventure in America, 'Camp Notes,' we read of the mysterious Queleli having been seen in Arizona. It swept on its great wings low above the privileged spectator. The bird is described as of great size, and of an almost pure white plumage. Inhabiting those dangerous tracts of country still infested by savage Indian tribes, some time may still pass before a specimen of it be procured. But there is no doubt that an undescribed condor or vulture exists to-day among the mountain districts which are the homes of the Apaches.

MURRAY A. MATHEW.

Bishop's Lydeard, August 16, 1876.

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**Occurrence of the Whitesided Dolphin on the Irish Coast.**—It is with great pleasure that I am able to record an interesting addition to our Irish Fauna, through the occurrence of a fine specimen of this rare cetacean (the *Delphinus acutus* of J. E. Gray), which was washed ashore here dead, but in a perfectly fresh state, on the 19th of July, and measured about seven feet six inches, of which one foot was tail, and the depth of this appendage was twenty-three inches. As usual in such cases, I did not hear of the incoming of this individual until too late; when I got to the scene of action the idle part of the population had mutilated the remains, one man having

taken the head, which, however, he was good enough to show me, and let me measure, but refused ten shillings for, as he "wanted to make a saw of it!" another had the back fin, a third the tail; the latter part, however, was presented to the lady below whose house the dolphin was washed ashore, and who, hearing that it was a rare species, most kindly presented it to me, upon which I sent it, with a characteristic piece of the skin, showing the various colours, up to my friend Mr. A. G. More, of the Royal Dublin Society's Museum. According to the last edition of Bell's 'British Quadrupeds' (p. 470), this species seems to have occurred nowhere on the British coast, except among the Orkney Islands, and it is undoubtedly the first time that it has been obtained on the Irish coast. There was a cut about two inches long on its side, immediately under the back fin, probably made by a harpoon. The arrangement of colours, the tail, and especially the head, differ very much from the engraving in Bell's 'British Quadrupeds,' which does not show the projecting snout; but my specimen certainly had the nose almost as marked as in the figure in "Bell" of *D. tursio*, while the tail in his figure is out of all proportion small; it is also to be noticed that the colours are somewhat differently arranged; nor does Bell mention a light blue stripe running along the side below the white mark, which was very conspicuous in my specimen. I have still some hope of obtaining the skull and perhaps some of the vertebrae, and shall let you know if I should obtain any further information.—*J. Douglas-Ogilby; Portrush, July 20, 1876.*

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**Ornithological Notes from Blakeney.**—I shot some sanderlings on the 12th of August at Blakeney, in Norfolk, and found them, to my surprise, to be old birds. Probably the young ones, which have far to come from the place where they were hatched, had not yet arrived, and these old ones had most likely not been so far. To take another species, the dunlin: this bird breeds in Scotland and in some parts of England, and in the beginning of August there are more young dunlins than old ones at Blakeney. At that time the turnstones are only just commencing to come. On the 12th I only shot one, where later in the season I have sometimes shot six or seven in a day, but that was an adult in most perfect summer plumage. I cannot help alluding with satisfaction to the marked increase of the terns. It is generally believed that it is illegal to take their eggs, to which circumstance their increase is in part owing. At the furthest point of the north side of the harbour I saw such a drove as would never have been seen eight years ago: it consisted of about two-thirds lesser terns and one-third common terns, with a few black terns and I believe also a few arctic terns; there could not have been less than two hundred and fifty of them. Near them were a few blackheaded gulls. The young of this species of gull is very common at Blakeney at this time, much more so than any other kind of

gull. They quit their breeding haunts at Scoulton and Hoveton before they have learned what danger is, and coming down to the sea-coast fly heedlessly within range of every gunner. Last month (July 14th) I saw one in a field at Cromer: it was quite able to fly, but apparently insensible to danger: after several attempts to catch it with a net I left it to feed in peace, but, unluckily for the poor gull, the field abutted on a school: as soon as lessons were over a troop of boys poured out, espied it of course, and speedily brought it down with a stone. I understand from a gentleman who is a naturalist that he saw a Richardson's skua on or about the 9th at Blakeney, which is early.—*J. H. Gurney, jun.; Northrepps, Norwich, August 13, 1876.*

*Erratum.*—In my note on the godwits in the August number of the 'Zoologist' (S. S. 5046) for British read bartailed.—*J. H. G., jun.*

**Sternum of the Peregrine Falcon.**—I mentioned in the 'Zoologist' (S. S. 3046) the occurrence of a female peregrine beginning to assume the adult plumage at Hempstead, in Norfolk, on the 2nd of February, 1872. In my father's opinion it is an early bird of the preceding summer, but the adult plumage is very considerably developed, and I should have supposed that it had been older. I allude to it again to say that I have compared its sternum with the sterna of several other peregrines, and to my surprise find it the only one which has posterior emarginations in lieu of holes—a fact which militates against the commonly received opinion that these membranous spaces in birds fill up with age, until they become nearly or quite ossified.—*Id.*

**Hen Harrier in Northumberland.**—On the 27th of May last I observed one of these birds passing over this neighbourhood; it was flying low in a north-westerly direction, and passed me within easy gun-shot; therefore, I could not mistake the species, with which in days gone by I was so familiar. I used often to watch and admire this bird as it hunted and quartered so beautifully the outskirts of those extensive mosses in the west of Stirlingshire in search of its quarry. No pointer or setter could surpass it in this; it left no likely part untried, and when its quarry rose almost under its wings it immediately swooped at it; but if the quarry deftly evaded this first swoop, the harrier seldom made a second, or even attempted pursuit to obtain it.—*Samuel Yuille; Shotley Hall, Durham. (From the 'Field' of July 8th, 1876.)*

**Syrnium aluco.**—Mr. Gatcombe (Zool. S. S. 3398) mentions a tawny owl which flew down a chimney. An owl of this species flew down a chimney at Northrepps. I was not before aware that they frequented such places. It was a most grimy creature when I saw it—a regular melanism, in fact, and the only melanism of a tawny owl I ever heard of, except the specimen at Constantinople, which has been recorded twice in the 'Ibis' (1870, p. 77, 1876, p. 63).—*J. H. Gurney, jun.*

**Woodchat Shrike at Lyme Regis.**—On the 22nd of June, being on the Lyme Undercliff with a companion,—both of us provided with good telescopes,—we observed a fine male woodchat shrike perched on one of the bushes which abound over that vast tract of tumbled ground. I had no doubt of the identity of the bird; but, not having seen one before in this country, I made a sketch while watching it, noting carefully the arrangement of its colours—remarking the rich red-brown of the upper part of the head and neck, the black line running backwards from the forehead and inclosing the eye, the large white patch on the shoulder and the smaller white mark on the otherwise black wing, and the pale gray of the throat and breast. These observations we were able to make at our leisure, as the bird remained for some minutes before us, within easy range, frequently changing its position, turning now its front and now its side to our view. My notes having been taken down and verified on the spot, though they are imperfect as a description of the shrike, are yet sufficient to leave no doubt as to the identity of the species.—*Arthur Lister; Highcliff, Lyme Regis. (From the 'Field,' July 8, 1876.)*

**Fauces of the Blackcap.**—Prof. Newton, on the authority of Beltoni, says the *fauces* of the nestling blackcap are pink (Zool. S. S. 3527), and further on Mr. Cecil Smith, from personal observation, speaks of them as pale pink (S. S. 3627). A few weeks ago I found a blackcap's nest, with eggs in it on which the old bird was sitting, and her young when hatched had what I should term mouths of a bright red-lake colour. On my last visit to the nest they were nearly fit to fly, and I took one of them out of the nest to examine it.—*J. H. Gurney, jun.*

**Blue Tit nesting in a Hole used by a Kingfisher.**—A few days since I went with a boy to be shown a hole where a pair of kingfishers had bred this year. It is near the top of a small arch which is under the canal and through which a stream runs: it is about two feet from the entrance to the arch. On looking into this hole I saw a bird which was not inclined to come out; however, after a little poking with a stick, out came a blue tit into my hands: it was a little frightened and glad to fly away. It was impossible, from the shape and size of the hole, to ascertain whether it contained eggs or young birds. So far as my experience goes, kingfishers prefer nesting in holes in the banks of streams to holes in masonry.—*J. E. Palmer; Lucan, County Dublin, July 22, 1876.*

**"Supposed new British Lark"** (Zool. 1697).—The isabelline variety of our common sky lark, which is not of infrequent occurrence, is described as a species upon anatomical grounds, under the name of *Alauda isabellina*, in the fifth volume of the 'Zoologist' (Zool. 1697), by Mr. S. Mummery. The passage is alluded to in the first volume of Dresser's 'Birds of Europe' (article Skylark), under the head of varieties, and everyone will agree with the author that under that head these birds must go. Having



just had two breast-bones of these isabelline larks for comparison with the common-coloured sort, it may be worth while (Mr. Mummery having founded his name on a difference of structure) to say that, as was to be expected, I can see no difference.—*J. H. Gurney, jun.*

**Hooded Crows at Flamborough in Summer.**—I mentioned (Zool. S. S. 2728) having seen a pair at Flamborough on the 22nd of June. Mr. Bailey writes me that on the 13th of the present month (August) he was taking a stroll over the identical place, and saw six. He thinks they had bred on the cliff, and I have no doubt he is right.—*Id.*

**Magpie laying twice in the same Nest.**—A gentleman who saw my note on the crows in the July number of the 'Zoologist' (S. S. 5005), sends me the following information:—Early in 1875 a magpie built her nest in an ash tree in a hedgerow, which was robbed, but she soon laid seven more eggs; and this year, in an adjoining field, precisely the same incident was repeated.—*C. Matthew Prior; The Avenue, Bedford.*

**A productive Wryneck.**—In the volume of the 'Zoologist' for 1872 (S. S. 3227) I have given in some detail an account of a pair of wrynecks which laid forty-two eggs in one summer. From the friend who furnished me with the particulars I have now obtained the completion of these wrynecks' history. He tells me that the next year (1873) they again laid forty-two eggs, making the extraordinary total of eighty-four eggs in two years, if they were, as he supposes, the same pair both years. This must be a matter of conjecture, but they nested in the same hole of the same stump, so that it seems likely that they may have been the identical birds. In 1874 only one egg was laid, and in 1875 none: a wryneck came to the hole, but it was occupied by a longtailed field mouse, and the bird, I am informed, was disgusted and flew away. If the infatuated creature had had brains enough to remember the past, it might have been thankful, I should imagine, for the interposition. My friend has given me some of the eggs. Although it has long been well known among British collectors that the wryneck may be deluded into laying a large number of eggs, by abstracting a few at a time, and by never suffering her to sit, the above anecdote is, I think, unprecedented.—*J. H. Gurney, jun.*

**History of a Young Kingfisher.**—As the kingfisher is uncommon and unknown in some parts of the British Isles, and not often kept in confinement, the following account of a young one now in my possession, may be of interest. It was one of five brought to us in a basket, on the 31st of May, by a boy who had taken them from a nest in the bank of a small stream not more than three feet wide; they were fully fledged, and we think about three to four weeks old. We kept one and gave the others to Mr. Carter, the Superintendent of the Zoological Garden, in Phoenix Park, Dublin, thinking that they would be more likely to thrive there than with us, but unfortunately the four all died after being there four days. The one we

kept was put into a cage, which was often placed out of doors in the daytime. After two or three days we began to allow it the use of a bath-room for the greater part of the day, so that it might learn to fly, which it did at once: when brought to us it did not fly more than half-a-yard, and then only in a downward direction. During the first week of its captivity we fed the kingfisher with six to twelve minnows and sticklebacks each day; we gave them to it head foremost, so that the fins might not stick in its throat; it always kept them in its bill for a short time, and then bolted them suddenly. When it began to take the minnows off our hands it always got them in its bill *crosswise*, where it held and shook them before swallowing them; from this time onwards it ate every day about two dozen minnows and sticklebacks, and occasionally a young gudgeon. It had been in our possession for a fortnight when we first saw it fishing for itself, but we believe it helped itself for two or three days before it was noticed doing so, because it was often not at all hungry when we went to give it a meal. While it was unable to feed itself we occasionally gave it dead fish, which it swallowed as readily as living ones: it always swallowed the latter without killing them, although it shook and squeezed them, and frequently made them bleed. In the bath-room where the kingfisher lives we keep a stock of minnows, &c., in a large earthenware basin; until lately we several times a-day put some of them out into a saucer, from which it took them, but now it fishes in the large basin. It is very interesting, and has given pleasure to many of our friends to watch the kingfisher perched on the edge of the basin, intently looking down into the water until a minnow comes within its reach, when it darts at and seizes it with its bill, without wetting its feathers. The castings or pellets cast up by the kingfisher vary considerably; some are pure white, and remind one of very fine crystals, and others are different shades of drab or gray; they are composed, I believe, entirely of fish-bones, and are about half-an-inch long, and oval; I believe they are cast up at different times of the day, and the average number produced is about one per day. I have not yet heard the usual note of the adult bird uttered by this young kingfisher; it has a kind of whistling chirp much less shrill and loud than the old bird's. Its plumage is as brilliant as that of the kingfisher at any age, but I do not know whether it is a male or female: I suspect it is a male from the length of its bill (one inch and three-quarters to one inch and seven-eighths), which probably is not yet full grown. It is stated by Montagu that the bill of the male is two inches long; he does not give the length of the female's, but says it is "not so long as that of the other sex." I have not a copy of Yarrell's 'British Birds' to consult, and I find Morris does not give the length of the bill.—*J. E. Palmer; July 6, 1876.*

**Hybrid Doves.**—It may be of interest to some of your readers to know that I have this year bred some doves between the turtle and Barbary, though it may be common enough for what I know. I had a pair of turtle

doves (brought up by hand in the spring of 1875) in my aviary. This spring the female died, and I substituted a female Barbary dove as a companion. The result has been first a pair and then a single bird, and the old birds are sitting again. The turtle doves which I have kept always showed a strong migratory tendency in the autumn, being very restless and beating against the wires. The Barbary dove not so, neither does it migrate, I believe, in its own land. What will be the feeling of the half-bred birds? In plumage they take most after the male, but are not so handsome as either parent.—*John W. G. Spicer; Spye Park, Chippenham, Wiltshire, August 13, 1876.*

**Redshank at Northrepps.**—On the 19th of August a young redshank was shot at a small road-side pond in Northrepps. It is the first that has ever occurred in the parish, and I certainly think it is remarkable, as we have neither marsh nor stream. Not many have come to our line of coast yet, but in August, 1872, I found them so plentiful at Burnham Overy, a few miles further west than Blakeney, that on the 29th I got fifteen in a few hours. It is likely that these had bred there, as they were not nearly so shy as the flocks which, a few weeks later, arrive at Blakeney (*vide* 'Birds of Norfolk,' ii., p. 214). They presented every variety of plumage, but strange to say, the majority were old birds in change or in winter plumage, one only retaining a part of its summer plumage. All, old and young, had the same yellow legs (*cf.*, 'Birds of Norfolk,' *l. c.*).—*J. H. Gurney, jun.*

**Green Sandpiper at Northrepps.**—On the 13th of August I flushed a green sandpiper in our paddock. It uttered no cry on rising (*vide* Zool. S. S. 3318). There is no doubt that August is the month in which this species of knot occurs, though Mr. Stevenson plainly shows that there is no month in which "one or more examples are not occasionally met with" ('Birds of Norfolk,' ii., p. 223).—*Id.*

**Woodcock Migrating in July.**—About the end of July a woodcock was found on the shore at Beeston, in Norfolk, having been apparently washed up by the waves: it was half-eaten when found. I did not see it until some time afterwards, so cannot say how long it had been dead, but think it would have been all eaten if it had been in the water long. The inference is that it was attempting to migrate in the summer time, at a date when no migration is *known* to take place of this or any other British bird.—*Id.*

**Knot and Green Sandpiper at Aldeburgh.**—A knot in full breeding plumage was shot at Aldeburgh, Suffolk, on the 1st and a green sandpiper on the 10th of August, 1876.—*F. Kerry; Harwich Bank, Harwich.*

**Early Occurrence of the Gray Phalarope in Devon.**—On Saturday, the 5th of the present month, a gray phalarope (*Phalaropus lobatus*) was brought to Mr. Luckraft, birdstuffer, which had been captured by a boy in Stonehouse Creek, close by the Naval and Military Hospitals. The lad was fishing for small crabs from some balks of timber, with a line to which

was attached a stone and a fish's head, when, upon observing a strange and very tame bird, which at first appeared to be in company with some "dishwashers" (wagtails), alight in the water almost close to him, he waited an opportunity, threw his line, and knocked it down. This bird, which I have examined, is a small specimen and in full moult, with many of the chestnut or orange-brown feathers of the breeding-plumage still remaining on the neck, breast and under tail-coverts, but with some perfectly new lead-gray feathers appearing among the dark ones on the scapulars and back; indeed the plumage much resembles that of a young bird of the first autumn, with the exception of the mixture of rufous and white on the under parts. The dark feathers seem much faded, and all are white at the base. Mr. J. H. Gurney, jun, in his 'Summary of the Occurrences of the Gray Phalarope in Great Britain during the Autumn of 1866,' mentions the early dates of August 20th, 24th and 29th, but I have never known them to occur in Devon before the middle or latter end of September, October being the usual time of their appearance.—*J. Gatcombe*; 8, *Lower Durnford Street, Stonehouse, Devon, August 11, 1876.*

**Change of Plumage in the Moorhen.**—I should be much obliged if some reader of the 'Zoologist' could give me any particulars concerning the change of plumage in the moorhen. I had always thought that the male bird could be distinguished from the female by certain outward differences, such as the red patch above the bill, &c., but I think so no longer. In the 'Naturalist's Note-Book' for 1868 there is a very interesting article, by a writer signing himself "A. M. B.," on this subject, in which the author proves—I think beyond doubt—that there is no outward difference whatever between the sexes: he states that the handsome birds are aged, and the sombre-coloured ones are the younger birds. I may state that I went to a very clever, though not perhaps very scientific, birdstuffer, and asked him what his opinion on the subject was: he replied that he had often taken eggs out of the more handsome bird, and he produced a stuffed specimen which had all the reputed points of a male, yet he assured me that it was full of eggs. He then went on to state that the richly-coloured bird was the waterhen, or moorhen, but the other was the brown gallinule! He showed me a list of some birds he had observed, amongst which I noticed both the moorhen and his so-called "brown gallinule." I pointed out to him that the brown gallinules were but immature birds, but I doubt if he quite believed it. Mr. Gould considered the handsome bird to be the female and the other the male.—*C. Matthew Prior.*

**The Polish Swan.**—Since the year 1851 I have had opportunities of examining a good number of so-called "Polish" swans, and cannot agree with the opinion expressed by Mr. J. H. Gurney, jun. (*Zool. S. S.* 5047) that it is not a good species. The breeding of the pair entrusted by the Zoological Society to Mr. J. H. Gurney, and those formerly in the possession

of Lord Lilford, have removed any doubts on the subject which might previously have remained in my mind, and I think placed it beyond doubt that there is a swan differing (as shown by Mr. Yarrell in 1838) from *Cygnus olor*, which produces white or nearly white cygnets, and these not albinos. There are on the rivers and broads of Norfolk swanherds of great experience, and I have never been able to learn from them of one instance of a white cygnet appearing in the many broods of mute swans which they have reared. The mixed brood mentioned by Dr. Westerman is the only instance I have heard of, and that I believe may readily be accounted for, as suggested by Mr. Yarrell, by one of the parents being a mute swan. Mr. Gurney, jun., says these mixed broods have occurred "more than once," and gives references to authorities to which I have not access. From the fact of more than one Polish swan killed in this neighbourhood having been partially pinioned, I am led to believe that—although others have been undoubtedly wild specimens—there are birds of this species at large on our waters unknown to their owners, and that various degrees of infusion of the *Olor* blood may account for individuals which I have observed partaking more or less of the characters of both species. Mr. Gurney, jun., mentions such birds on the Serpentine and at Gatton Park; I have noticed others, and one on the lake in Battersea Park, so far as I had an opportunity of observing it, appeared to me to be almost a pure *Polander*. Like Mr. Gurney, jun., I do not wish to anticipate Mr. Stevenson, who will enter at length into the subject in his forthcoming volume of the 'Birds of Norfolk,' and Mr. Gurney will doubtless report upon the pair now rearing their young at Northrepps, which I have watched with very great interest.—*Thomas Southwell; Norwich, August 14, 1876.*

**Varieties of the Teal** (Zool. S. S. 5017).—I have more than once shot very rufous specimens of the teal—*i. e.* with the under parts suffused with rufous or rusty ochre. I have always considered that this was caused by the oxide of iron in the water where the birds have been in the habit of feeding, and I have little doubt a chemical examination of the colouring matter on the feathers of such specimens will show that the colour is due to some staining process. Mr. Sclater (Zool. S. S. 4816) mentions having sponged the breast of his bird with hartshorn, but I am doubtful if hartshorn would *take out* a stain caused by oxide of iron, though it might remove a superficial stain of blood. I may mention also that I have shot one or two specimens of the common wild duck in this neighbourhood with similar coloration on the breast, which I have also considered was caused by oxide of iron.—*J. A. Harvie Brown; Dunipace House, Larbert, August 1, 1876.*

**Food of the Redbreasted Merganser.**—December 19, 1866. An old male from Ireland skinned by me contained in its oesophagus a crab, and a fifteen-spined stickleback about five inches long, which may be worth recording, as showing the food of this species.—*J. H. Gurney, jun.*

**Breast-bones of Guillemots.**—I have compared the breast-bones of some bridled guillemots with breast-bones of common ones, and I cannot find a shadow of difference. Being from birds of my own preparing, I took the precaution of marking the sex where I was able, but I do not see that the bones of the females differ in the least degree from the males. While there are still some who cling to the long-lived belief of the bridled guillemot's being a good species, which I for one can never assent to, this grain of evidence against it may be worth having. I may add that I recently prepared the breast-bone of a white guillemot (a beautiful variety, but not an albino), and that also agreed in size and contour with the bone of the normal bird, and in no respect differed that I could see from several with which I compared it.—*J. H. Gurney, jun.*

**“Kittiwake in Winter”** (Zool. S. S. 5048).—At the time my friend Mr. Alston recorded a specimen of the kittiwake from the Ayrshire coast in winter, it was generally considered to be a rare species in Scotland at that season. Since then—or from about that time—they have appeared almost every winter upon our coasts; and in the winter of 1872-73 multitudes of this species frequented the estuary of the River Forth between Kincardine and Alloa. For an account of the invasion of arctic gulls during that season I would refer your readers to the lately published part of the ‘Proceedings of the Glasgow Natural-History Society’ (vol. ii., part 2, pp. 198 and 210), where Mr. Robert Gray and myself take notice of these and other species, notably the glaucous and Iceland gulls. I should say that at the time Mr. Gurney received his specimens of the kittiwake from Dumfriesshire they were decidedly a rare winter bird in Scotland. I think it would be interesting to naturalists to have statistics of this arctic invasion collected throughout Great Britain. I understand that unusual numbers were also observed in the estuary of the Solway, and the Severn and Bristol Channel, and elsewhere, and glaucous and Iceland gulls were seen in numbers along the east coast of Scotland. The localities visited, however, by the Iceland gulls appear to have been much fewer in number than those visited by the glaucous, judging from such records as we possess from correspondents. The Firth of Forth, indeed, seems to have been *the* favoured locality, and there they were quite abundant.—*John A. Harvie Brown.*

**The Worcestershire Tropic-Bird.**—Illness and other causes have prevented my usual attention to the contents of the ‘Zoologist’ for several months. I have only just observed the several notes on the tropic-bird, and in answer to Mr. Gurney's query (S. S. 4766), I am glad to be able to say that I am the present possessor of the “Worcestershire Tropic-Bird,” having purchased it, with about two hundred other birds, at the sale alluded to in 1867. It is certainly *Phaëton æthereus*, not the red-tailed species. It has been authenticated as having been picked up, in the flesh, on the

farm of a Mr. Yapp, of Cradley, near Malvern. I wonder that the present curator of Worcester Museum, who knows me, has not answered this question.—*William H. Heaton; Meadow Croft, Reigate, Aug. 15, 1876.*

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**Short Sunfish.**—On Wednesday, the 16th instant a specimen of this rare and strange fish was delivered at this Aquarium. It was captured on the Irish coast, near Ardglass, by Mr. J. M'Dougall, of St. Ninian's, and forwarded by Mr. James Smyth, of Ardglass, carefully packed in a crate of straw. Mr. Smyth assures me that, "although this specimen was inspected by over a thousand English, Scotch and Irish fishermen, not one could tell what it was." This is not to be wondered at, when we consider that, on an average, perhaps only three specimens of the same fish are reported yearly. The short sunfish (*Orthogoriscus mola*) of all our British fishes is perhaps the most remarkable in shape. Its abruptly terminating body and rigid dorsal and anal fins, like acute triangles projecting above and below, give the sunfish the appearance of having been deprived of its posterior portions, making it look as though it were only half its former self. The specimen, which is of a fair average size, measures from the nose to the end of the caudal fin three feet six inches: the whole vertical height, including the dorsal and anal fins, is four feet ten inches. The pectoral fins are very small, and situated immediately behind the orifice of the branchial cavity, which is also small. The eye is exceedingly large, and moveable in its socket; it is provided with a protective cellular membrane, behind which the eye-ball is withdrawn when dangerously threatened. The skin is thick, rough, tough, and wrinkled. The colour is dark gray or blackish on back and fins, yellowish straw to dusky white on sides and belly. The fin-rays are in number—dorsal, seventeen; anal, seventeen; pectoral, thirteen. It may derive the name of "sunfish" from its somewhat rounded shape, or from its colour when seen lying on its side on the surface of the water, or from its habit of basking. Some fishermen assert that when captured this fish utters a grunting sound, which circumstance, coupled with the appearance of mouth and eyes, may have warranted the scientific appellation "*Orthogoriscus*," which in the Greek means "little pig." It is now being so preserved that it may be permanently shown in the Aquarium.—*Ernest E. Barker; Rothsay Aquarium, August 19, 1876.*

**Large Conger.**—It may be worth recording that there was caught here this morning (July 21st), in one of the salmon nets, a conger which weighed fifty-eight pounds and a half, and measured six feet three inches in total length. Most of the fishermen of this port who saw it tell me that it is the largest which they have ever come across; but one, a most intelligent and trustworthy man, says that he caught one here some years ago which measured over seven feet, and was computed to weigh over seventy pounds.

Though these weights are not to be compared with some mentioned by Yarrell, still a conger of fifty-eight pounds and a half is not to be seen every day, and I confess that I should not care to meet with one of this size when bathing, and the net in which this example was caught is set in the middle of one of our bathing-places.—*J. Douglas-Ogilby; Portrush.*

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## Proceedings of Scientific Societies.

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### ENTOMOLOGICAL SOCIETY OF LONDON.

August 2, 1876.—Sir SIDNEY SMITH SAUNDERS, C.M.G., Vice-President, in the chair.

#### *Additions to the Library.*

The following donations were announced, and thanks voted to the donors:—‘Proceedings of the Royal Society,’ nos. 170 and 171; presented by the Society. ‘Transactions of the Linnean Society of London,’ General Index, vols. xxvi.—xxx., completing the First Series; and vol. i., part 3, Zoology; by the Society. ‘The Zoologist’ and ‘Newman’s Entomologist’ for August; by the Representatives of the late Edward Newman. ‘The Entomologist’s Monthly Magazine’ for August; by the Editors. ‘Nature,’ nos. 349 to 352; by the Publishers. ‘The Naturalist; Journal of the West-Riding Consolidated Naturalists’ Society,’ no. xiii.; by the Society. ‘The Canadian Entomologist,’ vol. viii., no. 6; by the Editor. ‘L’Abeille’ (Cryptocéphales, pp. 205—236); by the Editor. ‘Bulletin of the Buffalo Society of Natural Sciences,’ vol. iii., no. 2; by the Society. ‘Check-List of the Noctuidæ of America, North of Mexico,’ i., Bombyciæ and Noctuelitæ (Nonfasciatæ); by the Author, A. R. Grote. ‘Proceedings of the Boston Society of Natural History,’ vol. xvii., parts 3 and 4; vol. xviii., parts 1 and 2; by the Society. ‘Appalachia; the Proceedings of the Appalachian Mountain Club,’ vol. i., no. 1; by the Club. ‘Fossil Orthoptera from the Rocky Mountain Tertiaries,’ by Samuel H. Scudder; ‘Fossil Coleoptera from the Rocky Mountain Tertiaries,’ by Samuel H. Scudder; ‘On the Carboniferous Myriapods preserved in the Sigillarian Stumps of Nova Scotia,’ by Samuel H. Scudder; by the Author. ‘Memoirs of the Boston Society of Natural History,’ vol. ii., part 4, nos. 2, 3 and 4; by the Society. ‘Memoirs of the Peabody Academy of Science,’ vol. i., no. 4; by the Academy. ‘Memoirs of the American Association for the Advancement of Science;’ by the Association. ‘The American Naturalist,’ vol. x., no. 6; by the Editor. ‘Notes and Descriptions of North-American Coleoptera,’ by John L. Leconte, M.D.; ‘Catalogue of the Coleoptera of Mount Washington, N. H.,’ by E. P. Austin, with Descriptions of New Species by



John L. Leconte, M.D.; 'Address of Ex-President, Dr. John L. Leconte, before the American Association for the Advancement of Science at Detroit, Michigan, August 13, 1875; by the Author. 'Notes and Descriptions of North-American Coleoptera,' by George H. Horn, M.D.; by the Author.

By purchase:—'Genera des Coléoptères,' par M. Lacordaire & M. Chapuis, vols. ix. to xii., and plates 81 to 134, completing the work. 'Bericht über die wissenschaftlichen Leistungen im Gebiete der Entomologie,' 1871 and 1872.

#### *Election of Members.*

Mr. Harold Swale, of St. George's Road, Pimlico, and Mr. Thomas Stanton Hillman were balloted for and elected Ordinary Members.

#### *Exhibitions, &c.*

Mr. Stevens exhibited specimens of *Tillus unifasciatus* and *Xylotrogus brunneus*, taken on an oak fence at Upper Norwood. These insects did not appear to have been taken near London for many years.

Mr. Forbes exhibited a specimen of *Quedius dilatatus* (a parasite in hornets' nests), taken by him at sugar in the New Forest.

Mr. Champion exhibited *Harpalus 4-punctatus*, *Dendrophagus crenatus*, *Leptura sanguinolenta* (female), *Amara alpina* (female), *Cryptophagus parallelus* and *Omosita depressa*, all taken at Aviemore, in Inverness-shire.

A letter was read from T. V. Lister, Esq., of the Foreign Office, transmitting, for the information of the Entomological Society, a copy of a despatch from Sir John Walsham, Her Majesty's Chargé d'Affaires at Madrid, relative to the plague of locusts, together with a box containing specimens of the insect, and a number of earthen egg-cases, each containing from thirty to forty eggs. The despatch stated that the Official Report showing the progress of the plague and the steps taken to exterminate the insect had not yet been published, but a copy would be sent to the Society in a few weeks. It was said that the damage done by the locusts this year was considerably less than that of last year, owing to the number of soldiers which the Government had been enabled to employ since the war was over to assist the inhabitants of the districts where the plague existed in destroying the insects. The insects sent were stated to be specimens of *Locusta migratoria*, but on examination they were ascertained to be the *Locusta albifrons*, *Fab.* (*Decticus albifrons*, *Savigny*).

Mr. M'Lachlan exhibited a series of thirteen examples of a dragonfly (*Diplax meridionalis*, *Selys*), recently taken by him in the Alpes Dauphiné of France, between Grenoble and Briançon (the exact locality being near

the village of La Grave, at the base of the 'Aiguille du Midi'), remarkable for the extent to which nearly all were infested by the red parasite described by De Geer as *Acarus libellulæ* (perhaps a species of *Trombidium*). Of the thirteen examples captured casually only one was free from parasites, the number of them on the others being respectively 7, 8, 9, 15, 17, 19, 28, 47, 51, 73, 96 and 111, or a total of 481 on twelve individuals. They were firmly fixed on the nervures towards and at the base of the wing, almost invariably on the under side; but whatever might be the number on any particular dragonfly it was always divided nearly symmetrically on the two sides of the insect—those much infested having a very pretty appearance, from the wings looking as if spotted with blood-red. He had no doubt that the Acari must have attained their position by climbing up the legs of the dragonfly when at rest; probably they did not quit it till the dragonfly died, or perhaps they died with it, so firmly were they fixed. He remarked that the history of the Acari was involved in much obscurity, for it appeared by no means certain that all those existing could ever gain access to dragonflies; just as in the case of the bed-bug and the house-flea, where there must be myriads that never have an opportunity of tasting human blood. He further noticed that, at the meeting of this Society on the 1st of August, 1864, he exhibited a dragonfly from Montpellier similarly attacked, and it was recorded as *Diplax striolata* (Tr. Ent. Soc., 2nd series, vol. ii., Proc. xxxvi). This was an error, the insect being *D. meridionalis*, which seemed to be particularly subject to attack.

Mr. F. Smith read the following:—

*Note on Nematus gallicola, Steph.*

"This is one of the commonest species of sawfly found in Europe; it is the maker of the well-known red galls so plentiful on leaves of different species of willow. The galls are, as Mr. Cameron observes, in his communication to the 'Scottish Naturalist,' somewhat local, but they are extremely abundant in many situations. I have on many occasions collected large quantities of leaves, more or less covered with galls, and have bred many hundreds of the flies—all proving on examination to be females. Mr. Cameron observes, in the paper alluded to, 'The male is quite unknown to me, and this appears to have been also the case with Hartig.' Last spring I collected, in the London district, a quantity of the galls, placing them in a large flower-pot half-filled with garden mould. The larvæ soon quitted the galls and buried themselves in the mould for the purpose of undergoing their transformations. About a month after this the flies began to issue forth, probably to the number of from five to six hundred: among this number I had the satisfaction of finding two males. This sex closely resembles the female, but has a narrower body, longer antennæ, and the tip of the abdomen is pale; the abdomen is also narrower, and not, as

in the female, widened towards the apex. This season I have repeated my experiment, and have obtained a single male out of several hundreds of flies.

“Mr. Cameron further observes, ‘In all probability they, like *Cynips* (*lignicola*) *Kollari* and other *Cynipidæ*, propagate without the aid of the male sex.’ This observation was undoubtedly made in ignorance of the discovery made by Mr. Walsh in 1868. In the ‘*American Naturalist*’ for that year, the author records the fact of having himself bred both sexes of *Cynips spongifica* from the galls of the black oak of North America. These galls resemble those of *Cynips Kollari*, being globular, rather larger than the European galls, but of the same hard woody consistency externally, and of the same spongy substance inside. Mr. Walsh adds, ‘By the fore-part or middle of June both male and female gall-flies eat their way out of a certain number, say about one-fourth part; the remainder are not developed until about two months later.’ In a private communication from Mr. Walsh, I learnt that he had, like myself, bred hundreds of the gall-flies from galls collected late in the autumn, all these proving to be females, and that it was not until he made collections of galls in summer, when a partial development of flies takes place, that he obtained the male, this sex being as one to many hundreds of females. At length he bred three males, one of which he kindly forwarded to me, and which I exhibited at a meeting of this Society. Following up Mr. Walsh’s method of collecting the galls of *Cynips Kollari* early in the season,—that is, just at the time when they are becoming hardened, and before any flies have escaped from the fresh galls,—I have tried, but hitherto without success, to obtain males of *Cynips*; but I advise all who are interested in the matter to pursue the same plan, always remembering that these mysteries of nature are only unfolded at intervals, and then only to favoured votaries.

“With respect to the obtaining of males of *Nematus gallicola*, I believe that any one may collect, even early in the season, thousands of the galls of that insect without obtaining a male; but in all probability, by persevering season after season, his efforts will, as in my own case, be crowned with success; but I feel assured that unless the galls are gathered before any of the flies have escaped, he will have little or probably no chance of success. The same care must also be taken in collecting the galls of *Cynips Kollari*; collecting them early, just at the time when they harden and become woody, for it is out of the flies first developed that the male may be expected to be found. My having bred thousands upon thousands of flies without obtaining a male should prove a stimulus to others, for that a male exists I think Mr. Walsh has determined beyond question. The impregnation of a single female may possibly be sufficient to render her progeny, and their descendants, for several generations, equally fertile; and the same may possibly be the history of *Nematus gallicola*. The male bred

by Mr. Walsh is said not to belong to the restricted genus *Cynips*, but to one not represented in Europe. This may be the case; but in all essential generic characters it agrees in a remarkable manner: 'spongifica,' like *Cynips* proper, has thirteen-jointed antennæ; the neuration of the wings is the same, and no difference is perceptible in the construction of the legs; the differences that are perceptible are in its abdomen being less compressed, and it is glabrous; there may be some other minor differences; the form of the thorax is apparently the same as that of *Cynips*. 'The question, 'Has *Cynips* a male?' remains, in the opinion of those who have attentively studied the group, unanswered; but surely more differences must exist between 'spongifica' and the members of the restricted genus *Cynips* than a less compressed abdomen, and the absence of the downy pile that is observable on the sides of the abdomen of *Cynips* Kollari and its allies."

A discussion ensued, in which Messrs. Dunning, M'Lachlan, E. A. Fitch and others took part, it appearing to some of the Members that there was still a considerable amount of uncertainty as to the precise generic rank of the presumed male *Cynips*.

*Papers read.*

The President, who was unable to be at the Meeting, forwarded a paper entitled, "Notes on the Habits of a Lepidopterous Insect, parasitic on *Fulgora candelaria*, by J. C. Bowering, with a Description of the Species, by J. O. Westwood," accompanied by drawings of the insect in its various stages. This curious insect, resembling a Coccus, had been brought to this country twenty-six years ago by Mr. Bowering, and on his return to India he had succeeded in rearing it to its perfect state, proving it to be the larva of a Lepidopterous insect, the general appearance of which induced the Professor to place it among the Arctiidae. The larvæ were found attached to the dorsal surface of the *Fulgora*, and as they grew had a cottony covering, which also occurred in the pupa state (a period which appeared to be of very variable duration). The evidence appeared to prove that the larvæ fed on the waxy secretion of the *Fulgora*, and the cocoon of the pupa was formed of the same substance. Prof. Westwood had previously noticed this extraordinary insect at the meeting of the British Association at Oxford in 1860, under the name of *Epipyrops anomala*.

The Rev. R. P. Murray forwarded a paper by Mr. W. H. Mislin, of Brisbane, containing "Descriptions of New Species of Australian Diurnal Lepidoptera in his own Collection."

Mr. Edward Saunders communicated the third and concluding portion of his "Synopsis of British Hemiptera-Heteroptera."—*F. G.*

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*On Human and Brute Intelligence.*

By F. H. BALKWILL, Esq.

WRITERS on mental science have hitherto been careful to exclude the mental or moral faculties of the lower animals from the limits of their subject before entering upon the examination of those of man: or if they have compared human with brute intelligence, it has been in its most violent contrasts, with the object of establishing essential differences.

This may have arisen from that feeling of pride which considers it derogatory to man's moral dignity to trace any kinship, however remote, between him and his humbler fellow-creatures; and from a suspicion that to allow the possibility of any such discussion must be disloyal to the belief, cherished by man, that he has a soul capable of an immortality not to be attained by brutes; but also, and I think principally, from ignorance.

At any rate, in consequence of the knowledge which has been accumulated and systematised by modern naturalists, and more particularly in consequence of "Darwin's theory" having suggested an hereditary connection between them, there is a wave of thought now passing over us which makes the tracing and comparing of the affinities, between the intelligence of man and the brutes, inevitable. Such a comparison cannot fail to give some aid towards the comprehension of each, even if we are not yet able to lay down exactly wherein lies the great difference between them.

The more highly organised the animal, the greater its intelligence; so that the development of this faculty may be expected to keep pace in parallel steps with the evolution of physical organisation.

The embryonic stages in the growth of many animals show marked resemblance to species lower in the scale. This fact has been pointed out in support of an hereditary connection: in the same way, when we analyse the human intelligence, in order to conceive its simplest state and growth, we find a parallel resemblance to the evolution of intelligence as conditioned by the organisation of the lower animals. It may be roughly tabulated thus—

*Simple volition accompanied by action and preceded by an imagined purpose.*

*This action, being resisted by the external world, ideas are formed of this resistance in order to overcome it.*

*Action repeated meets with resistance as before. The idea previously formed, to account for this resistance, suggests itself, and a perception is made.*

*It becomes more easy to repeat the same action than to try fresh ones to which unforeseen resistances occur; hence habit is made.*

*Habit, or the will, or perhaps habit and the will, modifies the body for the better performance of certain actions; hence organization.*

*Offspring inherit this organization. Their intelligence is conditioned to flow more readily in the same actions as that of their parents; hence instincts or other hereditary mental faculties.*

Thus far human and brute intelligence seem to run parallel. Then come the following conditions, wherein man's intelligence seems to have got quite beyond that of the brute:—

*The increase of the powers by the use of implements.*

*The communication of information and the lessons of experience by articulate language.*

*The consideration of his own mental state with a view to improving it; hence reflection.*

Animals can be arranged, according to their structures and most essential characters, so as to form a more or less perfect genealogical tree. This suggests one of two conclusions: either the arrangement represents the successive steps of idea or invention by which they were created; or that all the different species have in reality the consanguinity which this classification appears to indicate.

One of the simplest forms of animal life presents itself as a little jelly-like mass, which, to quote Professor Huxley, "possesses all the essential qualities and characters of vitality; it is produced from a body like itself; it is capable of assimilating nourishment, and of exerting movements." It has no definite organs or parts;

when it moves it pushes out any part of its body which is convenient. When it wishes to assimilate food, it can hardly be said to eat, it places itself over or against the food, which then passes directly into it through any part.

For such animals to be able to maintain their existence, the surrounding conditions of life—that is, a supply of food and the absence of a liability to mechanical or chemical injury—must be of the most favourable kind. Consequently we find that one of the first things done by animals of this type is to cover their delicate bodies with a tiny calcareous shell.

We have here, in one of the simplest forms of physical life, voluntary action, with power of changing the form of its body, power of adding to that body from other substances so as to grow by taking food, and a power of separating from itself a part which shall commence a new life with similar powers.

Such animals form the models of the ultimate parts from which all the tissues of all animals are developed.

Physiological laws, then, instead of having chemical or mechanical laws as their highest principles, can be best explained as habits of action. *Each tissue and organ of the body is the record of voluntary action passed into habit and perpetuated into instinct by the "survival of the fittest," or some other law of suitability to the surrounding conditions of life. Every animal has therefore within it all the instincts of which its organs or tissues are evidence.*

Here the question of individuality thrusts itself upon us. Is it the same life that continues on from parent to offspring? How do all these aggregations of separate animals lose their individuality and humbly class themselves as cells with fixed duties?

Does intelligence pass down from father to son? Have we dim memories of what our parents did? or does each individual begin his own experience and develop his own intelligence with such aid as the arrangement of his inherited organization may give him?

In many of the lower forms, the individuality of community only seems to have been arrived at. A sponge, for instance, is built up of a great number of small particles into canals and chambers, each of which particles "is provided with a cilium," to quote Prof. Huxley again, "and as all these cilia work in one direction they sweep water out in that direction. The currents of water sweep along such matters as are suspended in them, and these are

appropriated by the sponge particles lining the passages, in just the same way as any one of the Rhizopoda appropriate the particles of food it finds in water to itself. So that we must not compare this system of apertures and canals to so many mouths and intestines; but the sponge represents a kind of subaqueous city, where the people are arranged about the streets and roads in such a manner that each can easily appropriate his food from the water as it passes along."

In animals higher in the scale of life, when a nervous system has been evolved, this republican form of individuality soon ceases to exist. In communities of animals which have one economy, such as exists in a hive of bees, the individuality of the separate members is sufficiently evident. Thus, one solution of the difficulty which presents itself is, that through the nervous system a central government is established, to the individuality of which all the rest of the organization of cells is subservient.

All action is not the result of intelligence. The heart beats, the watch ticks, without our considering either as signs of intelligence, because they continue their actions regardless of external circumstances which do not immediately affect them. If we saw them forecast and alter their actions to suit coming events we should attribute the quality to them. If we conceive of a being understanding the working of a piece of machinery, we should allow intelligence to it. To understand is in reality to translate the principles involved into the principles of the actions of the understanding one. So far, *intelligence* will stand for a power of a being to see the relation of external things to its own powers and purposes. Again, if a being formed an intention or purpose, we must allow it intelligence. Or if it considered its own purposes in relation to its circumstances, chose some to encourage in preference to others, or formed fresh ones, intelligence would be manifested. Is intelligence, then, the power of creating ideas—the imagination?

We concede to the man who does difficult and responsible things, requiring at the same time great imaginative power, more intelligence than to him who, whilst giving evidence of equal power of creating ideas, is not capable of producing *successful* actions of equal difficulty. Is it not, then, the power to perceive truth? and, as practically manifested, the power to perceive the relation of external things to its purpose, and *vice versâ*.



Is this power of perceiving truth a substance or an attribute? Intelligence perhaps could not exist without action, action without willing, and feeling, yet our own consciousness bears us witness that these states are distinct; hence we believe that they are but states of one substance.

We are conscious we are the same individuals we ever were, whilst the substance of our bodies is being constantly changed by material loss and addition; hence we get one distinct notion of a difference between mind and body, namely, that one is always the same and indivisible, whilst the other is easily divided and always changing.

Our appeal to consciousness gives us the same answer: we can conceive that a mind cannot grow by little bits of substance being added to it, whether these possess intelligence or not.

I am aware that this does not dispose of the question as to whether mind itself is not an attribute of life. Intelligence is, then, the power of the mind to see the relation of external things to its own purposes, and *vice versâ*; but it cannot see or know anything beyond its own experience; it cannot grow, save by the efforts and experience of the mind to which it belongs.

I think if we take a clear view of these two conclusions—

The mind cannot be divided;

Its intelligence can only grow by its own efforts and experience;

and add to them another—

The mind cannot be prepared before it begins to exist (is created);

we shall get rid of a great many indistinct notions which make many of the actions of animals appear inexplicable, and the direction in which we should seek their solution will be considerably restricted.

The conditions under which intelligence acts divide into two heads:—

*First*, the organization of the animal to which the intelligence belongs; its body, with which it is always associated in time and place (so far as we are speaking of it), over the actions of which it has great power. This body is its instrument in carrying out its ends, and requires constant attention to keep in good repair and readiness for use.

*Second*, the external world—liable to change in time and space—in which it must seek to satisfy its desires. If the animal can only perform few actions, the conditions necessary to its existence must be easily fulfilled. If, on the contrary, the conditions of life are varied and scattered, they require more considerable perceptive powers and complicated actions in order to enable an animal to avail itself of them; then, according to any theory of evolution, the organization of the animal will have been gradually fitted to meet those requirements, a more highly developed species will be the result, giving conditions for developing a higher degree of intelligence. It might be impossible for it to know how to perform such complicated action without considerable experience, and we find that where a high degree of intelligence is attained a more or less lengthened period of parental care is given. The necessity for parental care no doubt has a powerful reactionary influence in stimulating the intelligence of the parent, and may prove the elementary condition for developing sympathy into affection.

But there is a consideration which will show us that evolution, if a fact, must implant in every animal a tendency to perform the actions most conducive to its existence as a species.

The most simple animal has to use its intelligence on what perceptions it can make. It finds some things suitable for food or covering, which it appropriates; some unsuitable, which it rejects. This relationship of the object to the uses of the animal I propose to call *its purpose*, using the word for the object or combination of conditions, as well as for the volition of the animal to or from them.

All animals, except the lowest, possess special organs, those of sense enabling them to perform those acts by which they recognise general qualities of objects, as well as special organs of physical movement. When a *perception* of anything takes place, a conception is made, including all the sensations received from that object, together with whatever *purpose* or relationship to itself the animal may imagine it to have.

Now if all that part of the organization by which information only is obtained has been gradually evolved from species to species as we ascend in the scale, the external conditions which brought them into existence must, at the same time, have entirely co-ordinated them, with the other active parts of the body, in accordance with the purposes of the species.

*Whatever perceptions its organization conditions the intelligence of any animal to make, will be accompanied by a co-ordination of its other active powers corresponding to the usual purposes of that species.*

There must always be in a species the organization to maintain its existence, get its food, propagate offspring, &c.; and the perceptive faculties which enable it to perceive the opportunity or right time to do this will be co-ordinated with the active powers for doing it. By this co-ordination the volition easily performs its purpose; and when conditions containing a purpose are perceived by an animal, the subjective purpose combining the necessary actions naturally flows forth.

In animals of high organization we should expect a proportionate number of subordinate purposes co-ordinated by superior purposes which were commanded finally by the individual intelligence which directed the voluntary actions.

This co-ordination is established by means of the nervous system of which a general notion may be conveyed by comparing it to a telegraphic system, permeating the body, in which the nerves represent the wires, and the gray matter of ganglia, or brain, the offices where messages are received and sent out. Intelligence is required to read the *purpose* of the message received, and to form the purpose which directs the actions ordered. For example, a fish pursues a smaller one in order to devour it. It does not use its intelligence to act all the complicated sets of muscles necessary in following the turns and twists of the prey; it merely forms a purpose from the information received from its eyes, and this purpose uses the already co-ordinated powers in pursuit. On a near approach, however, the fish sees something which makes it suspect its expected prize is a snare. It perceives an opposite purpose from almost the same visual sensations, and flies from it, the same co-ordination of muscles taking place under command of the contrary purpose.

Intelligence can only grow by its own efforts and experience; but a great deal of information or help may be had by the association of animals having similar wants. Sexual association must have immense influence in this direction. In animals of associated or gregarious lives it begets a sympathy of action which opens up a wide field for the transmission of motives or purposes thus becoming common to a species, which it might not be possible

to transmit by the co-ordination of inheritable organization alone.

Amongst men fashions, habits, and feelings are thus perpetuated; such as are necessary or "fittest" surviving, whilst those less perfectly adapted to life drop out. A law, with regard to motives, habits, &c., may be laid down almost identical in statement to Darwin's theory of the "Origin of Species." A belief in this, however, does not at all necessitate the acceptance of Mr. Darwin's views. Habits of action, we know, can be thus transmitted by association; as when an English child brought up in France only speaks French.

The power of the sympathy of association may be noticed in looking at a flock of sanderlings, which wheel and turn as if under the influence of one spirit. May not the migrations of many animals be thus explained?

Man supplements the powers of his body by the use of implements, and so varies his purposes or co-ordinated actions as give a choice as to what sort of business of life he will pursue.

This choice of business to man may be compared to that of choice of species, and at once throws open conditions, of action and reaction, to the development of his intelligence of immense importance. The further consideration of these, however, as they are not enjoyed by brutes as well as man, would hardly be suited to the pages of the 'Zoologist.'

F. H. BALKWILL.

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*Ornithological Notes from Perthshire.*

By J. WHITAKER, Esq.

ON the 20th of June last, when staying with a friend at The Barracks, Kinloch, Rannoch, Perthshire, we started for a day's fishing to Loch Eaigh, about four miles distant from the Lodge, and as the walk was partly by the river and across a portion of the famous Moor of Rannoch, I had good hopes of seeing some birds breeding there that I had never before had the opportunity of observing.

The first field we crossed was grass with a small piece of bog in the centre, on nearing which out flew a pair of redshanks, and their piteous cries and fearlessness led us to suppose they had young ones among the rushes. Leaving the field, and going on

by the river-side we saw about half a dozen pairs of common sandpipers, which kept flitting along before us, with their peculiar flight, from stone to stone, all the while making a shrill pipe. These had their young about the stones on the river side, and, after looking for a few minutes, I found one: the little fellow was just getting into nice plumage, but could not fly: on being put down a few yards from the river he started off at a good pace for the bank, while the two old birds hovered over him in a state of great excitement.

We now came to a large meadow of about eighty acres, from which the water was drained by deep cuttings fringed with rushes, this being a favourite place for snipe, several pairs of which we flushed when walking across, but, though I looked, could not find any young ones. Here also were great numbers of green plover and about twenty curlews. I also saw one golden plover and a pair of teal.

We next came to the lake, which is surrounded by hills and is about a hundred and fifty acres in extent, two-thirds of it being bog, and covered with moss, reeds, flags, and sedge, through which the river winds, forming a pond here and there, and, being far away from the "haunts of man," is the very place for wild fowl and wading birds to breed. We had only got some few yards amongst the long grass when we saw several pairs of redshanks coming towards us, which, with sharp cries, wheeled about over our heads. During the day we saw about fifteen pairs of this handsome bird; then we began to see curlews getting up in front, far out of gun-shot; these flew straight away, uttering their musical note. There were a good many gulls hovering over the water: I noticed several pairs of each of the common, blackheaded and kittiwake. A little way on, beside a pool, I saw a bird running along, which, as we came near, rose and flew round, sometimes settling about ten yards off: once or twice I nearly struck it with my fishing-rod. I believe it was the green sandpiper, the note resembling that of the common sandpiper, but was louder, and the bird twice as large. The legs were a dirty yellow-brown, the inside of the feet being light yellow. This bird had young close by. We saw it again next day, but about a week after it had left.\*

\* [The colour of the legs and feet proves that it was not the green sandpiper, but the wood sandpiper (*Totanus glareola*).—ED.]

We now got into the boat, and on pushing off from the shore many common ducks, teal and wigeon rose out of the reeds; they would be the male birds, as we saw several old ducks with young swimming after them, and two lots of wigeon, one of five and one of seven. After rowing across the lake I got out and fished up the bank. After going about one hundred yards I heard a sharp note, and on peeping amongst the rushes, about ten yards away, I saw a beautiful rednecked phalarope, the first one of the kind I had ever seen alive: he swam about on a small clear space amongst the rushes, nodding his head like a waterhen, piping all the time. I got into the boat to try and find the nest, or see if there were any young about; but when we got about twenty yards from him he rose up and flew out over the river; his flight was very much like that of the dunlin. Although we looked about very carefully we could not find either nest or young. We saw him again later in the day: he was in splendid plumage, the red on the neck being very bright.

The wind, which had been boisterous during the morning, now blew a gale, and the lake being very rough, we started for home. On our way we put up a bird which flew on to a stone near: it was a dunlin in its handsome summer plumage. A few steps further on we found two young ones, which were running about amongst the grass: very pretty little fellows they were, too, just getting into feather. After catching and examining them we put them down, and they were soon lost to sight in the long grass. During the day we also saw several herons and a flock of eight oystercatchers.

On the 28th, while fishing Loch Lydoch, we stopped at the island where the herons breed, to see the nests, and when we got about one hundred yards away, from fifteen to twenty birds flew out of the birch trees which cover it. On landing we found about thirty nests, but all the birds except four had left. The nests were built low: the young birds were standing up in the nests, but when we got hold of the trees and shook them they squatted down. After a good deal of shaking, however, the birds took to flight and flapped over the lake, apparently having some trouble to land on the shore, where they stalked about amongst the stones in a most awkward manner. We got hold of two younger ones; they were very fat, and cried out most piteously, and on throwing one back up to the nest, he just caught hold of the edge with his feet and

hung there for a few seconds; then, much to our astonishment, got hold with his bill and pulled himself into the nest. What an enormous quantity of fish these sixty old birds and about one hundred and eighty young ones would consume!

On rowing back up the lake we saw a large diver, but were too far off to see what kind it was. Near the top of the lake we saw a large bird sitting on a dead tree, and on my shouting and waving my hat it took wing: it was a magnificent osprey, the first I had ever seen alive in its native haunts: it flew steadily up the lake side till lost to sight. We also saw a very fine blackbacked gull, in full plumage, and lots of common sandpipers all along the lake side. On this day we caught two large trout, one weighing eight pounds and three-quarters and the other seven pounds and three-quarters.

There is every prospect of a good grouse season, the birds being healthy and strong on the wing and the packs large. Last winter was the most severe that has been known in Perthshire for thirty years, the deaths among the mountain sheep being very numerous.

J. WHITAKER.

Rainworth Lodge, near Mansfield.

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*Notes from Castle Eden.* By Mr. JOHN SCLATER.

(Continued from S. S. 4989).

JUNE, 1876.

*Cuckoo.*—Walking, on the 2nd, along the sea-beach I saw what I at first took for a kestrel hovering over the banks, but on its descending out of the glare of the sun it proved to be a cuckoo, accompanied by three meadow pipits, which flitted about, chiefly in front of her, as if leading her away from their nests; but this act of the pipits appeared to me to be of the greatest service to the cuckoo; and it was very curious to see how soon she took advantage of it, for as soon as they had escorted her to what they seemed to think a safe distance they turned back; but the cuckoo turned too, and was then led in a contrary direction, the whole distance being under three hundred yards. After flying in the same manner some ten or a dozen times in those contrary directions the cuckoo seemed to know that the object of her search lay within

this space, and she set to work to hunt it very carefully, alighting at each end of this distance every time she arrived at it, perching always in the same places—an old rotten branch that lay on the ground at one end, and on the top of a large grassy hillock at the other; and when so perched, which was only for a second or two, she had the most strange appearance, sitting nearly upright, and the feathers on the back of the neck and shoulders being puffed up to their fullest extent, giving her much the appearance of an owl. I imagined this might be done to frighten the pipits. Sometimes, very like the kestrel, the cuckoo hovered low over the grass and sometimes alighted amongst the roughest parts, walking, or rather tumbling, about in the most clumsy manner. It seemed easy to know when she was nearest the nests by the louder notes of the pipits, and I fancied I could have gone almost straight to them. I watched her for some time through a glass, and much regretted I could not stay until I had seen an end of the performance.

*Rooks.*—Having several times lately seen the rooks visiting a small plantation some distance from the rookery, and always going in a straight line between the two places, I went to try and learn the cause, and was not a little surprised to find a number of them at the carcass of a horse which had been shot and skinned there, and was intended for the dogs. I spoke to the keeper about it, and he told me that he had long been aware of the fact of these birds feeding their young on carrion when it “came handy.” As to the partial migration of this species, I have for years observed that they leave the rookery here regularly in the last week of August and roost on the trees around the house. They are at that time joined by the rooks from another rookery about two miles distant, and by numberless jackdaws. At that time all collect punctually at 8 P. M. and commence flying around the house: they are very noisy all the time, and there are always some whose voices, from some cause or other, have become peculiarly broken. They often, all at once, settle for a minute or two amongst the top branches of the trees, and then all will again rise in a body and wheel round the house as before: this is kept up until they go to roost. On a fine quiet night, by going out and making a smart noise,—striking a match, for instance,—one of them near you will commence a snoring noise, which is answered by some of the jackdaws: the snoring is kept up while you are anywhere near, and appears to be a sort of alarum, for I have found by going into



the house, and stealing to an open window which brought me nearer to the snorer, that it invariably ceased.

*Stock Dove.*—In my May notes I intended to have mentioned that on the 6th I found two nests of the stock dove only about seven inches from each other: each had eggs. The nests were only divided by a root, which passed in a slanting direction between them; but there was a hole through which the birds could easily have pecked each other.

JOHN SCLATER.

Castle Eden, Durham, July 20, 1876.

*Erratum.*—In my notes for May in the July number of the 'Zoologist' (S. S. 4987, line 26th), for morsel read Morel.—J. S.

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*Ornithological Notes from Norfolk.*

By H. STEVENSON, Esq., F.L.S.

(Continued from Zool. S. S. 4897.)

MARCH, 1876.

*Hooded Crows.*—First departure observed at Northrepps on the 4th. A good many seen on Breydon on the 31st.

*Blackheaded Gulls.*—Large flocks observed, at Northrepps, passing inland, on the 14th.

*Rooks Migrating.*—A flock observed at Northrepps on the 31st, apparently departing by sea. See note, in the 'Zoologist' for February (S. S. 4776), on the large increase of rooks, supposed by migratory arrivals, on the same part of the coast, in November last.

*Puffin.*—An immature bird picked up, inland, at Cawston, about the middle of the month, and another on the coast on the 29th.

APRIL.

*Summer Migrants.*—The following species were first heard or seen at Northrepps by the sea, and at Keswick and other inland localities, on the dates following:—

Chiffchaff. Northrepps, April 3rd.

Wryneck. Keswick, April 6th; Aylsham, 10th.

Blackcap. Northrepps, April 8th.

Redstart. Keswick and Aylsham, April 11th.

Sand Martin. Cromer, April 20th; Keswick, 28th.

Cuckoo. Northrepps, April 21st; Stratton Strawless, 20th.

Swallow. Keswick, April 24th.

House Martin. A single bird seen at Northrepps on the 21st, but the bulk of the usual summer residents in that locality did not appear till just a month later—the 21st or 22nd of May. Some martins seen at Trowse, near Norwich, on the 13th of April, in a snow-storm.

Willow Warbler. Northrepps, April 23rd.

Nightingale. Heard at Keswick, April 16th; Norwich, 18th; Marsham, 22nd; Northrepps, 25th.

*Woodcock*.—A good many observed in the West Norfolk coverts at the beginning of this month, which would probably remain to breed. One seen at Northrepps on the 23rd.

*Nocturnal Migrants*.—At 8.30 P. M. on the 16th, night fine but very dark, and wind S.S.E., heard birds whistling overhead, the notes of the curlew most plainly distinguishable.

*Osprey*.—A single bird trapped at Hempstead ponds, near Holt, on the 20th.

*Hobby*.—One seen at Northrepps on the 25th.

*Spoonbill*.—A flock of eight were seen at Horsey, near Yarmouth, on the 13th, of which some five or six, at least, were shot subsequently in that neighbourhood.

## MAY.

*Summer Migrants*.—Ring Ouzel. A single bird seen at Northrepps on the 1st.

Nightjar. Seen at Northrepps on the 3rd.

Turtle Dove. At Northrepps on the 4th.

Greater Whitethroat. At Northrepps on the 7th.

Garden Warbler. At Northrepps on the 16th.

Spotted Flycatcher. At Northrepps on the 17th.

Swift. At Cromer and Northrepps on the 20th.

*Hooded Crow*.—On the 5th I saw a single bird in a field at Gunton, near Lowestoft, where stragglers have been observed, at times, throughout the summer months. One was seen about the same time, near Cromer, feeding with some rooks.

*Late Fieldfares*.—One seen at Guist on the 3rd, and one at Foulsham on the 4th, both of which uttered their winter note.

*Great Crested Grebe*.—A pair of these birds have nested for the last three years at Gunton Lake, near Cromer, and have averaged

about three young ones each season. The eggs were hard sat on by about the 29th of April this year, and the old birds are said to arrive almost to a day in March and leave as punctually in September. One young one last year got entangled in a bow-net, but was fortunately rescued in time.

*Gunton Heronry.*—This thriving colony continues to increase, at least forty birds having been counted at their nesting haunt at the beginning of this season.

*Great Spotted Woodpecker.*—A single bird seen at Northrepps on the 28th.

*Little Owl.*—A very small owl, supposed to be *Carine noctua*, which had been seen at Northrepps on the 18th of May, was again observed near the same spot on the 16th of June.

*Hooded Crow.*—One seen at Northrepps on the 22nd.

*Pochards and Tufted Ducks nesting in Norfolk.*—I last year recorded (Zool. S. S. 4634) that I had seen, on one of our Norfolk Meres, three pairs of tufted ducks in the first week of June, and that from the actions of one hen bird I strongly suspected her nest, or a young brood, was not far off. This season I have pleasure in announcing that the nesting of the tufted duck in this favoured locality is an ascertained fact, a female having been flushed from her nest of six eggs on the 29th of May, two females and four males of this species being seen. At the same time and place, also, several pochards were found breeding, two females having broods of young ones, and one a nest of six eggs.

*Silt Plover.*—Since I recorded, last year, the occurrence of two specimens of this rare wader in Norfolk,—one at Ingham on the 26th of May and one at Ditchingham about the end of July,—I have ascertained that a bird of this species, either a third example or possibly the same subsequently shot at Ditchingham, was observed on several occasions, in June, in the Hellesdon meadows, about two miles from Norwich. Mr. John Henry Walter, who resides at Hellesden, informs me that he first saw the bird on the 6th of June, and described it in his note-book at the time as having “long red legs, white body, and black pointed wings, about the size of a plover. It flew like a heron, with its legs out behind it.” Altogether he saw it about half-a-dozen times, always about the same locality, and could have shot it easily as it flew close to his boat, or when feeding on the land.

*Sand Martins nesting in Sawdust-heaps.*—Travellers by the Cambridge line of the Great Eastern Railway will have observed for many years past large quantities of sawn fir timber closely adjoining the Brandon station, and which, with the addition of huge stacks of sawdust piled up on the spot, give evidence of a busy trade. In these stacks of wood-fibre, firmly compressed and consolidated by the action of the weather, sand martins have of late discovered a novel, and I believe hitherto unrecorded, nesting-place. I was first informed of this curious fact by Mr. E. Bidwell in the summer of last year, and an ornithological friend residing in the neighbourhood confirms the same from his own observations this season, having found the sand martins, in considerable numbers, boring into the firm but easily-worked strata of these wooden cliffs.

*The Polish Swans (?) at Northrepps.*—Like Mr. Southwell (Zool. S. S. 5084) I must own that my previous impression that Yarrell's so-called Polish swan is a good species has been greatly strengthened by an examination of a white cygnet, one of a brood hatched this summer at Northrepps by the pair of birds formerly in the Zoological Gardens. This cygnet differs essentially in colour from any mute swan cygnet I ever saw, for an albino cygnet of the mute swan is utterly unknown on the Yare, where such large numbers of the common swan are reared yearly for edible purposes. I cannot agree with Mr. J. H. Gurney, jun. (S. S. 5047) that the occurrence, as asserted, of mixed broods of white and gray cygnets militates against the specific difference of *Cygnus immutabilis*, as it is quite possible that in the case he cites from the 'Field' of July 8th, 1871 (which had escaped my notice previously), in which two of a brood of cygnets, bred on a lake in South Wales in 1870, were white, and also one out of six, in the season of 1871, were the offspring of mixed parentage, one of the old birds being—probably unknown to the owner—a Polish swan, or descended from a true-bred bird of that race or species. The same was no doubt the case with Dr. Westerman's cygnets.

HENRY STEVENSON.

Norwich, September 12, 1876.

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*Ornithological Notes from Devon and Cornwall.*

By J. GATCOMBE, Esq.

(Continued from S. S. 5030).

## JULY AND AUGUST, 1876.

July 8. At Wembury I was glad to observe two or three peregrines dashing about in the vicinity. These beautiful birds have now become very scarce on most parts of the coast.

July 12. Saw and heard a redshank, flying rather high, on its way up the River Tamar, having no doubt just returned from some breeding station. I do not remember having observed this species so early in autumn in our neighbourhood before. I may here mention that I have detected a few notes almost exactly resembling those of the common redshank in the song of a thrush.

July 13. Took a trip to Fowey, on the Cornish coast, passing several nesting-places of the herring gull, and observed several very young birds swimming by the side of their parents on the smooth water close under the lofty cliffs. No other species of gull seemed to be breeding on any part of this coast.

August 10. Many ring dotterels and some whimbrels were seen to-day on the Breakwater, and numbers of curlews on the banks of the Tamar. Waders generally seem to have returned from their breeding-places very early this season; and I find swallows already congregating on the telegraph-wires soon after daylight.

August 18. Went up the River Tamar, and found that a few blackheaded gulls had returned from their nesting quarters, and many common sandpipers from the moorland streams. Curlews, too, were numerous on the mud-banks.

August 22. Whimbrels and other waders were making a great noise, flying over the town about ten at night; and on the 23rd I observed flocks of the yellow, or Ray's, wagtail in fields near the sea. A great many young sanderlings, knots and turnstones have been brought to our birdstuffers within the last few days, and among some dunlins I have detected a few of the very small variety or race answering to the *Tringa Schinzi* of Brehm, one of which was an adult, in full breeding dress, with a fine black breast, and really not much larger than the little stint. I have also examined some beautiful old turnstones.

I had almost omitted to mention that several storm petrels, seemingly in an exhausted state, were captured in Plymouth Sound on the 16th of August. The weather was fine, with a nice breeze, but the day after, it blew a gale from the east, accompanied by a tremendous thunder-storm.

JOHN GATCOMBE.

8, Lower Durnford Street, Stonehouse, Plymouth.

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*Fish Culture for the Thames.* By JOHN T. CARRINGTON.

ACCOMPANIED by my friends Mr. W. A. Lloyd and Mr. E. Howard Birchall, I recently visited, by invitation, the fish-breeding establishment of Mr. James Forbes, of Chertsey Bridge, on the Upper Thames. Mr. Forbes' fish-house is a large well-built glass and brick edifice standing in the immediate rear of his house: it is quite new, and built entirely for the purpose to which it is devoted, having replaced an older structure, a greenhouse, which Mr. Forbes formerly used for his experiments: these were so successful that the operations were extended.

Before commencing my description of Mr. Forbes' establishment, it should be understood that all he has done is from an entirely patriotic and disinterested feeling: he is a keen sportsman and an ardent angler, and the whole of the fish thus reared at a great outlay of time and of several thousands of pounds in money will, as soon as the fish are able to take care of themselves, be turned into the Thames, there to grow and delight the heart of many a fisherman. The saloon in which the operations are conducted is thirty-four feet in length and proportionately broad. On the right, on entering, is a brick wall; the front of the building, which has a north-west aspect, and the ends, being of glass. The first series of tanks are the ordinary step-shaped hatching troughs: in this series, with several additional tanks, Mr. Forbes hatches out from sixty thousand up to a hundred thousand ova each season. In connection with these is a further series of six tanks, each three feet long by one foot eight inches wide, and two feet deep, for receiving the young fish. The sides and ends of these tanks are of glass, so that all the operations of feeding may be readily observed. Besides these are several larger tanks, used for various purposes, but chiefly to contain parent fish or some of large growth which have been reared by Mr. Forbes from ova. Lastly, in this room, is a useful

shallow tank, about eight feet by five feet nine inches, and nine inches deep. Fitted in the middle of this tank are two ornamental fountains, which are adaptations of Barker's Mill: these thoroughly aërate the water supplied, by tossing it in the form of spray through the air and distributing it over the surface of the water in the tank. The bottom is covered with clean shingle: over this may be seen large numbers of young fry hatched out late this season.

The fish-fry, after going through a careful course of feeding in these nursery tanks until they become about two inches in length, are drafted off to the rearing pond at Sunbury, which is now under Mr. Forbes' care, and where at the present time are upwards of 20,000 young fish of this season's hatching. These are thriving so rapidly that they will at the end of two years be in condition to start on the business of life on their own account in the rippling waters of the Upper Thames and its tributaries.

The system of water supply and aëration of the tanks in the Fish Saloon at Chertsey Bridge is original and ingenious, but not without some defects, which may, and I believe will, soon be remedied. The machinery and many of the appliances are the adaptation of ideas suggested and carried out by a neighbouring firm of engineers, Messrs. Charles and James Taylor, of Chertsey. Though somewhat different to what would have been arranged by one experienced in aquarium construction, they are very creditable, and to some extent effective. The water is lifted by means of a pump, worked by a small steam engine, of two horse-power, from a well to a height of twenty-four feet, into a reservoir containing about five thousand gallons placed upon the roof of the building. In addition to this is a second or reserve engine of one horse-power, nominal, but in both these engines the power may be considerably increased—it is said to ten horse-power; but I cannot help thinking this must be an error. This quantity of water (5000 gallons) serves the whole system for a period of twenty-four hours, when the upper reservoir is again recharged. On leaving this reservoir the water descends directly into each tank, from whence it flows directly away into two outer reserve tanks in the garden, and thence to the river. One of these tanks is thirty-six feet long, five feet broad and two feet deep, the other ten feet by five feet and a half, and two feet deep. On its way from the tanks the water is caught by an ingenious bucket arrangement, automatic in its working, which drives two pairs of ordinary kitchen bellows: these force air into

the breeding-tanks by frequent but fitful supplies. Here is a great loss of power, for if the water which serves each tank were injected by means of a small jet placed over the water in the tank, the effect would be to cause a constant and superabundant supply of air; whereas, by the present arrangement, the supply is sudden and explosive-like, and at intervals of from twenty seconds to half a minute. This sudden disturbance of the whole body of water must always be unsatisfactory, and is certainly contrary to anything in nature. Again, there is a further loss of power by allowing the water to enter into and leave each tank directly; whereas, if all had been connected and it had flowed from one to another, a much less reservoir would have served, or the present one would have supplied for a proportionately longer period.

Mr. Forbes proposes to add to his already extensive fresh-water aquarium and hatching tanks several sea-water tanks for experimental purposes. In the erection of these he has obtained the advice and assistance of Mr. Lloyd, of the Crystal Palace Aquarium. These tanks will be upon the circulatory system discovered by Mr. Lloyd, so that one, and the first, supply of sea-water will be sufficient.

The fish now being reared at Chertsey Bridge are the common trout (*Salmo fario*), the great lake trout (*Salmo ferax*), golden tench (*Tinca vulgaris*), and a large number of beautiful specimens, of several ages, of the American brook trout (*Salmo fontinalis*). Of this last-named truly handsome fish Mr. Forbes has many fine examples, reared by Mr. Capel and Mr. Edon: we observed some about half a pound in weight and others were a year and half old. One very striking character in rearing *Salmo fontinalis* is the remarkable difference in the growth of individuals in a single brood of "fry" from the same batch of ova: some grow at great speed and outstrip their brethren in a short space of time, while the majority are probably two-thirds less than these in size at the end of the first few months. I cannot help thinking that, owing to Mr. Forbes' efforts, this fish will soon obtain permanent hold in the Thames, and whenever a fine eight-pounder is taken, "may we be there to see."

Mr. Forbes is a naturalist as well as a sportsman; and, after lunch, he conducted us to see his really fine collection of stuffed British birds: this contains not only rare species, many of which were shot in the neighbourhood, but every specimen has been



chosen for its state of plumage and condition of preservation. In the grounds are a number of aviaries, arranged much after the style of those in the Zoological Gardens, Regent's Park, in which are many species of the genus *Phasianus*; but best of all is the duck-pond, upon which we counted no less than twenty-eight species of swans, geese and ducks, amongst them being the very rare Peruvian swan, with its black head and neck in such striking contrast to its white body.

We left Chertsey Bridge, at the end of a day spent after our own hearts, wishing there were more such men as Mr. Forbes, who spares neither time nor money where he can further the ends of pisciculture.

JOHN T. CARRINGTON.

Crystal Palace Aquarium,  
September 19, 1876.

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**Dr. Buller on the Fauna and Flora of New Zealand.**—At the last General Meeting of the Wellington (N. Z.) Philosophical Society, the new President (Dr. Buller), on taking the chair, delivered a short address, in which he compared the present state of knowledge regarding the fauna and flora of New Zealand with what it was at the date of the formation of this Society. He said:—"At the time to which I refer, the scientific literature of the colony consisted of Dr. Hooker's 'New-Zealand Flora,' Dr. Mantell's chapters on New Zealand in his 'Fossils of the British Museum,' the 'Zoology of the Voyage of the Erebus and Terror,' Dr. Dieffenbach's two volumes of 'Travels' (which contained much information on Geology and some valuable Natural-History appendices), Professor Owen's early memoirs on *Dinornis* and its allies in the 'Transactions' of the Zoological Society of London, besides a few minor works and scattered papers in the 'Proceedings' of various learned bodies. With the exception of the Botany, which had been explored at a very early date by Banks, Solander, Sparmann, and the two Forsters, and had afterwards been exhaustively treated by the accomplished Director of Kew, no department of New-Zealand Biology had been, in any sense, properly worked. The lists of the fauna appended to Dieffenbach's 'Travels,' although useful to students in the colony as a basis to work upon, were enumerations of such species only as were known to science, and were confessedly imperfect. In every section of Zoology the number of recorded species has been considerably increased. For example, the whales and dolphins positively mentioned by that author as inhabiting the New-Zealand seas were only 4; the number has since been increased to 21, and new species are being continually added. Of the 84 species of birds enumerated, no less than 17 were of doubtful authority; the number of well-

ascertained species has now reached 155, and of most of them the life-history has been exhaustively written. The 6 lizards have since increased to 14, not including one or two doubtful species. The list of fishes was then 92; it now comprehends 163 species, and fresh discoveries are being constantly made. Although the list of Mollusca even then included 240 species, the number has now increased to 502; the Radiata and Crustacea have been largely multiplied, while the list of insects has increased to nearly a thousand recorded forms. In Botany large and important additions have been made in every section, chiefly through the zeal of local collectors in both islands. Dr. Hooker's 'Handbook of the New-Zealand Flora,' published in 1864, enumerates 935 species of flowering plants, to say nothing of the immense variety of ferns and lycopods, mosses and jungermannias, lichens, fungi, and sea-weeds. The pages of our 'Transactions' contain many subsequent additions by Kirk, Buchanan, Travers and other local botanists. Of the Physical Geography and Geology of the country comparatively little was at that time known, while a great part of the interior was a *terra incognita*. Even the Southern Alps had not been explored, and nothing was known of those glaciers since discovered by Dr. Haast, which are said to surpass in magnitude and grandeur the well-known glaciers of the European Alps. In the field of Palæontology, however, even before that date, some important discoveries had been made. Mr. Mantell, the first scientific explorer of the moabeds of Waikouaiti and Waingongoro, had forwarded to Europe a magnificent collection of fossil remains, which, after 'exciting the delight of the natural philosopher and the astonishment of the multitude,' found a fitting resting-place in the galleries of the British Museum, and were, in due course, minutely described by Professor Owen in several elaborate memoirs read before the Zoological Society of London. Later years have yielded, in the South Island, fresh treasures to an almost unlimited extent; and the group of colossal moaskeletons brought together through the energy of Dr. Haast, and now to be seen in the Canterbury Museum, is, I think, one of the most striking and interesting exhibitions on this side of the Line. The principal recent discoveries are:—the wonderful saurians, from the Waipara beds and elsewhere, so fully described in last year's volume of 'Transactions'; the gigantic bird of prey, *Harpagornis Moorei*, from the tertiary deposits at Glenmark; the great wingless goose, *Cnemioornis calcitrans*, from Otago; and the giant fossil penguin from the tertiary rocks on the west coast of Nelson—all of which have been exhaustively dealt with in papers read before the various local societies and published by the Institute."

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**Wild Cats: period of Gestation** (Zool. S. S. 5038).—I am sorry I cannot give further satisfactory information regarding the wild cats (S. S. 4825), which Mr. Alfred Heneage Cocks asks for. I applied to the owner, who still

possesses the two animals, in Glasgow, and he told me that "nothing came of it," contrary to the expectations at one time entertained: the female would not receive the advances of the male.—*J. A. Harvie Brown; Dunipace House, Larbert, N. B.*

**Bats hawking for Flies at Noonday.**—On Sunday, the 13th of August,—almost the hottest day we had,—two bats continued hawking for flies, during divine service, between the hours of eleven and twelve.—*C. Matthew Prior; The Avenue, Bedford.*

[The circumstance is not so unusual as our correspondent seems to suppose. Numerous instances of bats flying by day have been recorded from time to time.—ED.]

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**The Exeter Albert Memorial Museum.**—When in Exeter the other day I visited (as I always do when I find myself in the capital of Devon) the excellent Albert Memorial Museum, and found—what I always find—great progress and improvement. I have never yet had the pleasure of seeing the Norwich Museum, with its rich collection of raptorial birds, but I should say neither the Norwich Museum nor any other provincial institution of the kind can be better than that at Exeter. Too great praise cannot be awarded to the indefatigable Curator and Secretary, Mr. D'Urban, for what he has done with the money and the materials placed at his disposal. The Museum seems to be popular with the townspeople, as it well may, and on a market-day it is so crowded that it is difficult to move about. I was pleased to see that Mr. D'Urban is getting together a collection of local birds. Unless local Museums confine themselves to the local Fauna they are only the source of confusion; but they are of great value and of immense assistance to a naturalist studying a district, when they receive only specimens obtained within its limits. An *omnium gatherum* collection of birds and animals, some British, some foreign, is of use perhaps for the unscientific to gape at, but it vexes the eyes of those who would prefer to see what the neighbourhood can produce. Let the local birds, &c., be kept apart; and then (as is done at Exeter) let characteristic types of foreign birds be ranged, for the information of those who would wish to see how the Fauna of other countries differs from their own. Let me beg any reader of the 'Zoologist' who finds himself with a spare hour at Exeter to visit the Museum: he will be well repaid.—*Murray A. Mathew; Bishop's Lydeard.*

**The Time of Day at which Birds lay their Eggs.**—Mr. Cordeaux (Zool. S. S. 4983) asks, "Can any one tell me at what time during the twenty-four hours the egg is deposited by birds?" Quoting Dr. Saxby, he says, "Careful observation of twenty different species of our insessorial birds has enabled me to ascertain the fact that, as a general rule, they lay their eggs between

the hours of 7 and 12 P.M." I have had some experience in collecting birds' eggs, and though I cannot say that I have given much attention to the time when the egg is laid, still I am decidedly of opinion that birds lay their eggs, as a rule, about eight o'clock in the morning. Could Dr. Saxby have meant A.M. instead of P.M.?—*F. Boyes; Beverley.*

**Sea Birds at Bridlington.**—The following birds have been shot within the last week or two at Bridlington:—Six Manx shearwaters (all old birds), and many more seen. Several Richardson's skuas, in four stages of plumage; many more seen. One great shearwater (young bird), and another or two seen. One cormorant, and two or three others seen. Half a dozen or more gannets, all immature but one; they are common on this coast in the herring season, when some fine old birds are generally procured. Other birds were shot, chiefly kittiwakes, herring gulls, common gulls, arctic terns, &c. The above list only includes birds shot by personal friends or self, and no doubt many more have been secured by others.—*Id.*

**Spotted Flycatcher returning Annually to the same Nest.**—In the 'Zoologist' for July (S. S. 5001) Mr. Prior mentions a spotted flycatcher returning annually to the same nest for four successive years. I remember my brother telling me of a certain person in this neighbourhood asking him if he had ever looked into the hole of an elm tree, about nine feet from the ground growing beside a stream which runs near the village, as there used to be a nest built there every year when he used to go birdsnesting. My brother went, and found to his surprise a spotted flycatcher's nest. The bird continued to build in the same hole for about four years after he found it, when it forsook the place, owing to my breaking an egg, and, being young, I left it in the nest. It must have built there for at least twenty years. So far as my own personal observations go (and they have been somewhat extensive), in no instance have I known this bird build its nest again in the same place after it has once been rudely disturbed,—not to say had its nest taken,—especially when it had young; but such a *penchant* has it for certain localities, that if it has its nest taken it almost invariably builds again in the vicinity. In this respect it is very similar to its congener the pied flycatcher, and, although differing very materially both in its structure and habits, I may add, to that most beautiful bird with its "proud pied form," which is fast becoming extinct,—I mean the magpie,—which from the time of Gilbert White to the present has been noted, however much it might be molested, for its intense attachment to its favourite breeding haunts.—*E. P. P. Butterfield; Wilsden, near Bradford, August 22, 1876.*

**Redstarts and Blue Tits nesting in Human Skulls.**—Having visited the supposed Saxon burial-place in Mr. Gibson's garden at Saffron Walden, whilst the skeletons were exposed to view, in July last, I can confirm Mr. Travis's statement (Zool. S. S. 5042) as to a redstart having made its

nest and hatched its young in one of the skulls, gaining access to the interior through one of the orbits. A somewhat similar incident was lately communicated to me by the Rev. W. Blyth, of Fincham, near Downham, in Norfolk, respecting the common blue tit, but under still more ghastly circumstances. "Early in the present century," he writes, "say 1804 or 1805, a man named Bennett was tried at Thetford, executed and gibbeted in a certain lane at Wereham, for the murder of his master, one John Filby. In 1809 or 1810, John Complin, of this parish, now aged seventy-five, had the bold curiosity to climb the gibbet and examine the skeleton. On reaching the head there flew out first an old blue tit and after her the terrified little family of nine or ten; one only remained, and was secured by the venturesome explorer."—*H. Stevenson; Norwich, Sept. 12, 1876.*

**On the Colour of the Fauces of Nestling Warblers.**—Allow me to point out that the writer of a note in your last number (Zool. S. S. 5080) has, unintentionally, I am sure, misrepresented me in doing me the honour of referring to a former remark of mine (Zool. S. S. 3527). I never said, on the authority of Signor Bettoni—Beltoni is a misprint with which I, of course, do not credit your correspondent—or of anybody else, that "the fauces of the nestling blackcap are pink." What I did say your readers, by turning to the page cited, can easily see for themselves, and therefore I need not ask you to occupy your space by reprinting the passage.—*Alfred Newton; September 1, 1876.*

**Note on Warblers.**—Perhaps there is not a class of birds which are greater favourites with ornithologists than the numerous and interesting group of warblers. Unknown as many of them are, to the general public, from the retired habits of the various species, and rare as some others are, even to those who care to search for them, any little incident in their economy seems worthy of notice. There are few readers of the 'Zoologist,' I imagine, but are acquainted with one or more species of these tiny summer-loving birds, and delight to watch their movements or hear their peculiar notes. A short time since a gentleman, who is more of a general naturalist than an ornithologist, asked me if I had ever heard the nightingale utter a "low murmuring sound" when any person passed near its retreat? This question recalled to my memory that some few seasons ago I found a nightingale's nest amongst some brambles at the bottom of a hedge, and often when I went near the spot I heard some such sound as the one described, but whether it came from the nightingale, male or female, I am not prepared to say, as the nest was in a very secure retreat, and could not be seen without pulling aside the brambles, and I had no wish to disturb the domestic happiness of the lovely songster, although some one less sympathetic destroyed the nest, as I found it, on a subsequent visit, torn to pieces. If the nightingale does utter this sound, it seems to be more of a warning note than anything else. It is well known that the

garden warbler utters a low, guttural note, especially when—in the wane of summer—it is searching among the bean-sticks for insects or discussing a fat larva of the common cabbage butterfly; and I am not sure that—with its near relative, the whitethroat—it does not give vent to the same sort of murmur when searching amongst the gooseberry and currant bushes, or amongst the fallen fruit beneath them. I could never satisfy myself whether one or both species produced the sound, but in any case it seems to have been an inward note of satisfaction and complacency, rather than one of fear or alarm. This “murmuring” will doubtless be understood as in no way connected with the song of the birds. I should like to know whether any other of the warblers are in the habit of producing this sound, and whether it is a well-known trait in the three I have named. The scanty ornithological literature to which I have access is silent on the subject.—*G. B. Corbin; Ringwood, Hants.*

*Erratum.*—In my note on the song thrush (S. S. 5003), *for* singing music *read* ringing music.—*G. B. C.*

**Distinguishing Characters of the Aquatic and Sedge Warblers.**—Last October I saw an undoubted aquatic warbler at Cliffe, in Kent, which I duly recorded in the ‘Zoologist’ (S. S. 4693). Though I confess that in commencing the study of Ornithology I have made several rather serious mistakes of identification, I think there is no reasonable doubt here. I am surprised to have heard it said that the aquatic warbler and the sedge warbler are very like each other and difficult to distinguish. Undoubtedly there is a certain similarity in the distribution of the markings: each species has a whitish eye-streak surmounted by a dark band, and each species has the ground colour of the upper plumage more or less marked with dark striations. There the resemblance ends, and we may first note a radical difference in the colouring of the crown of the head, that part being very light-coloured in the aquatic warbler, but in the sedge warbler olive-brown with darker markings. But it is very misleading to speak, as so many do, as if this were the only great difference between the two birds. I have referred to a similarity between the styles of marking, but at how great a distance can this be detected? Seen with the naked eye at a very little distance the sedge warbler seems to be of a uniform olive on the upper surface, barring the tawny rump, the dark striations being far too faint to be visible. Even the tawny red of the rump blends so harmoniously with the olive of the back that it wants a young pair of eyes to detect the difference. An excellent ornithologist said to me one day in Lincolnshire, “What are those birds that look to me like willow wrens? Your eyes are younger than mine.” The birds were sedge warblers, and I have elsewhere noticed the same superficial likeness between this bird and the willow wren group. But when we look at the aquatic warbler we find a broad and distinct blackish band on each side of the head, and the dark markings of

the back as distinct as those of a bunting. These characteristics are plainly visible at a moderately near view of the living bird, except of course when on the wing, the flight being rapid. In breeding plumage, judging by Gould's plates, the ground colour of the upper surface comes nearer to that of the sedge warbler than it does in autumn; but the aquatic warbler seems to be grayer on the back and yellower on the rump—colours which I should think would not blend so well to the eye as the olive and tawny of the sedge warbler; but in autumn plumage the merest "yokel" ought to see the difference. The aquatic warbler becomes of a yellow russet (*un jaune roux*, Schlegel) on the upper surface, the colour of the back approximating to that of the rump. Dr. Bree very properly notices this state of plumage; but why the silence, and the very misleading silence, on this point, of our other English authorities? Seen, as I saw it, flitting up and down a reedy ditch on the Thames marshes, this yellowish red bird is a most striking object, suggesting by its colour the bearded tit and the rufous warbler (*Ædon galactodes*) more than anything else. In its habits, as noticed by Dr. Bree, it is very mouse-like, creeping in and out among the bottoms of the reeds, as I never saw any sedge warbler do. I must ask you and your readers to pardon this prolixity; but I have written thus much in the belief that Ornithology is much impeded by misleading representations as to the difficulty of distinguishing (for non-scientific observers) species which superficially are very distinct.—*Clifton; Cobham Hall, September 4, 1876.*

**Blackcap in Ireland.**—Some of your readers may be interested in hearing that a young blackcap was shot, on the 30th of June, by a young friend of mine, at Rathgar, near Dublin. Two were in company at the time, and they must have been reared in the neighbourhood. I have not heard that the blackcap has been observed anywhere else in Ireland during the present year. My friend had been on the look out for the species for a considerable time.—*Charles W. Benson.*

[In Ireland, although a local species, the blackcap is a regular summer migrant in the county of Dublin, and has been observed in Antrim, Wicklow, Waterford, Cork, Tipperary and Galway.—ED.]

**Whitethroat's Nest at an unusual Elevation.**—The other day Mr. Swaysland, naturalist, of Brighton, had the goodness to take me to his garden, on the outskirts of the town, to see a common whitethroat's nest in an elder bush, at the unusual elevation of sixteen feet. Mr. Swaysland informs me that on some days his garden is quite an interesting ornithological sight. Hundreds of tree sparrows may be observed (in flocks), passing over on passage, and huge flights of wagtails; and at other times great squads of redwings from the north, passing on, with strength unabated, to southern climes. He has constructed a small pond, and a very clever net by which to entrap thirsty birds who come there to drink. Only the other day he caught a pretty pied flycatcher, which he showed me just mounted; and

last Bank-holiday he and his son took sixteen garden warblers, besides no end of other birds. The net covers the whole of the piece of water, and I should judge it to be, when shut, about six yards long and four feet across. It is the most ingenious contrivance I ever saw. I hear a glossy ibis has just been taken in Sussex, but I have not seen it.—*J. H. Gurney, jun.; Hotel de St. Antoine, Antwerp.*

**Pied Wagtail building in a Thrush's Nest.**—Mr. J. H. Gurney, jun., mentions (*Zool. S. S.* 5003) an instance of a pied wagtail using a blackbird's nest as the foundation for its own. A similar case came under my notice in May, 1874, where Mr. Purdy, of Woodgate House, Aylsham, showed me a pied wagtail sitting on her nest, in a tall laurel-bush, which she had constructed in the hollow of a deserted song thrush's nest. About a fortnight later, however, the young of the wagtail were found dead on the ground, and the wagtail's superstructure having been pulled to pieces, the original nest was restored and four thrush's eggs laid in it; all, no doubt, the act of the original owner, who, disturbed in the first instance, had returned to take possession of her lawful property.—*H. Stevenson; Norwich, July 12, 1876.*

**Greenfinch nesting in a Furze-bush.**—On looking over an old note-book in which I used to enter circumstances which seemed to me to be of uncommon occurrence, I find the following under date of June 19, 1875:—“To-day I found, in a furze-bush, a greenfinch's nest containing five eggs. This is the only time I ever observed this bird nesting in furze—the most favourite situation for the common linnet.”—*C. Matthew Prior.*

**White Starling in Nottinghamshire.**—Will some one kindly inform me if white specimens of starlings are of more frequent occurrence than any other kind of bird? Within the last six months I have recorded two instances in the ‘*Zoologist*,’ and I saw another a few days ago in Nottinghamshire, which I endeavoured to obtain, but it never let me approach within gunshot.—*Id.*

[The starling appears to be more subject to albinism than most birds. Not a year elapses in which we do not receive numerous notices of the occurrence of such varieties.—*Ed.*]

**Rosecoloured Pastor in the Isle of Wight.**—Mr. Smith, the Newport taxidermist, informs me that a handsome male of this species, in perfect plumage, was shot at Mill Hill, West Cowes, on the 31st of July, when in company of starlings. This is, I believe, its first occurrence on the island. *H. Hadfield; Ventnor, Isle of Wight, August 17, 1876.*

**Rosecoloured Pastor in Hampshire.**—It is a pleasure to be able to record the occurrence of a female of this rare species at Wood-green, on the borders of the forest, near Fordingbridge. I have not seen the bird, but my friend Mr. H. W. Aubrey, of the Rectory, Hale, who is now having it preserved, has kindly sent me the following note:—“It was shot by Mr. Hinxman's gardener, and was apparently feeding on cherries when



first observed. It was killed about the middle of July." We are informed, in Wise's 'New Forest,' that a fine male of this species was killed some thirty years ago at Purewell, Christchurch, by a brother of Hart, the bird-stuffer there, so that this specimen was undoubtedly preserved.—*G. B. Corbin.*

**Lining of the Crow's Nest.**—With one exception, all the crows' nests I have examined have been lined with wool. I once came across one without any wool in whatever, but in its place was a quantity of dried flags, which it had obtained from the River Ouse close by.—*C. Matthew Prior.*

**Hooded Crow nesting in East Yorkshire.**—I am informed that the hooded crow has nested in the Flamborough cliffs this season, and that five or six of them were seen on the 15th of August last. A "hoodie" was killed a short time ago by the gamekeeper at Kilham, a village some twelve miles north of Beverley, but I have no particulars, except that the gentleman who has the shooting told me he saw the bird a week or two ago, and it was freshly killed.—*F. Boyes.*

**Jackdaws nesting in Modern Gables.**—The jackdaw is so associated in one's mind with ecclesiastical edifices, ruined castles, and monastic buildings, or the scarcely less venerable trees that surround ancestral houses, that one seems to regard almost as a degenerate race such birds as content themselves, for nesting purposes, with the chance inlets of more modern structures. During the last two or three seasons I have watched with some interest the gradual increase in a colony of jackdaws, which, having turned out the first tenants—the starlings—have, to the number of five or six pairs, established themselves in the roofs of the Esplanade houses at Lowestoft, on the Suffolk coast. These being situated close to the beach, the birds have taken care to select the west side, facing inland, and find a safe and snug retreat for themselves and young in openings between the wood- and brick-work in the angles of the ornamental gables. Staying at Lowestoft this year at the beginning of April, I was able to watch their proceedings, day by day; and as the weather at the time was anything but spring-like, the progress of nest-building was unusually prolonged, and consequently the raids made upon each other's stores of nesting materials afforded constant amusement. For more than a fortnight they were thus employed, working only at intervals during the day, and some days, apparently by common consent, taking an "outing" in the fields "from morn till dewy eve"; but occasionally, on these "excursion days," a sly customer would return to its haunt, and, after a cautious survey, dive suddenly into the entrance of a neighbour's nest-hole, where, securing certain coveted sticks, it coolly conveyed them to its own. Once or twice, however, I saw the thief caught in the act, by the sudden return of the lawful owner, or "Jack" proved after all to be "at home," though not seen at first in the dark recesses of the gable openings, and then

a battle royal ensued, and, after the manner of stage-plays, always ended in the discomfiture of the villain of the piece. On cold days—and there was an unpleasant prevalence of N.E. winds at the time—it was funny to see how these birds would seek out the most sunny parts of the roof for their afternoon *siesta*, carefully placing themselves under the lee of the chimney-pots and nestling close to each other for increased warmth. The sticks for their nests were chiefly broken off the branches of trees and shrubs in the gardens below, though occasionally good-sized ones were brought from a distance, as also were masses of grass or fibrous stuff of some kind, as it appeared through my telescope, and a considerable amount of deal-shavings, gathered close by where carpentering work was going on. The chief novelty, however, was to watch them, even at midday, alight in the roadway before the houses, a busy thoroughfare, and carry off the freshly-dropped horse-dung in large masses to their nests; but whether used partly by way of lining, or, with a strange instinct, to plaster up some draughty crevices in their lofty nurseries, I am quite unable to say.—*H. Stevenson; Norwich, September 12, 1876.*

**Wood Wren and Greenshank in Sutherland.**—While staying at Helmsdale, last May, I found the wood wren singing at Kildonan, which is about ten miles up the Helmsdale River. I am well acquainted with its peculiar tremulous note, the bird being very abundant here (at Cobham). This is the furthest northern locality in our islands that the wood wren has yet been recorded from. I heard one this summer close to the high road at Chislehurst, where I should hardly have expected to find one. I saw nothing else very rare at Helmsdale, beyond a pair of greenshanks, which were evidently nesting at Kildonan, and were very fierce in their attacks upon me.—*Clifton; Cobham Hall, September 4, 1876.*

[Hitherto the range of the wood wren northward in the British Islands has not been known with certainty to extend beyond Loch na Nuagh, in Inverness-shire, on the west coast, and the neighbourhood of Banff on the east.—ED.]

**Habits of the American Cowbird.**—Though much interested in the extracts from Dr. Coues's 'Birds of the North West,' I doubt the cowbird's ability to "slip by stealth" into the nests of such numerous species as it is known to deposit an egg in. Nor do I see in the building by the summer yellowbird of a two- and three-storied nest a "proof of its possessing a faculty indistinguishable, so far as it goes, from human reason." It gives up a nest the cowbird's egg has been laid in, and builds another on the top of it, leaving the "obnoxious egg in the basement." Would it not have been better and more akin to reason had the summer yellowbird sought out a more secluded spot, unknown to cowbird, and there made a new nest, instead of adding a second story to the first, making it more conspicuous than before—to say nothing of the third story referred to? Again, how

comes it that a bird endowed with such faculties does not throw out the egg of the cowbird, and save time and labour in the construction of a second or a third nest? I had no opportunity when in Canada of observing the breeding habits of the cowbird, not having met with it there or in Newfoundland during the summer, though the most abundant of all species in the autumn; but the spring migration, according to Wilson, extends very far north. Though it is said to derive its name from its note of "cow-cow," I am inclined to think that its habit of feeding among cattle is more likely to have given rise to it.—*H. Hadfield.*

**Susceptibility of the Swift.**—The boisterous weather of yesterday, accompanied by much cold and rain, appears to have had an effect on the swifts at Dover. Many have flown into houses and been captured by hand this day (September 1st), as I am informed by Mr. Gray, the taxidermist, to whom some were brought, and at whose house I saw two. I do not think this is unusual with swifts. It is well known they are very susceptible of cold,—more so than the swallow,—as is proved by their coming later and leaving earlier. Mr. Gray mentioned to me, as a remarkable instance of the feebleness to which they can occasionally be reduced, that once the walls of St. Mary's Church, in Dover, were covered with them, hanging in great clusters, seemingly incapable of exerting their powers of flight.—*J. H. Gurney, jun.; Lord Warden Hotel, Dover, September 1, 1876.*

**Migration of Swifts.**—Though I have not noticed any migration of these birds this year on or about the 1st of July, and therefore cannot throw any light on Mr. Gurney's note on this subject in the 'Zoologist' for August (S. S. 5045), I find by my note-book for 1873 that I was at Spurn on the 7th of July, and have the following entry, "Saw a quantity of swifts going southward."—*F. Boyes.*

**Migration of Swifts.**—Large numbers of these birds passed over Bedford on the morning of the 8th of August, and I continued observing small quantities till the 11th, when they all disappeared from this locality. On the 24th I observed a swift flying about near the little village of Fiskerton, upon the Trent. I see in the 'Field' that the editor observed swifts at Bognor upon the 4th of this month (September); and a friend informs me that he saw one near Stony Stratford upon the 8th.—*C. Matthew Prior.*

**Black Grouse in the New Forest.**—Having read the extracts from Mr. Lord's 'Naturalist in British Columbia,' with regard to the dancing performances of certain grouse in the breeding season, and Mr. Mathew's comment upon the same, in the September number of the 'Zoologist' (S. S. 5072-73), I am induced to give a short account of what has fallen under my own observation respecting the amatory fervour with which black game will sometimes fight as well as dance. The species is undoubtedly much scarcer than formerly in this neighbourhood, and no one can but regret its steady decrease, yet it is pleasant to know that even now it does exist in this part

of the kingdom, and is still indigenous in some of the more wild parts of the forest. One evening in May I had been upon an extensive heath for some considerable time, in the hope of finding the much-coveted eggs of the hen harrier or Montagu's harrier,—one or both species had frequented the heaths the previous season,—and, as darkness was fast coming on, I was preparing to find the track into the highway when I was somewhat startled by a peculiar noise, as loud as it was strange to me, and, as far as I could conjecture, it came from the top of a hill at no great distance. I crept stealthily towards the spot, and on reaching the brow of the hill I saw five or six males of the black grouse engaged in a desperate fight. So intent were they on tearing and plucking each other that I crept on hands and knees amongst the heather to within a few yards of the scene of the conflict, when my proximity became apparent, and the belligerents dispersed, one or two settling upon the branches of some beeches which were near. I had read, but was never before an eye-witness, of these amatory conflicts amongst those beautiful birds, and on this occasion I did not see a female anywhere in the neighbourhood; but the scattered feathers left upon the battle-field seemed to indicate that what I had seen was not the first occurrence of the kind which had taken place upon the same spot. Is it the case that, the species being polygamous, all the males of the surrounding neighbourhood meet at a particular spot and fight for the privileges of the harem? I was not aware, until I saw the congregation in question, that such a number of this species were resident in any one spot in the forest. Often in crossing the heaths and moorlands a specimen of this noble bird may be put up, but it is seldom that more than one, or a pair at most, is seen. I have occasionally seen the young birds, but never stumbled upon the nesting-place except on one occasion. The slovenly-constructed nest was on the ground amongst a few stunted bushes of blackthorn and tall heather, and contained four eggs, but the bird which laid them was evidently unwell, as the markings were pale and very ill-defined—different, in fact, from specimens I have seen from the north. As to the food of the species, I suspect few kinds of berries come amiss to their taste. I have seen both acorns and hawthorn berries in the stomach of the same bird, and on one occasion I saw a female feeding upon the scarlet berries of the knee-holm, or "butcher's-broom," as I believe it is called, which berries, by-the-bye, are said by the forest people, to be stained with the blood of the Danes. They will also eat whortle-berries,—locally "black-harts,"—which grow very commonly in some parts of the forest. At the beginning of April a game-keeper brought me a beautiful female bird which had come by its death by flying against the telegraph-wires: it was much mutilated about the breast, its neck was broken, and its head nearly severed from the body: the stomach of this specimen contained the tops and leaves of heather, mixed with a little green herbage. The forest people call the male "black cock,"

and the female "poult," or "heath poult," and some of them seem totally ignorant that they are the two sexes of the same species; in fact, I remember a man once bringing a female to me, with the remark that he had got a queer hen pheasant with a short tail, and thought it would be a valuable novelty. "Within the memory of man," to use a much hackneyed phrase, the species has become comparatively rare, and will, I fear, eventually be "a thing of the past" in the grand old forest, whose natural beauties are replete with pleasure and profit to any thinking mind.—*G. B. Corbin.*

**Redlegged Partridge sitting on a Gate.**—A farmer told me that a few days ago he heard a great noise proceeding from an adjacent enclosure: on reaching the place he saw what he took to be a hen partridge standing on a gate calling its young together out of reach of danger; but on creeping up quite close he was surprised to see that it was an old male French partridge calling lustily. I remember once seeing in Lincolnshire a partridge standing on the top of a haycock calling as loud as he could.—*C. Matthew Prior.*

**Common Dotterel near Penzance.**—I think it well just to note the occurrence of the dotterel in this neighbourhood, because we are very seldom visited by it: it is a species, I believe, that occurs far more frequently in the south-eastern districts than the south-west. Now and then, and at uncertain intervals, we hear of a specimen or so in our open moors and fallows. The example I examined last week was, I believe, solitary on a hill or slope running up from Mount's Bay to no great elevation. It appears to be a bird in adult plumage, with a few of the feathers on the back bordered with rust-colour—perhaps indicative of winter plumage, as the rest of the plumage shows no sign of its being a bird of the year.—*E. H. Rodd; Penzance, August 29, 1876.*

**Green Sandpiper at Northrepps.**—In my note on the occurrence of the green sandpiper rather a curious misprint occurs: "of knot" should be "oftenest"—rather a perplexing mistake, as ornithologists do not, in a general way, consider the green sandpiper to be a "species of knot" (S. S. 5083). I saw the same bird or another one in just the same place a few days afterwards, and this time it did utter a note upon being flushed.—*J. H. Gurney, jun.; Calais.*

**Curious Habit of the Common Sandpiper.**—In the August number of the 'Zoologist' (S. S. 5031) is an account of a curious habit of the common sandpiper by Mr. H. M. Wallis, who asks if any one has observed a similar trait in the same species. I once had the pleasure of observing something of the kind. It was early in April, while angling in the Petteril, near Carlisle, when, for the first time that year, I noticed a common sandpiper, which was sitting on a bed of gravel near the brink of the river. As I approached it flew across to the opposite side, and sat down on a stump of the weiring made to defend the bank of the pool, which is deep, and the

stream rapid. It had not been there more than a minute when a sparrow-hawk swept over a high hedge close by; observing this, the sandpiper dropped off the stump into the pool, like a piece of lead, and the hawk went on: the bird then came cautiously out on to the gravel bed it had left on perceiving my approach. I do not remember the year this occurred in, but I was a young man, and I am now nearly eighty-four years of age.—*James Cooper; Dole's Cottages, Sankey Bridges, near Warrington.*

**Great Snipe in Devon.**—On the 23rd of August a beautiful specimen of the great snipe was killed on Dartmoor. Although not a very large bird, I feel sure, from the state of its plumage and general appearance, that it is an adult one. The markings are particularly dark and well defined; but the extreme edges or margins of the feathers have become rather light from exposure, and much worn from constant preening, which would not be the case with a young bird of the year.—*John Gatcombe.*

**Little Crake at Hastings.**—When at Hastings last week I bought a little crake for my collection. It was brought in to be preserved on or about the 16th of April. It was very stale, and had the appearance of not being shot; probably the verdict was "found dead." One other Hastings little crake (recorded in the 'Zoologist' some years since) was, if I remember right, caught by a cat. The bird obtained this year is in the brown plumage, with much white on the throat, and the bars on the flanks indistinct. It is a very large specimen; this may be partly in the stuffing, but I think the little crake is a decidedly larger bird than Baillon's.—*J. H. Gurney, jun.; Antwerp.*

**Velvet Scoter.**—On the 14th of June last, when driving round the head of Loch Scridain, an arm of the sea on the west coast of the island of Mull, in company with my friend Mr. J. A. Harvie Brown, I observed a pair of velvet scoters sitting on the water a little way off the shore. From the lateness of the date, it is not at all impossible that they were breeding on the moors on the adjoining hillside.—*J. J. Dalgleish; Brankston Grange, Culross, N. B., September 13, 1876.*

**Does the Common Gull breed in the Scilly Isles?**—I shall be obliged to any of your correspondents who would tell me if they ever knew positively of the common gull (*Larus canus*) breeding on Annet, or any other of the Scilly Isles. I have some eggs that are said to have been taken there this year.—*William H. Heaton; Meadow Croft, Reigate, September 20, 1876.*

[The common gull is not found in the Scilly Isles in summer, nor is it by any means so common there in winter as the kittiwake, herring or lesser blackbacked gulls. Mr. Vingoe, of Penzance, on visiting Scilly in the breeding season found no common gulls there, and Mr. Rodd is equally certain that this bird does not breed in the Land's End district.—ED.]

**Herring Gulls at Tintagel.**—Passing through the churchyard, where the graves were covered, to the depth of a foot and more, with lady's bedstraw

(*Galium verum*), and the air was perfumed from its golden blossoms, we left the lonely church, and came out on the side of the cliff, with the wild promontory on which one portion of the old castle stands immediately before us. It was a glorious July day; the sea below caught the sun-light and answered back with "countless laughter"; the scent of the sea pink wafted all around was itself a delicious reminder that we were on the coast; the curious ruins on the hill-side shimmered in the sun; a few kestrels were poising themselves athwart the deep blue of the sky; and the silvery herring gulls were sailing solemnly in little parties of threes and fives but a few feet above the ground, all pointing northwards, and all seeming to follow the line of flight which those before them had taken, which tracked with hardly any deviation the many windings of the cliffs. Slipping quietly a little further down the hill-side above the sea, we placed ourselves under this path in the air which the birds had chosen, and, sitting behind a fragment of ancient masonry, soon had some of the gulls passing overhead; and so close did they come, that, had we stretched out a walking-stick, we might, perhaps, have tickled some of them on the breast. But they were not startled; one or two gave a glance as they swept solemnly on, as much as to say "All right, old fellow!" and so grave and silent were they that there was something ghostly about them; they might have been the transmigrated Knights of the Round Table keeping watch over the scene of their former revels. We looked anxiously for the choughs, but they were nowhere to be seen. An aged birdstuffer at Boscastle told us that they were all engaged with their nests, which are placed in deep crevices among the cliffs; and that until the young choughs are advanced enough to sit out upon the rocks the old birds are seldom seen, as they keep close at home with their young.—*Murray A. Mathew; August 25, 1876.*

**Greater Shearwater in Devon.**—I have just examined a greater shearwater, which was killed off Plymouth at the end of July last, but I could not get the exact date. It is a very fine adult bird, with the under parts much whiter, or apparently more bleached, than they are just after the autumnal moult, with scarcely a shade remaining of the dusky patch on the belly, so conspicuous on the birds generally obtained at the beginning of winter. I understand there were no others with it when shot.—*John Gatcombe.*

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**Acipenser huso.**—A fish of this rare species, in a decomposed state, was washed ashore between Brook and Freshwater, on the 9th of August.—*H. Hadfield; Ventnor, Isle of Wight.*

**Red Mullet and Salmon Peal taken at bottom on a Spiller.**—On the 7th of September Mr. Symons, of Mayon, captured a red mullet on hook and line: it was taken on a "spiller" baited with lugworm and pilchard. Which sort of bait the fish took it is, of course, impossible to say.

Mr. Symons also took on the spiller (which is a line fishing at the very bottom, and this makes the catches remarkable), on the 7th instant, a salmon peal, and another the next day.—*Thomas Cornish; Penzance, September 9, 1876.*

**Tadpole-fish, or Trifurcated Hake, off Penzance.**—A specimen of the tadpole-fish, or trifurcated hake (*Raniceps trifurcatus*), has been taken on rocky bottom in about four fathoms of water, a mile from shore. This fish is remarkable, whether alive or dead, for its exceedingly unpleasant odour.—*Id.; September 22, 1876.*

**Flying-fish (*Exocetus evolvans*) in the Bristol Channel.**—While on a yachting cruise on the south coast and in the mouth of the Bristol Channel, last month, we saw, within about one hundred yards of the yacht, a shoal of flying fish spring from the water and fly just above the surface for about twelve yards. I was not aware that these fish came so near our shores, but our captain informed me that it was not the first time he had seen them in our English seas.—*W. Taylor; Chad Road, Edgbaston, Birmingham, September 15, 1876.*

**Capros aper.**—A small shoal of boar-fish (*Capros aper*, Lacépède) is now on exhibition in one of the smaller tanks of the Crystal Palace Aquarium. These were obtained on the extreme south-west coast of Cornwall, not far from the Land's End. The exhibition of these very beautiful and highly-coloured fish in a metropolitan aquarium is one example of the marked advance of aquarian knowledge. They were conveyed many miles by road and rail, and after the journey, as may be easily imagined, were in a weakly condition. After having been on exhibition a fortnight, however, fifteen out of sixteen are alive and well, one being dead on arrival.—*John T. Carrington; Crystal Palace Aquarium, September 25, 1876.*

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**Parasitic Sea-Anemones.**—It has long been known that some intimate bond of attachment exists between two species of hermit crabs (*Pagurus*) and two species of anemones (*Actinaria*). *Pagurus Prideauxii* and *Adamsia palliata* are very rarely, if ever, found alone, but generally in company with each other; and, what is still more astonishing, young hermits are always associated with young anemones. They grow together, never separating—unless by some untoward accident—while life lasts. The anemone is fixed to the lip of the shell inhabited by the hermit, its lateral lobes expanding and meeting in a suture on the top. It is thus carried with its tentacles hanging down under the legs of the crab, and gathers its food—to use Mr. W. A. Lloyd's graphic expression—"like a sweeping-machine, which collects what it removes." When the hermit changes its residence, after having first ascertained that the new quarters are comfortable, it returns to the old one, carefully peels off the anemone and causes it to adhere to the



new shell. There is a similar, though hardly so intimate, connection between *Pagurus Berhardus* and *Sagartia parasitica*. This hermit is never found without one or more of these anemones attached to the upper surface of its habitation, the load sometimes being so heavy that the unfortunate hermit can hardly move; but *S. parasitica* may often be found attached to the limbs of *Maia squinado*, and singly or in clumps to empty univalve shells. The extraordinary association of such widely separate animals as crabs and anemones is well worthy of more attention than it has hitherto received. How do they recognise each other? and, in the case of *P. Prideauxii* and *A. palliata*, how is it that the young are always found together, and *vice versa*? The benefits of the association appear to be almost entirely in favour of the anemone; for it can readily be supposed that, by taking advantage of the locomotive organs of the crab, it obtains larger and more frequent supplies of food. This is quite in accordance with what has been observed in other departments of Nature; but as there is no known instance of one species having been created for the sole benefit of another, it is probable that there is some compensatory advantage to the crab, and the pains which *P. Prideauxii* takes that the connexion shall not be severed appears to point to something of the sort. Can it be that the crab also obtains a larger food-supply from, or by means of, the anemone? Anemones never digest the whole of what they catch, but, having taken what they need, the remainder is thrown up in a round pellet, and, as crabs are scavengers and nuisance-removers *par excellence*, they would have no objection to eat these pellets of half-digested food—nay, may possibly consider it a duty to do so. Besides the two species above mentioned, other anemones are occasionally parasitic. Specimens of *Actinoloba dianthus* and *Sagartia mesembryanthemum* have been seen in this aquarium firmly fixed upon the backs of shore-crabs (*Carcinas manas*), and I have myself seen a fine *Tealia crassicornis* completely covering the carapace of a crab of this species. The appearance reminded me of a common object of the sea-shore—to wit, a young lady mounted on a donkey, his hind legs appearing to belong to his fair burden. In *Adamsia palliata* and *Sagartia parasitica* the parasitic instinct has become permanent, and the structure of the latter species has been modified in consequence, for of all the Actinariæ it possesses the toughest and stoutest skin, which is a manifest protection against the hard knocks it must occasionally receive from rocks and stones while moving about at the will of its exceedingly active porter. Mr. P. H. Gosse, in his 'Actinologia Britannica,' says, "this association is unaccountable." Perhaps now that these animals can be kept in health and strength in confinement opportunities may arise of explaining this, amongst many other unsolved problems of marine and freshwater Zoology.—*E. Howard Birchall; Crystal Palace Aquarium, September 23, 1876.*

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## Proceedings of Scientific Societies.

ENTOMOLOGICAL SOCIETY OF LONDON.

September 6, 1876.—J. JENNER WEIR, Esq., F.L.S., in the chair.

### *Additions to the Library.*

The following donations were announced, and thanks voted to the donors:—‘The Zoologist’ and ‘Newman’s Entomologist’ for September; presented by the Representatives of the late Edward Newman. ‘The Entomologist’s Monthly Magazine’ for September; by the Editors. ‘Nature,’ nos. 353 to 357; by the Publishers. ‘The Sixth Annual Report of the Leeds Naturalists’ Club; by the Club. ‘The Naturalist; Journal of the West Riding Consolidated Naturalists’ Society and General Field Club;’ by the Editors. ‘The Canadian Entomologist,’ vol. viii., nos. 7 and 8; by the Editor. ‘Annales de la Société Linnéenne de Lyon,’ 1873 and 1874, tomes 21 and 22; by the Society. ‘Sur une nouvelle espèce du Genre d’Ephémérines, Oligoneuria (*O. Rhenana*), par feu le Dr. L. Imhoff, traduit de l’Allemande et annoté par le Dr. Emile Joly;’ by M. Joly. ‘L’Abeille,’ tome xiv., no. 177; by the Editor, M. de Marseul. ‘Mittheilungen der Schweizerischen Entomologischen Gesellschaft,’ vol. iv., Heft no. 9; by the Swiss Entomological Society. ‘Bulletino della Società Entomologica Italiana,’ anno ottavo, trimestre ii.; by the Society. ‘Bulletin de la Société Impériale des Naturalistes de Moscou,’ 1876, no. 1; by the Society. ‘The American Naturalist’ for July and August, vol. x., nos. 7 and 8; by the Editor. ‘Monograph of the Geometrid Moths,’ by Dr. A. S. Packard, jun., forming the tenth volume of the United States Geological Survey of the Territories; by Dr. F. V. Hayden, U. S. Geologist. ‘Acta de la Academia Nacional de Ciencias Exactas existente en la Universidad de Córdoba,’ tome 1; by Dr. Burmeister. ‘Description Physique de la République Argentine d’après des observations personnelles et étrangères, par le Dr. H. Burmeister, traduit de l’allemand par E. Maupas,’ tome premier; by Dr. Burmeister.

By purchase:—‘Fabricii Systema Piezatorum.’ ‘Reise der Oestereichischen Fregatta Novara um die Erde,’ Heft iv.

### *Election of Member.*

Edward Boscher, Esq., of Belle-vue House, Twickenham, was balloted for and elected an Ordinary Member.

### *Exhibitions, &c.*

Mr. Edward Saunders exhibited some recently captured Hymenoptera and Hemiptera, many of them rare, and made some remarks respecting the

bug of the house martin, of which he had taken eighteen specimens on the window-sills of a house.

Mr. Weir mentioned that, on a recent visit to the South Downs, he had suffered much annoyance from the attacks of the harvest-bug, as many as eighty pustules appearing on each foot. Several remedies were suggested, especially rubbing the affected parts with brandy and water; but Mr. Smith stated that on one occasion when he was in the Isle of Wight, and exposed to their attacks, he had found that by taking a dose of milk of sulphur he was effectually relieved from all annoyance.

Professor Westwood communicated a note with reference to some shoots of horse-chestnut which he had exhibited at the July meeting of the Society, as having been destroyed, apparently by some Lepidopterous larvæ or wood-boring beetles; but he had since received from Mr. Stainton some shoots that had been forwarded to him by Sir Thomas Moncrieffe, which had been destroyed by squirrels in precisely the same manner. Sir Thomas had himself seen the squirrels at work splitting the shoots with their teeth and extracting the pith.

Mr. Smith remarked that he had found the common buff-tip moth (*Pygara bucephala*) very destructive of late to the Spanish chestnut, a tree on which the insect is not usually found.

Professor Westwood also stated that he had received from a correspondent in Oxfordshire specimens of the two small species of grasshopper with long antennæ, *Meconema varium*, *Fab.*, and *Xiphidion clypeatum*, *Panzer*, which he had taken on a pear tree in his garden, where they had been regularly observed for the last five or six years.

Mr. M'Lachlan stated that the former insect was frequently observed by Lepidopterists when sugaring for moths.

Mr. Smith communicated the descriptions of three additional species of Formicidæ from New Zealand, which had been sent to him by Mr. David Sharp since his description of Mr. Wakefield's collection was in the press. Two of the species belonged to genera not previously ascertained to inhabit New Zealand, namely *Amblyopone* and *Ponera*.

Mr. F. Smith exhibited a series of sixty specimens of a sawfly (*Cræsus septentrionalis*), which he had bred from larvæ found feeding on young shoots of the alder, growing on the banks of the Sid, near Sidmouth, South Devon. The specimens of the fly were all bred in a single flower-pot, nine inches in diameter.

Mr. Smith also mentioned the fact of *Mutilla Europæa* having been found parasitic on *Bombus muscorum*, by Miss M. Pasley, in an orchard at Shedfield Grange, near Wickham, Hants; he also remarked on a coincidence somewhat remarkable, that on the day previous to his receiving Miss Pasley's communication, Prof. Edward Brandt, of St. Petersburg, had informed him that he had found *Mutilla Europæa* in a nest of *Bombus muscorum*; this

being the first instance that had come to his knowledge of the parasite infesting the nests of that species of humble-bee.

Dr. Sharp communicated the following list of localities of some species of Amazonian Staphylinidæ discovered by Dr. Trail, and described by Dr. Sharp in the 'Transactions of the Entomological Society of London,' 1876, pp. 27—424 :—

*Placusa confinis*. Lages, near Manaos.

*Diestota sperata*, *Homalota Traili*, *Gyrophæna parca*, *G. debilis*, *G. boops*, *Coproporus tinctus*, *Sunius strictus*. Berury, on the east bank of the Rio Purus, near its junction with the Solimoes, or Upper Amazon.

*Calodera syntheta*, *Homalota brevis*, *H. gilva*, *Gyrophæna parca*, *G. lævis*, *G. juncta*, *G. convexa*, *G. sparsa*, *G. quassa*, *G. tridens*, *G. boops*, *G. debilis*, *Conurus setosus*, *Plociopterus lætus*, *P. Traili*. Gaviao, on the west (*i. e.* the left side descending) bank of the Rio Juruá, about three hundred miles from its mouth (about 4° S.).

*Gyrophæna pumila*, *G. parvula*, *Coproporus distans*, *Xantholinus anticus*, *Palaminus discretus*, *Stenus pedator*, *Bledius similis*. Jurucuá, on the east bank (*i. e.* right, descending) of the Rio Purus (about 7° S.).

*Coproporus curtus*. Parentins or Juruty, on the south bank of the Lower Amazons, about one hundred miles above Obydos.

*Coproporus politus*, *C. ignavus*, *C. cognatus*, *Philonthus Traili*, *Stenus Traili*. Ananá, on the north bank of the Solimoes or Upper Amazons, not far above Manacapuru.

*Coproporus conformis*, *Cryptobium triste*, *Sunius insignis*, *Stenus excisus*, *Omalium nanum*. Pupunha, on the west bank of the Rio Juruá (about 5° S.).

*Doliceon distans*, *Bledius albidus*. Mouth of Lago de Pao, left bank of Rio Juruá (about 3° S.).

*Cryptobium Traili*, *Bledius muticus*, *B. modestus*. West bank of Rio Madeira, above Abelha (about 7° S.).

*Pæderus punctiger*. Cararaucu, north bank of Lower Amazons, about one hundred miles below Villa Bella (formerly Villa Nova).

*Bledius addendus*, *B. simplex*. Rio Solimoes, or Upper Amazons, off the Ilha de Catua, near Tefé (formerly Ega).

#### *Papers read.*

The following memoirs were read :—

"Notæ Dipterologicæ. No. III. Monograph of the Genus *Systropus*, with Notes on the Economy of a new Species of that Genus." By J. O. Westwood, M.A., F.L.S., &c., President of the Entomological Society.

"Notæ Dipterologicæ. No. IV. Descriptions of new Genera and Species of *Acroceridæ*." By J. O. Westwood, M.A., F.L.S., &c.—*F. G.*

*The Eagles of Poetry and Prose.* By the late EDWARD NEWMAN.

[The following fragment appears to have been written with some idea that it should form the commencement of a popular work, to be entitled 'British Bird Biography'; the idea was probably abandoned, for no continuation is to be found.]

EAGLES are of two kinds and of two characters: the first may be called the poetic eagle; he is royal, noble, lordly, brave: he strikes only at "the antlered monarch of the glen," or at some beautiful child playing at the cottage-door; in either case he grasps the object in his talons, and soars aloft with it, up the face of some perpendicular crag; he will do this regardless of his enraged pursuers, at whom he shrieks his utter contempt and waves his defiant wing, and pursues his steady course unscathed through the bullets which ascend from below or the rocks hurled at him from above. His eyrie is a palace, where he feeds sumptuously every day, he and his spouse and the little ones. Woe to the cragsman who attempts to reach that eyrie! it would be certain death: it were safer to beard the lion in his den than to approach the monarch of the air in his exalted eyrie: cutlass and blunderbuss would prove unavailing: from the moment the cragsman makes the attempt his fate is sealed. Such is the eagle of poetry, the eagle of the imagination!

The eagle of prose is a very different bird: he will glide over the moors in search of a dead sheep that has fallen from a precipice, or, better still, for a dead horse—rare dainty: five or six—in one instance seven—eagles have been disturbed at this unsavoury repast: he will gorge himself with the carrion until he can scarcely fly. He is frightened at the yelping of a fox; trembles at the baying of a collie; dreads the shepherd boy, and flies hither and thither, in the extremity of fear, when pursued by the sea gull, the skua, the kestrel, or the hoodie—birds that are ever ready to pursue and insult his imperial majesty. Some reader may reasonably object that there are not enough dead horses, or dead sheep, to feed all the eagles of Scotland and Ireland. Oh, no! he will seize the newly dropped lamb, or a rabbit caught in a gin, or a ptarmigan struck by a peregrine, or a turkey poul, or a gosling from a farm-yard; but a dead rat is his particular weakness; whether on his native hills or in an aviary nothing is so acceptable as a dead rat.

Then, again, dead fish—literally stinking fish—will attract him from afar. I have abundant evidence of this: Mr. Thompson's may suffice. In June, 1835, 1836, 1837 and 1838, quantities of fish sickened and died in Lough Derg, in the county Galway: perch chiefly; trout and pike in smaller numbers: they floated on the surface, and were landed on the shore by the ripple. The odour was irresistible; the eagles came from all quarters, and for three weeks at a time threw heart and soul into the banquet; nothing could drive them away; if scared for a moment by the cries of a baby, the yelping of a puppy, or the caw of a hoodie, they would return immediately the imaginary danger had passed, and resume their labours at the inexhaustible feast.

Stripped of his lion's skin, the eagle is still a fine bird, noble in appearance, if not in character. It is a great treat for a southerner, a real cockney like myself, to see him suspended almost motionless above Ben Cruachan, or wheeling round the summit of Croaghpatrick, Sleive Donard, or Lugnaquilla. How intently have I watched him in all these places! and nearer still at Urrisbeg, a little hill near Roundstone, in Connemara, at the base of which Mr. Mackay first discovered the Mediterranean heath. The eagles are very frequently seen floating over this hill, and passing and re-passing between it and the Twelve Pins, near Ballinahinch, the seat of the once celebrated Mr. Martin; and their cry is something that tells of wild nature: I have heard it called a scream, a yelp, a bark: it is neither of these: it is something inimitable, indescribable. You may often hear it at the "Zoo"; more rarely on the mountain wilds,

In confinement the eagle is sulky, savage and treacherous; but still retains its cowardly disposition, and will submit to be worried by ravens, crows and magpies. I know of but a single exception, and this is recorded by Mr. Thompson, who, in his 'Birds of Ireland,' says, "My friend, Mr. Langtreay, of Fortwilliam, near Belfast, had in 1838 a golden eagle that was extremely docile and tractable. It was taken in the summer of that year from a nest in Inverness-shire, and came into his possession about the end of September. This bird at once became attached to its owner, and after being about a month in his possession, was given its full liberty,—a high privilege to a golden eagle having the use of its wings,—but which was not abused, as it came to the lure whenever called. It evidently derived much pleasure from the application

of the hand to his legs and plumage, and permitted itself to be handled in any way. As one of the first steps towards training this eagle for the chase, it was hooded after the manner of a hunting hawk, but the practice was soon abandoned as unnecessary, in consequence of its remaining quiet and contented when carried on the arm of its master. It was unwilling indeed to leave him even to take a flight, unless some special 'quarry' was in view. When at liberty for the day, and my friend appeared in sight at any distance, his arm was no sooner held out towards the affectionate bird than it came hurriedly flying to perch upon it."

This, as I have said, was a most exceptional instance of tameness, and even affection, in an eagle, and deserves to have a more extended circulation than it could obtain in Mr. Thompson's volumes on the 'Birds of Ireland'—a good work, but very little known.

Eagles are at especial pains to drive their young from the neighbourhood as soon as they can shift for themselves; hence arises the fact, which I think was first noticed by Mr. Stevenson, that nearly all the eagles that have been shot or trapped in different parts of the United Kingdom, are very young and in immature plumage. The knowledge of this habit of the eagle is, however, very much older than Mr. Stevenson's time; indeed, it is mentioned so long ago as Turberville's 'Booke of Falconrie,' printed in 1575. The author first explains how the parent eagles teach their young to "kyll their praye and feede themselves"—in which, by the way, I believe he is mistaken, for killing and feeding "come by nature," as a philosopher once solemnly enunciated of reading and writing; this is parenthetical, of course, but reverting to Turberville, he goes on to explain that, "No sooner hath she [the female parent] made them perfit, and thoroughly scooled them therein, but presently she chaseth them out of that coaste, and doth abandon them the place where they were eyred, and will in no wise brooke them to abide neare hir, to the ende that the countrey where she discloseth and maketh her eyrie, bee not unfurnished of convenient pray, which by the number and excessive store of eagles might otherwise be spoiled and made bare. For the avoyding of which, this provident and carefull soule doth presently force her broode to depart into some other part and region."

In the 'Zoologist' for 1846 there is a curious account of an eagle and of the way in which it was obtained:—"Some boys having thrown out a line and hook into the sea, baited with a

herring, for the purpose of catching a gull, the bait was spied and pounced upon by the eagle; and the hook becoming fixed in the inside of his foot, he was found, by the boys upon their return to examine their line, floating on the surface of the water. They immediately went off in a boat and completed their capture without much difficulty." (Zool. 1301).

Perhaps a word or two may be useful to those who have an eagle in confinement. The aviary must be kept as clean as possible. Then as regards the food, it is always better with the hair or feathers on: a live rat is acceptable,—though not so much so as a dead one,—and an eagle will prove himself an adept in securing this kind of prey: a dead sparrow will be swallowed whole, and a herring—one of those loudly commended to our notice as "fine fresh herrings"—will be swallowed with great gusto: if fresh meat be offered to the captive, it should be trailed through gravel or sand: he will swallow an odoriferous herring with any amount of bird-sand adhering to it. Skin, feathers, scales and bones will be ejected from the stomach in masses almost equal to a hen's egg in size. Lastly, about the bath: on no account neglect to keep the captive eagle abundantly supplied with pure cold water in which he can bathe *ad libitum*. No protection against wind and rain appears to be required: Nature does not drive the prose eagle into secret caverns or deep recesses of the rock: he is a stranger to all solicitude about temperature.

Three species of eagles inhabit Britain: one of these has the leg bare of feathers to just below the knee; this is the sea eagle or white-tailed eagle: the toes of this species, as well as the front of the leg, are covered by large and nearly uniform scales: when perfectly adult his tail is pure white: his scientific name is *Aquila albicilla*. The other two have the leg clothed with feathers to the division of the toes, and each toe has three large scales at the extremity only, the other portion of the toe being covered with a network of much smaller scales: the tail in these two species is never white. But the two birds differ so greatly in size that this character alone at once distinguishes them: the larger is the golden eagle; its scientific name is *Aquila chrysaëtus*: the smaller is the spotted eagle, so called from each feather on the back and wings being tipped with white; its scientific name is *Aquila nævia*.

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### Notices of New Books.

*Rambles of a Naturalist.* By J. H. GURNEY, jun., F.Z.S. Demy 8vo. London: Jarrold and Sons, 3, Paternoster Buildings; and London Street, Norwich.

THE contents of this book sufficiently prove the correctness of the title bestowed upon the author by certain of his friends, who are accustomed to speak of him as "the indefatigable"; for we find in it pleasant chitchat on birds observed by him during a journey to Russia and back; notes from his journal on a collecting tour in the Algerian Sahara; notes during the Franco-German War; an account of six months spent among the birds of Egypt; some passing notes on the birds of Italy; an analysis of the claims of certain birds to be accounted British; additions to the avi-fauna of Durham; and other matter. The larger portion of the book is occupied by Mr. Gurney's experiences in Egypt. How industrious he was there is instanced by the list of birds he himself obtained, numbering some two hundred and twenty species; he was fortunate enough to come across one species supposed to be unknown to ornithologists as occurring in Egypt, the lesser white-fronted goose, but in a subsequent note Mr. Gurney states that he was not the first to detect this goose in Egypt, it having been already noticed in the Delta; and he was able to establish the certainty of other birds frequenting that country which had been admitted by previous writers with some hesitancy, such as the marbled duck, our English swift, the honey buzzard, Montagu's harrier, and Baillon's crake.

It was little to be expected that much that was new could be said on the birds of Egypt, after the numerous treatises which have issued of late years from Continental and English writers, and Mr. Gurney is to be congratulated on having achieved so much on a well-worked field. The voyage up the Nile to the first Cataract has become a fashionable winter excursion for invalids and sportsmen; and we have reaped the fruits of this in the able papers upon the Ornithology of the country which have appeared from time to time in the 'Ibis,' from Dr. Leith Adams, Mr. Cavendish Taylor, and Captain Shelley. The last has published his various notes in a single volume, which forms the best authority we have on Egyptian Ornithology.

With its grand and mysterious river and numerous lakes and marshes, Egypt has ever been celebrated for the abundance of its birds. The ancient inhabitants of the land worshipped many of them which they regarded as beneficial in destroying noxious insects and vermin. The sacred ibis, the chief object of their cultus, was probably a species imported by them, and one which was never common on the Lower Nile, where it is now unknown. The prophet Isaiah, in a much-disputed passage, apostrophizes Egypt as "the land of whirring wings."\* We have read the first impressions of scores of travellers, not given to the study of birds, who were astonished at the multitudes of water-fowl to be seen on the lakes bordering the Nile. In the winter time ducks of various species may be measured on Lake Menzaleh by the acre. Mr. Gurney tells us how the natives catch coots in the dark on this lake with casting-nets. Among the palm-groves, the only birds met with, besides the ubiquitous *Turtur Senegalensis*, were night herons, hiding in the thick foliage near the tops of the trees. The white wagtail was the commonest of the smaller birds in the Delta in the winter. "And really they rather pall upon you after a time," writes Mr. Gurney, "for one sees white wagtails at every step, in every field, on every pathway, and frequently in company with sandpipers on the sandbanks—singly, in pairs, in family parties, in flocks of hundreds; and sometimes they came upon the Diabeyha."

Of course everybody who visits Egypt has something to say on the subject of quails. Mr. Gurney quotes from Souini, who published his 'Travels in Upper and Lower Egypt' in 1799, that the quantity of quails at Alexandria (on their migration) is really past belief. Four were to be had at the market for three farthings. "The crews of merchant-ships were fed upon them; and there existed at the Consul's office at Alexandria several complaints preferred by mariners against their captains for giving them nothing but quails to eat." This reminds us of the old stories about the abundance of salmon in Scotch households. "Extraordinary as this may appear," Mr. Gurney adds, "I can quite believe it from what I have seen and heard." From the middle of March until the middle of April is the time of the passage of quails through Egypt. At that period Mr. Gurney says, "out of

\* Isaiah xviii. 1. In our version, "Woe to the land shadowing with wings," but the rendering above is the most literal translation of the Hebrew.

a patch of lentils twenty feet square, I may safely say, fifty brace rise." The birds at this time are fat and delicious.

A very characteristic bird of Egypt is the spur-winged plover, called, from their cry, "ziczacs":—

"They quite pervade Egypt. At the village pool, on every sandbank, in every flooded rice-field—go at any season you like, you cannot fail to find them. Similarly in the young wheat-crops and in the clover-fields they are quite at home. Sometimes, when I have been scanning a clover-field, my eye has been arrested by a white patch about the size of a florin, looking for all the world like an oxeye daisy; but though a second glance serves to show that it is not a flower, it will remain still for several seconds, and you may imagine that you see resentment gleaming out of a red eye. During this time the bird's head is straight towards you,—as I have observed a bird's in a bush generally is,—and he is working himself into a passion. His next performance, when he cannot stand being stared out of countenance any longer, is to jerk his body as if some one was pulling at him with a string, to dart up into the air, menacing you with his armed wings, and to give utterance to the loud bi-syllabic cry, which has obtained for him his name of Ziczac."

Mr. Gurney felt himself fully repaid for his journey to Egypt by the sight of the beautiful avocet, which used to be not uncommon in our fens, and by the grand spectacle presented by a flock of flamingos rising on wing. He says the description of the splendour of the latter has not been overrated:—

"Nothing will ever dispel from my memory the feelings with which I first saw flamingos. It needs not the halo of Afric's sun to illumine a splendour to which the gilded birds of the tropics must yield the palm. Marshalled, they stand in one long glittering line; some of them apparently with no head; others with but one leg; others with raised wing and extended neck, evidently enjoying what is denominated stretch. Their tall forms are mirrored in the glassy lake. They are silent and still. Perchance a distant boatman hails us. Perchance the word *backshish* is borne on the air with such bawling that the cautious flamingos, fearful even in their security, are put up. Then what a delicious scene arrests the eye, as the black-pointed wings unfold, and reveal the intense red scapularies which, hidden before, appeared to be cream-colour, pale by comparison with their brightness now. They take several steps in the air, half flying, half walking, and wholly awkward; for twenty yards or more; and then, gathering themselves together, they gradually let their long legs trail out behind. If a small troop, they perhaps fly away in Indian file; but if a large one, they go off in one bright mass, the vivid tints of which are visible afar off,

and which no man who has seen it will ever forget. When the naturalist has got over his ecstasies he had better go to the mud where they were standing, as if, as is most probable, they have been preening themselves, he will be rewarded by some exquisite feathers."

Almost an equally interesting sight, to a naturalist beholding it for the first time, is the vast army of storks upon their migration. These birds pass through Egypt about the end of March. Only a few remain to nest there. The greater number press on further north. Mr. Gurney writes:—

"I daresay I shall not be believed when I describe the prodigious migratory flights which passed us. Armies of them would whiten the sandbanks at early morning, which had evidently spent the night there; and by day they were to be seen sailing round and round in countless myriads. It dazed the eye to look at them. The air seemed scribbled with their white forms. I am within bounds in saying that there seemed enough storks to stock every church, and every tower, and every public office in the whole of civilized Europe. To those who deem me romancing, let me say this—no one should disbelieve a thing because he has not seen it. It must be borne in mind that Egypt, or at least the Nile Valley (they are synonymous terms), is one of the greatest arteries, so to speak, by which feathered migrants seek a northern clime. Like man, they shun to cross the Great Sahara, where the sands are trackless, and the elixir of life—water—is wanting. Hence their teeming thousands in the Nile Valley. For the same number which, in another and a fertile land, would, perhaps, be spread over three thousand miles, are here compressed into a space which on an average is only three miles broad. And this will go on for ever. The channel which has been found so often will be found again; and unless their numbers are kept down by disease, each succeeding year will probably witness greater and greater droves, for few guns are employed against them, and they enjoy a comparative immunity alike from the real sportsman, the naturalist, and the pot-hunter."

Mr. Gurney found the Egyptian goose nesting on some lofty cliffs, the lower ledges of which were tenanted by pigeons; above these were the geese; and higher up still were kites, griffon vultures, and a pair of ospreys. The appearance of the great blackheaded gull (*Larus ichthyaetus*) seems to have been disappointing. Mr. Gurney describes it as far from being as imposing when on the wing as the greater blackbacked gull; but as being, like that species, very shy and wary: it was already in full summer plumage by the 23rd of January.

In examining into the claims of many rare birds to be inserted in the British list, Mr. Gurney has undertaken a work which we trust he will continue. There are, undoubtedly, many *soi-disant* British examples of scarce stragglers to our shores which will not stand any scrutiny into their genuineness. But the investigations Mr. Gurney has been pursuing require not only perseverance but audacity. Not a little confidence is needed by the naturalist who, after examining some private collection, first of all points out to the owner that several of his choicest specimens are not the species they profess to be, and who next declares himself unsatisfied with the evidence brought forward in proof that other rarities have *bonâ fide* been captured within the limits of the British Islands. Collectors do not look pleased when they are remorselessly told that their golden eagles are young ernes; their pine grosbeaks hawfinches; their American bitterns only young examples of the common bittern, and so on. Nor are they pleased if, after all they have urged in favour of the admission of their Greenland falcon or spotted sandpiper as unquestionable English examples, they find that all the impression they have made on the hard-hearted cross-examiner is no more than to lead him to mark their treasures in his note-book as "doubtful." We feel sure that in what he has already done Mr. Gurney has produced many heart-burnings, and has often found it unpleasant work. Still, for the sake of scientific accuracy, it is very necessary that all these unintentional mistakes should be brought to book; and there are few of us who have not, at some time or other, inadvertently contributed erroneous records of the kind Mr. Gurney has been seeking to correct.

The birds which pass under Mr. Gurney's scrutiny in the volume we are noticing are—

- The Eagle Owl.
- The Red-throated Pipit.
- The Spotted Sandpiper.
- The Great White Heron.
- The Harlequin Duck.
- The Redbreasted Goose.
- Brünnich's Guillemot.

Two of these, the red-throated pipit and Brünnich's guillemot, Mr. Gurney would, after sifting the evidence in favour of their admission, expunge entirely from the British list. It has come under our own experience how little known a bird the latter of

these two rejected ones is by even distinguished British collectors who are not aware of the very peculiar formation of the bill in this species. Of the other birds in the above list, the eagle owl—recorded instances of which have been generally escapes—and the harlequin duck—usually confounded with the young of the long-tailed duck—barely succeed in making good their footing. We are fairly surprised at the numerous mistakes Mr. Gurney discovered in criticising the occurrences of the spotted sandpiper, a very distinct species, and one which might reasonably be expected occasionally to be driven as a straggler to our coasts. Many of those recorded proved to be either the common sandpiper or the green sandpiper, and one was actually a spotted redshank. Out of twenty-six cases investigated no less than twenty break down, so that there are only six British spotted sandpipers which can pass muster.

We have not time to comment upon the other short papers contained in Mr. Gurney's book, which, on the whole, we may fairly welcome as a useful contribution to our ornithological lore.

MURRAY A. MATHEW.

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*Note on the Sabine's Snipe (Scolopax Sabini).*

By EDWARD HEARLE RODD, Esq.

AFTER the notice I sent to the 'Zoologist' in February last (S. S. 4811) of the capture of another example of this snipe in this neighbourhood, and which, like the common snipe, had *fourteen* tail-feathers, instead of the supposed normal number of twelve,—a similar feature to the one I examined some years since, killed at Carnanton, near St. Colomb, by Mr. Brydges Williams,—I intended to have sent to the 'Zoologist' a few remarks as to its specific value, having already done so in my "Ornithological Summary for the year 1875-76," which I sent, as has been my custom, to the Royal Institution of Cornwall, at their spring meeting in May last. I do not think that I can do better than send you a copy of the same paper for your use, as it embodies pretty well the great feature of the character of the dorsal plumage, as different from all the other snipes, as entitling it to specific value.

The last year has been remarkable for Cornwall having given a second example of the curious species or variety of snipe called

“Sabine’s Snipe” (*Scolopax Sabini*), and which has afforded no ordinary amount of interest to naturalists from its doubtful claim to specific value. Some half-a-dozen specimens only have been obtained,\* and those at a comparatively recent period,† and, what is singular, all these examples have occurred in the British Isles, the bird being entirely unknown as indigenous in other countries, and there is no record by ornithological authors of its ever having been seen, except in our own islands, in the New or Old World.‡ Cornwall claims to have afforded two of these specimens, the last of which was obtained from the neighbourhood of Penzance, shot by Mr. J. Dennis, jun., and the particulars duly recorded in the ‘Zoologist’ in the month of February last.

Up to a very recent period Sabine’s snipe was recognised and described in all our works on British birds as specifically distinct from the other snipes. One of its principal distinguishing characters, and the one most relied on, is in the number of its tail-feathers being twelve instead of fourteen, the last being the normal number of the tail-feathers of the common snipe, and sixteen that of the great or solitary snipe. Another character in this bird quite at variance with the other snipes is the entire absence of the longitudinal buff lines which we always see in the dorsal plumage of the great, common and jack snipes.

In spite of these two marked characters, there has been a very strong leaning of late by our scientific naturalists to regard this bird as a mere melanism of the common snipe and not a distinct species. Mr. Gould is a convert to this opinion, for in his ‘Birds of Europe’ he gives a figure of the bird as a distinct species, but in his last work, the ‘Birds of Great Britain,’ he has omitted to figure the bird or to regard it as specifically distinct. Now, in support of this newly-adopted opinion as to its being only a variety and not a distinct species, it is no less interesting than true that the two Cornish specimens—the one killed at Carnanton and the other near Penzance—had each *fourteen* tail-feathers, the normal number, as before mentioned, of our common snipe’s tail: of this fact I am certain, as I counted them distinctly more than

\* A list of twenty-five will be found in ‘The Field’ of December 10th, 1870, since which date several others have been obtained and recorded.—ED.

† The type specimen described by Mr. Vigors was shot in August, 1822.—ED.

‡ A specimen in the foreign collection of the British Museum was shot near Paris by a friend of the late M. Jules Verreaux.—ED.

once. This fact therefore throws to the winds the twelve-tail-feather theory as the great leading character to be depended on of its specific value, and aids in a very substantial form the correctness of the modern opinion against it. (See articles in 'Zoologist,' 7882 and 7938; S. S. 1422 and 4801).

I will here remark that the opinions of Mr. Gould and other eminent naturalists, previous to the establishment of the fallacy of the twelve-tail-feather theory, had been strongly leaning to *S. Sabini* being only a variety and possessing no claim to specific value; and I need scarcely add that their opinions must probably now be strengthened to a conviction of the accuracy of their former conjectures by the fact of the correspondence of the number of the caudal feathers in the two birds in more instances than one.\*

As, however, I do not participate in a full conviction of the identity of the two birds, I will proceed to offer my reasons for entertaining a doubt on the subject:—

*First.* It is remarkable that in all the examples that have occurred in Great Britain a perfect similarity of plumage exists both as to the arrangement and tone of colour. In each specimen correspondence of markings prevails, and the darker and lighter shades of colouring in the different portions of the plumage above and below, from the description of each specimen, have been proved entirely to agree.

*Secondly.* That in no one instance has there been any sign or shade of even a partial development of the longitudinal dorsal lines which appear so prominent in all the other species.

*Thirdly.* In *Scolopax Sabini* the form and character of the dorsal and scapulary feathers are very different from those of the other snipes, being small, ovate, tile-like, and resembling the woodcock's feathers, whilst the scapularies and dorsal feathers of the other snipes are lanceolate, elongated and pointed. This I consider to be a very important character in *S. Sabini*, and appears to me to offer a stronger specific value to its distinctness than even the number of tail-feathers.

I am not aware that this character of the dorsal feathers was prominently brought to the notice of scientific enquirers until alluded to by Mr. J. E. Harting, in his 'Birds of Middlesex' (p. 187), but I think it a strong point in supporting its claims to specific

\* Another instance was mentioned in the 'Zoologist,' some years ago, by Mr. Salvin.—ED.



distinction; and, although these are weakened by the untenable theory concerning the tail-feathers, it has an additional and quite as strong a claim for specific value by this character of the dorsal plumage. For the present, however, I do not see that the question can be any other than an open one.

On referring again to Mr. Harting's valuable and interesting account of the 'Birds of Middlesex,' I observe that he points out not only this character of the scutellated form of the dorsal feathers, but some others as confirming its specific value, *viz.*, the positions of the eye, the length and size of the tarsus, &c., but I see also (which I had before overlooked) that these characters inclined him at the date of that publication to consider *S. Sabini* a distinct species from our common snipe; and I must say that, on further considering the matter, I am more and more strengthened in the opinion which Mr. Harting then expressed.

E. H. RODD.

Penzance, October 9, 1876.

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*Ornithological Notes from Cornwall, Devon and Somersetshire.*

By JOHN GATCOMBE, Esq.

(Continued from S. S. 5110).

SEPTEMBER, 1876.

2nd. There were some teal in the Plymouth market.

5th. Many young turnstones and knots were brought to our birdstuffers, and several young sanderlings, godwits, and other waders sent from Penzance.

8th. Nine oystercatchers killed on Plymouth Breakwater.

11th. I examined, at Mr. Peacock's, a very fine light-coloured common buzzard, which had been captured near Plymouth.

12th. Before leaving Plymouth for Bridgwater this morning, I observed a common scoter in Stonehouse Pool. Rather early in the season for this species, which does not generally make its appearance with us before the end of October or beginning of November. On my way to Exeter I found *Larus ridibundus* plentiful on the mud-banks of the Teign and Exe; and a party of full twenty young herons, disturbed by the noise of the passing train, flew off in a rather compact flock.

14th. Between fifty and sixty wild geese were observed to pass over Weston Zoyland Common, near Bridgwater, flying south, in

the usual form of a wedge, and making a great noise: from description I should think they were bean geese.

15th. Noticed small flocks of Ray's wagtail in the meadows near Moorland, which on being disturbed constantly alighted on the tops of the elm trees. Pied wagtails are just now very numerous by the side of the river Parrett, and it is very curious to see them alight on the small masses of weed or other substances floating swiftly down the stream, and after sailing a hundred yards or more—actively engaged in catching the insects which may have collected thereon—fly back to meet the next approaching mass.

18th. Remarked some turtle doves and a spotted flycatcher; and saw a thrush, picked up on the railway, which had its head cut completely off—I presume, by flying against the telegraph-wire.

20th. There were some common godwits in a poulterer's shop at Bridgwater.

23rd. Observed a flock of goldfinches, consisting of about twelve or fourteen: I mention this as I am told the species is becoming scarce in Somerset as well as in Devonshire. Mr. Peacock, of Plymouth, informs me that he this day purchased a specimen of the gray shrike (*Lanius excubitor*), which was caught by a bird-catcher in the neighbourhood of that town; also a nice variety of the yellow bunting, wholly of a canary colour, which indeed, at first sight, he mistook for a bird of that species.\*

29th. There were some sedge warblers and a few reed buntings on the marshes and meadows in the vicinity of Northmoor. Tit-mice are very numerous in flocks among the pollard-willow trees in this district, but kestrels, which were so plentiful about two years since on Northmoor seem to have entirely deserted it, in consequence, no doubt, of the destruction of the rats and mice by the disastrous floods of last year. While the moors were submerged, I understand, the locality was visited by thousands of coots, ducks and gulls, and that the noise made by the cloud of ducks when rising sounded like distant thunder. Green woodpeckers seem to be very abundant in the neighbourhoods of Moorland and Bridgwater, but I have not observed any other species. Barn owls also appear rather common, notwithstanding which, some

\* On the 15th of September a similar variety of this species was forwarded to the Editor of 'The Field' by a correspondent in Ireland; but these *lutinos* are of course not common. One in Mr. Bond's collection was obtained some years ago, in Devonshire, we believe, by the Rev. Murray A. Mathew.—ED.

of the peasantry are much startled at the snoring or hard breathing-like sound made by the young after dark, and will not believe it to be produced by birds, but attribute it rather to some supernatural cause. When first heard at a distance, the sound does seem rather strange and unaccountable.

JOHN GATCOMBE.

8, Lower Durnford Street, Stonehouse, Plymouth.

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*Notes on the Extinction of the Moa, with a Review of the Discussion on the Subject, published in the 'Transactions of the New Zealand Institute.'* By W. T. L. TRAVERS, F.L.S.\*

You are doubtless aware that a considerable amount of discussion has taken place, during the last few years, amongst scientific enquirers in New Zealand, as to whether the Dinornidæ became extinct before or since the occupation of the islands by the present native people, and as the question at issue is one of great interest, I have been induced, in consequence of having lately received important information on the subject,—which I propose to give in the sequel,—to review this discussion.

In the year 1871 Dr. Haast, who leads the discussion on the first side, read three elaborate papers on the subject before the Philosophical Institute of Canterbury, in the latter of which he sums up the conclusions to which he professed himself justified in arriving, as follows:—

“1. The different species of Dinornis or moa began to appear and flourish in the post-pliocene period of New Zealand.

“2. They have been extinct for such a long time that no reliable traditions as to their existence have been handed down to us.

“3. A race of Autocthones, probably of Polynesian origin, was cotemporaneous with the moa, by whom the huge wingless birds were hunted and exterminated.

“4. A species of wild dog was cotemporaneous with them, which was also killed and eaten by the moa-hunters.

“5. They did not possess a domesticated dog.

“6. This branch of the Polynesian race possessed a very low standard of civilization, using only rudely chipped stone implements, whilst the Maoris, their direct descendants (by which Dr. Haast evidently meant ‘successors’) had, when the first Europeans arrived in New Zealand, already reached a

\* Read before the Wellington Philosophical Society, 6th September, 1875.

high state of civilization in manufacturing fine polished stone implements and weapons.

“7. The moa-hunters, who cooked their food in the same manner as the Maoris of the present day do, were not cannibals.

“8. The moa-hunters had means to reach the Northern Island, whence they procured obsidian.

“9. They also travelled far into the interior of this island to obtain flint for the manufacture of their primitive stone implements.

“10. They did not possess implements of Nephrite (greenstone).

“11. The polishing process of stone implements is of considerable age in New Zealand, as more finished tools have been found in such positions that their great antiquity cannot be doubted, and which is an additional proof of the long extinction of the moa.”

Many of these “conclusions” will be considered sufficiently startling by those who take the trouble to analyse the grounds upon which Dr. Haast affects to have arrived at them; but, with a view to the sequel, and in order that no injustice may be done to Dr. Haast with reference to such of them as are specially under consideration in this paper, I think it right to extract from his publications the various passages in which he attempts to support them either by argument or evidence.

Dr. Haast, in the ‘Transactions of the New Zealand Institute’ (vol. iv., p. 71), says:—

“Another argument in favour of this supposition—namely, that *Dinornis* must have become extinct much earlier than we might infer from the occurrence of bones lying among the grass—is the fact, proved abundantly by careful enquiries, that the Maoris know nothing whatever about these huge birds, although various statements have been made to the contrary, lately repeated in England; however, as this question stands in close relation to the age of the moa-hunting race, I shall leave it until I come to this portion of my task.

“The testimony that moa-bones have been found lying loose amongst the grass on the shingle of the plains, together with small heaps of so-called moa-stones, where probably a bird has died and decayed, is too strong to be set aside altogether, or to be explained by the assumption that the bones became exposed, as I suggested before, through the original vegetation having been burnt extensively. We are, therefore, almost compelled to conclude that the bones have, in some instances, never been buried under the soil, but remained lying on the surface where the birds died. I cannot, however, conceive that moa-bones could have lain in such exposed positions for hundreds, if not thousands, of years without decaying entirely. Even if

we assume that the birds have been extinct for only a century or so, it is inconceivable that the natives, who have reliable traditions extending back for several hundred years, and of many minor occurrences, should leave no account of one of the most important events which could happen to a race of hunters—namely, the extinction of their principal means of existence. At the same time, the pursuit of these huge birds to a people without fire-arms, or even bows and arrows,—although they might have possessed boomerangs or a similar wooden weapon,—must have been so full of vital importance, excitement and danger, that the traditions of their hunting exploits would certainly have outlived the accounts of all other events happening to a people of such character. The Rev. J. W. Stack, with whom I repeatedly conversed upon this subject, fully agrees with me that the absence of any traditions places an almost insurmountable obstacle in the way of our supposing that the moa-bones found lying on the plains or hill-sides are of such recent origin as their position might at first suggest."

Further on, in the same paper (p. 73), he says:—

"It has been the fashion to assert that the present native inhabitants of New Zealand, the Maoris, are the race who have hunted and exterminated the moa, and there are even natives who declare that their fathers have seen the moa and eaten its flesh. If such assertions could be proved, our researches would have been much simplified. It will, therefore, be my duty to examine the data upon which such statements rest, and to bring, in my turn, what I consider overwhelming evidence to the contrary—namely, that the forefathers of the Maoris not only have neither hunted nor exterminated the moa, but that they knew nothing about it."

In support of the positions thus taken, Dr. Haast quotes not only the Rev. Mr. Stack, but also the Rev. W. Colenso and Mr. Alexander Mackay, a Native Commissioner, all of whom, he tells us, possessed excellent opportunities of obtaining accurate information upon this and other subjects connected with the present New Zealanders. With regard to the Rev. Mr. Stack, he informs us that gentleman did mention the existence, among the Maoris, of a proverb relating to the moa, namely, "He moa kai hau," translated, "a wind-eating moa," in allusion to a supposed habit of the bird of keeping its mouth open when running against the wind—a habit, by the way, which exists in the ostrich, and was only likely to become known, as regards the moa, from direct observation; but he says (erroneously, however, as will appear from the extracts hereafter given from Mr. Stack's own writings on the

subject) that "this was the only trace Mr. Stack could discover in the sayings of the ancient inhabitants relative to the existence and habits of those birds." He then proceeds to detail, at great length, the circumstances under which he alleges that moa-bones and other animal remains had been found in kitchen middens, in what he terms "a moa-hunters' encampment," at the Rakaia, in the province of Canterbury, particularly noting the discovery, amongst these remains, "of quantities of obsidian, identical in lithological character with that obtained near Tauranga."

Tauranga, as you are aware, is in the Province of Auckland, and I think I am justified in asserting that no obsidian has ever been found, *in situ*, in any part of the South Island, or even to the southward of the great volcanic system in the centre of the North Island.

The fact thus mentioned is, as you will find in the sequel, of very great importance when taken in connection with the information recently given to me.

But Dr. Haast, although he mentions the discovery in this encampment of stone implements and other articles of apparent Maori origin, dissociates them, at all events throughout the papers published in 1871, from those which he assigns to the "moa-hunters," arguing, moreover, that it was not till long after the extinction of the moa that the encampment in question was used by the present race. If this fact were really well established, it would be a very interesting one; but a careful consideration of Dr. Haast's own statements has entirely failed to satisfy me that he was justified in drawing the line of demarcation above referred to, or indeed in dissociating the Maori at all from the destruction of the moa.

With respect to the mode in which his supposed moa-hunters killed their prey, Dr. Haast (*Trans. N. Z. Inst.*, vol. iv., p. 86), says:—

"Amongst all the stone implements there was not one from which we might draw an inference how the moa-hunters killed their prey; but, as the birds lived doubtless in droves, they were probably driven by men or dogs towards the apex of the triangle, either to be killed with heavy wooden implements or stone spear-heads fixed to staves, to be snared or to be caught in flax nets. Another method of killing them, if we assume that the moa-hunters were allied to the Australians, may have been by the use of the boomerang, or a similar weapon, to be hurled at their prey."

Upon the question whether his moa-hunters were cannibals, he says (Trans. N. Z. Inst., vol. iv., p. 89):—

“Bearing in mind what the Hon. W. Mantell states in respect to the occurrence of the bones of men, together with those of the *Dinornis*, dog, and seal, in the kitchen-middens of the North Island, I concluded that the moa-hunters must have been cannibals; however, the most careful search, continued for a number of days, has never brought to light the smallest portion of a human bone at the Rakaia. And, although this evidence is merely of a negative character, it is strong enough to induce the belief that the moa-hunters were not addicted to anthropophagy, as Mr. Mantell's observations might suggest. Had the inhabitants of the Rakaia encampment been cannibals, there is no doubt in my mind that, amongst the thousand fragments of bones passing through my hands, at least some of the human skeleton should have appeared to bear witness. Mr. F. Fuller, who lately discovered a moa-hunter encampment in Tumbledown Bay, near Little River, found, close to it amongst some sand-hills, the traces of a cannibal feast; but there was nothing to connect the one with the other.”

And again (at p. 91):—

“Mr. Mantell is reported to have stated that there was evidence that cannibalism prevailed at the time the moas were used for food, but only in the North Island, confirming my observations made at the Rakaia and elsewhere, that the moa-hunters in this island were not Anthropophagi. However, I still doubt very much whether the inhabitants of the North Island, in the same era, were cannibals, as I believe that the same favourable localities, formerly selected by the moa-hunters, were also used by the Maoris as camping-grounds, by which the mixture of the kitchen-middens of both races has been produced. Even were we to admit that the inhabitants of each island had belonged to a different race, or that they had not communication with each other, so that different habits of vital importance had become formed in each of them, the discovery of obsidian in the kitchen-middens of this island clearly proves that such arguments would be fallacious. The pieces of obsidian being of such frequent occurrence, we are obliged to assume that regular communication existed between both islands, and it is difficult to conceive that, under these circumstances, the one island should have been inhabited by cannibals and not the other. Nor could different races have inhabited the two islands during the extermination of the moa, and the southern race have gone to the North Island to obtain the much-coveted obsidian, without fear of being devoured by the more savage tribes inhabiting it.”

With reference to the word “moa,” as used by the Maoris, Dr. Haast (Trans. N. Z. Inst., vol. iv., p. 92) says:—

“I have been told that the present race inhabiting New Zealand must have been cotemporaneous with the *Dinornis*, because the word ‘moa’ forms part of the designation of several localities in New Zealand, but this occurrence might be explained in several ways. In the first instance, it is very possible that the word ‘moa’ in those names is only the alteration of another word in course of time, because words having the same, or nearly the same, sound, are not unfrequent in the Maori language, such as *moa*, a bed in a garden, a certain stone; *moana*, sea; *moa-ta*, to be early; *moe*, sleep or dream; *moho*, a bird; *mou*, for thee; or, *moua*, the back of the neck; or that the natives used the expression to designate localities where moa-bones were principally found. Another explanation might be given by pointing out that the word ‘moa’ is used in connection with other birds. Thus I may quote from the Rev. Richard Taylor’s ‘A Leaf from the Natural History of New Zealand’ (Wellington, 1848), the following expressions:—‘*Moa kerua*, a black bird with red bill and feet, a water hen; *moa koru*, very small rail; *moeriki*, rail of the Chatham Islands.’ And may we not therefore conclude that if the Maoris had known anything of the *Dinornis*, the present representative of the genus,—which, in appearance, form and plumage, most probably closely resembles some of the extinct gigantic forms,—would have been in preference named by them *moa-iti*, or some similar appellation, instead of calling *Apteryx Owenii*, *kiwi*, from its peculiar call; and *Apteryx Australis*, *tokoeke* and *roa*? The fact that they added, instead,—to the names of birds resembling somewhat the domestic fowl,—the prefix *moa*, might be taken as an additional confirmation of the probability that the theories advanced by me are correct. And how can we reconcile the difference in the statements concerning the plumage, which, according to one account, consisted of magnificent plumes on the head and tail, whilst, according to the other, it resembled that of the *Apteryx*? Another point of importance must strike the observer, concerning Maori nomenclature. If the present race had known anything of the *Dinornis*, should we not expect that several and very distinct names would have been preserved to us for the different species? We may safely assume that the moa-hunting races had different names for the huge *Dinornis giganteus*, *D. robustus*, and for *Palapteryx ingeus*, for the smaller and more slender species of *Dinornis casuarinus* and *D. didiformis*, as well as for the stout-set *Dinornis elephantopus* and *D. crassus*, which, moreover, were doubtless distinguished by different habits and modes of life. Instead of that, we find them speaking of the ‘moa’ indiscriminately—a word extensively used all over the Polynesian Islands.”

In the third of the papers above referred to, Dr. Haast criticises the views of Dr. Hector, Mr. Murison, and Mr. Mantell upon the subject under discussion, and, notwithstanding some very cogent



evidence to the contrary, adduced by those gentlemen and others, sums up the discussion by stating the "conclusions" already extracted.

I think it necessary, however, before proceeding further, to call especial attention to the entire absence from these papers of any evidence relevant to the proof of the first, fourth and fifth "conclusions." The first of these Dr. Haast probably adopted in order to support his theory that New Zealand was entirely submerged up to the close of the Tertiary period, and, on its re-emergence, was subjected, during Pleistocene times, to an universal glaciation similar to that of Greenland and the Antarctic lands. But whence he derives the *Dinornidæ* and his wild dog is nowhere even suggested, unless, indeed, the language in which the first "conclusion" is couched admits of the assumption that he believes in special creation; whilst the fourth and fifth involve additional difficulties which are too palpable to need specifying. It would be well if Dr. Haast would supplement his papers on this part of the subject, by giving the evidence or reasoning, as the case may be, which led him to the conclusions in question.

Dr. Haast's statements as to the absence of Maori traditions relative to the moa were in some degree supported by the Rev. Mr. Stack, in a paper read before the Philosophical Institute of Canterbury, on the 5th of April, 1871 (Trans. N. Z. Inst., vol. iv., p. 107), in which the reverend gentleman, after referring to the invasion of the Middle Island by the Ngaitahu, a section of the Ngatikahungunu tribe, some two hundred to two hundred and fifty years ago, says:—

"Ngaitahu, having incorporated the remnants of the two preceding tribes, the traditions of these tribes would become the property of Ngaitahu, and be handed down with the rest of their tribal lore to posterity. Now, while these traditions are full and distinct in everything else to which they relate, and extend as far back as to events that occurred before the migration from Hawaiki, *they only contain very vague and meagre references to the moa.* It is inconceivable that an observant and intelligent people like the Maoris should be without traditions of such exciting sport as moa-hunting, had they ever engaged in it. And these traditions, did they exist, would not be confined to particular localities, but would be met with in every part of these islands in which the remains of the *Dinornis* are found. *I have occasionally heard in the North Island stories of moa-hunts, but they were regarded by all, but perhaps those who related them, as pure fabrications.*

In common with most people, I was long under the impression that the extinction of the moa was an event of recent date, and hastened by the Maori. I took it for granted that the natives only required to be questioned to afford every information regarding its nature and habits, and the causes of its disappearance. Further enquiry, however, has led me to think that the Maoris were not moa-hunters, and that the bones that strewed the plains of Canterbury were lying there at a period anterior to the last migration from Hawaiki."

Mr. Stack, however, says (Trans. N. Z. Inst., vol. iv., p. 108):—

"But how are we to account for any allusions to the moa at all in Maori poetry and proverbs, unless the people were familiar with it? Dr. Thompson, as quoted by the President (Dr. Haast) says, 'That the moa was alive when the first settlers came is evident from the name of this bird being mixed up with their songs and stories.' But Dr. Thompson was probably not aware that the Maoris were familiar with a large land-bird, which they called the moa, before ever they came to New Zealand. The name by which the cassowary is known in the islands is 'moa,' and as it somewhat resembles the Dinornis in form, an exaggerated description of it would be a sufficiently accurate description of that gigantic bird to mislead any one not fully prepared to question the knowledge of the Maoris on the subject, into supposing that they were perfectly familiar with its form and habit. *I remember hearing, when a child, of the beautiful plumes that were found at the top of the cliff which overhung a cavern somewhere on the East Coast of the North Island, where the last of the moas hid itself.* But no one I ever met had seen them. Those who described them had only heard of them from others. *It is quite possible that moa-feathers may have been found and used as ornaments; but it is not necessary to believe they were so, to account for the description the Maoris gave of them.* The feathers of the cassowary are used as ornaments in the islands where they exist, and probably the ancestors of the Maori brought some away with them. These, from their rareness, would be highly prized and carefully preserved, and when all recollection of the Hawaikan moa had faded away would be thought to belong to that moa of which remains were everywhere visible. *In the same way we may account for the saying regarding the toughness of the moa's flesh, which could only be thoroughly cooked with the twigs of the koromiko,* by supposing that it was the flesh of the Hawaikian moa, and not of the Dinornis, that was meant. But, unless the Maoris saw the Dinornis alive, how did they know that the bones they found strewing the earth were the bones of a bird? The largest form of land animal life with which they were familiar on their arrival here was that of a bird which they called a moa. Probably they found many skeletons of the Dinornis lying in such positions as clearly to indicate its form when alive. Being careful observers of Nature, they

would note the resemblance between the skeletons they found here and the skeletons of the moa with which they were acquainted in the islands, and would at once conclude that they were identical, and call them by the same name."

It will be observed that Mr. Stack does not go the same length that Dr. Haast does as to the time which has elapsed since the moa became extinct, although he supports the Doctor in his opinion that its extinction preceded the arrival of the present race in these islands. But whilst he goes no further than this in supporting his leader's "conclusions," he calls upon us to accept a series of very remarkable propositions, which he makes on his own account:—

*Firstly*, that the bones found on the surface of the plains in various parts of the North Island existed there before the introduction of the present race into New Zealand—an event which careful inquiry leads us to carry back to a very remote period.

*Secondly*, that the present race must necessarily have migrated from some place in which either the cassowary or some other bird of the same kind existed, and was so commonly used as food that the very structure of the skeleton was matter of ordinary knowledge amongst the inhabitants.

*Thirdly*, that upon the discovery by the immigrants of the present race of moa-bones on the surface of the plains, they would at once have assigned them to birds similar in structure to, but of immensely greater size than, the cassowary—a notable feat in comparative anatomy which would entitle the Maori who performed it to rank with Owen or Cuvier—and, moreover, that the occurrence of bones under such conditions would lead them to hand down to their posterity exaggerated accounts of the appearance and habits of a mythical bird, of the mode of hunting and cooking it, of the nature of its flesh, and of other matters connected with it which could possess no possible interest for the numberless generations of the Maoris who could never have an opportunity of understanding such stories.

It will, however, be observed in the sequel how naturally all that Mr. Stack has stated fits in with the information which I am about to communicate to you, and how needless it becomes to resort to improbable assumptions in order to apply "the allusions to the moa found in the Maori poetry and proverbs," and the descriptions they give "of the appearance and habits of the birds," and the

fact that "the name of the moa is mixed up with their songs and stories."

On the other hand, Dr. Hector, Mr. Murison, Mr. Mantell, Sir George Grey, Dr. Buller, the Rev. Mr. Taylor, and many others who have enjoyed far greater opportunities of obtaining information on the subject than those who are quoted so approvingly by Dr. Haast, strongly dissent from the views propounded in his papers, and have adduced a large mass of facts relevant to the proof that the extinction of the moa is a matter of comparatively recent date.

In a paper by Dr. Hector, read before the Otago Institute in September, 1871 (Trans. N. Z. Inst., vol. iv., p. 110), in which he described the bones of an embryo moa chick, found with the egg which had contained them; the cervical vertebræ of a moa of large size, upon the posterior aspect of which the skin, partly covered with feathers, was still attached by the shrivelled muscles and ligaments; and a remarkably perfect skeleton, in which portions of the ligaments, skin and feathers were still attached to some of the bones—all of which were discovered in the Province of Otago—the Doctor says:—

"The above interesting discoveries render it probable that the inland district of Otago, at a time when its grassy plains and rolling hills were covered with a dense scrubby vegetation, or a light forest growth, was where the giant wingless birds of New Zealand lingered till latest times. It is impossible to convey an idea of the profusion of bones which, only a few years ago, were found in this district, scattered on the surface of the ground, or buried in the alluvial soil in the neighbourhood of streams and rivers. At the present time this area of country is particularly arid as compared with the prevalent character of New Zealand. It is perfectly treeless—nothing but the smallest sized shrubs being found within a distance of sixty or seventy miles. The surface features comprise round-backed ranges of hills of schistose rock with swamps on the top, deeply cut by ravines that open out on basin-shaped plains, formed of alluvial deposits that have been everywhere moulded into beautifully regular terraces to an altitude of 1700 feet above sea-level. That the mountain slopes were at one time covered with forest, the stumps and prostrate trunks of large trees, and the mounds and pits on the surface of the ground which mark old forest land, abundantly testify, although it is probable that the intervening plains have never supported more than a dense thicket of shrubs, or were partly occupied by swamps. The greatest number of moa-bones were found where rivers debouch on the plains; and that at a comparatively late period these plains were the hunting-grounds of the aborigines can be proved almost incontestably.

Under some overhanging rocks in the neighbourhood of the Clutha River, at a place named by the first explorers 'Moa Flat,' from the abundance of bones which lay strewn on the surface, rude stone-flakes of a kind of stone not occurring in that district were found by me in 1862, associated with moa-bones. Forty miles further in the interior, and at the same place where the moa's neck was recently obtained, Captain Fraser, in 1864, discovered what he described to me as a manufactory for such flakes and knives of chert as could be used as rough cutting instruments, in a cave formed by overhanging rocks, sheltered only from the south-west storms, as if an accumulation by a storm-stayed party of natives. With these were also associated moa-bones and other remains. Again, at the top of the Carrick Mountains, which are in the same district, but to an altitude of 5000 feet above the sea, the same gentleman discovered a gully, in which were numerous heaps of bones, and along with them native implements of stone, amongst which was a well-finished cleaver of blue slate and also a coarsely-made hornstone cleaver, the latter of a material that must have been brought from a very great distance.

"Still clearer evidence that, in very recent times, the natives travelled through the interior, probably following the moa as a means of subsistence, like natives in countries where large game abounds, was obtained in 1865-6 by Messrs. J. and W. Murison. At the Maniototo Plains bones of several species of Dinornis, Aptornis, Apteryx, large rails, Stringops, and other birds are exceedingly abundant in the *alluvium* of a particular stream, so much so that they are turned up by the plough with facility. Attention was arrested by the occurrence, on the high-ground terrace which bounds the valley of this stream, of circular heaps composed of flakes and chips of chert, of a description that occurs only in large blocks along the base of the mountains at a mile distant. This chert is a very peculiar rock, being a 'cemented water quartz,' or sandy gravel converted into quartzite, by infiltration of silicious matter. The resemblance of the flakes to those they had seen described as found in the ancient kitchen-middens, and a desire to account for the great profusion of moa-bones on a lower terrace shelf nearer the margin of the stream, led Messrs. Murison to explore the ground carefully, and, by excavating in likely spots, they found a series of circular pits partly lined with stones, and containing, intermixed with charcoal, abundance of moa-bones and egg-shells, together with bones of the dog, the egg-shells being in such quantities that they consider that hundreds of eggs must have been cooked in each hole. Along with these were stone implements of various kinds, and of several other varieties of rock besides the chert which lies on the surface. The form and contents of these cooking-ovens correspond exactly with those described by Mantell, in 1847, as occurring on the sea-coast; and among the stone implements which Mantell found in them, he remembers some to have been of the same chert which occurs *in situ* at this

locality, fifty miles in the interior. The greater number of these chert specimens found on the coast are, with the rest of the collection, in the British Museum. There is another circumstance which incidentally supports the view that while the moas still existed in great numbers the country was open and regularly traversed by the natives engaged in hunting. Near the old Maori ovens on the coast, Mantell discovered a very curious dish made of steatite, a mineral occurring in New Zealand on the west coast, rudely carved on the back in the Maori fashion, measuring twelve by eight inches, and very shallow. The natives at the time recognised this dish by tradition, and said there were two of them. It is very remarkable that, since then, the fellow-dish has been discovered by some gold-diggers in the Manuherikia Plain, and was used on an hotel counter at the Dunstan Township as a match-box, till it was sent to England, and, I am informed, placed in a public Museum in Liverpool."

(To be continued.)

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*La Girelle* (Coris Julis, Günther) at the Crystal Palace Aquarium.

By E. HOWARD BIRCHALL, Esq.

Two specimens of this lovely little fish—the rainbow wrasse of Yarrell, Couch, and Donovan—have recently arrived here from Naples. The species has had a place in the British list, on the authority of Donovan, since 1802, when a specimen was taken by trawlers in Mount's Bay, and luckily brought ashore. As its capture has not since been recorded, its appearance on the Cornish coast may have been exceptional; but as the custom of trawlers is, after every haul, to pitch everything overboard which they do not consider marketable at Billingsgate, perhaps the exception may consist in the fact of their having brought one to land, and not in its capture. It is common in the Mediterranean, and is found in the neighbouring parts of the Atlantic, as far west as the Canaries, while its extreme northern range would appear to be our own southern shores.

The old naturalists all speak of it as common in the Mediterranean, though they differ in their accounts of its habits. Many of them give it a bad name for ferocious and poisonous qualities; and Rondelet states, in confirmation, that he has been attacked and bitten on his legs by shoals of them when bathing.

The naturalists of by-gone centuries seem to have had a mania for discovering venomous and other disagreeable qualities

in various innocent and harmless creatures, and their accounts of La Girelle read like bitter calumnies, when one sees the pretty, timid, little fellows swimming about in their miniature ocean, carefully avoiding their fellow-guests, and darting instantly out of sight at the first symptom of danger. Several times I have put my hand in the water to try and attract them, always with the same result—an instant stampede. It is not often, however, that they are to be seen at all; for being of the quietest and most retiring nature, their usual habit is to hide deep in a bed of shingle,—preferring shingle to sand,—from which they can only be dislodged by violence. When one of them is disturbed, it darts out of its stony bed, and vanishes like a flash of lightning. Presently it may be discovered in some dark nook among the rocks, where, lying hidden till it thinks all is again quiet and its enemy has disappeared, it comes out, and swimming quietly round and round, carefully avoiding the other tenants of the tank, it makes a *reconnaissance* of its old quarters. Gradually approaching closer and closer it at last rests on the bottom, as if to make sure that all is right; then raising itself a few inches, and taking a final observation, it poises for a moment head downwards, and plunges like an arrow amongst the stones. The dive is so wonderfully quick that, after placing itself in position, it simply disappears, a slight disturbance of the shingle as it settles comfortably down being all there is to show where the fish has gone.

Cuvier and Valenciennes say of it:—"La Girelle est un poisson très-commune dans la Méditerranée, et dont on trouve un grand nombre de variétés, qui quelques zoologistes ont essayé de separer en espèces. Elles font l'ornement des marchés des ports de cette mer, car leurs couleurs, très-variées, ne le cèdent en rien, par leur éclat et leur beauté aux poissons les plus brillants que les mers des tropiques nous envoient." Speaking of its habits they write:—"Ces poissons sont littoraux, vivent parmi les roches madréporiques, où ils trouvent en abondance des mollusques, des oursins et autres animaux à test dur, qu'ils brisent facilement avec les dents fortes et coniques." This agrees with my own observations.

La Girelle is greedy for small Crustacea. I have seen it chase a Cook wrasse (*Labrus mixtus*) ten times its own size, which was swimming about with a crab in its mouth, round and round a long tank, tearing off the legs of the unfortunate crab as they dangled from the mouth of its captor.

There seems to be much doubt which species of wrasse was known to the Greeks under the name of "Julis," probably various species, some of which were said to be poisonous, while of others they thought it not easy to do justice to the flesh: "to speak of its trail as it deserved was impossible, and to throw away even its excrement, a sin." Speaking from experience, I can say that wrasse is excellent eating, and at the present day they are largely consumed in Southern Europe, where they form the chief ornaments of the fish markets, *Coris Julis* being known at Naples as "Cazzillo di re."

E. HOWARD BIRCHALL.

Crystal Palace Aquarium,  
October 20, 1876.

#### Ornithological Notes from the Isle of Wight.—

*Pomarine Skua*.—A bird of this rare species was shot on the 9th of September, by Mr. W. Smith, on Black Pan farm, in the north of the island, when following the plough, feeding, I am told, in the furrows with the gulls! The sex was not ascertained, but it is apparently a female (or an immature male). Yarrell's figure and description would, with slight alteration, answer for this specimen. It was sent to me for identification by Mr. F. Smith, the Newport taxidermist. Total length, about fifteen inches, the two central tail-feathers exceeding the rest by three-quarters of an inch. General colour of a brownish black, tinged with gray, most of the feathers slightly edged with grayish white. The closed wing reaches to the end of central tail-feathers. What is most remarkable is the parti-coloured web-foot, the half next the tarsus being of a flesh-colour, the rest dusky. The tarsus, which is two inches in length, dusky, having a greenish tinge. The Pomarine skua has been included in our list as having occurred in the island some thirty years since, but the author of the statement does not tell us where, or by whom, it was shot. [See Zool. 978.—ED.]

*Kite*.—Towards the end of August I was informed by a friend who has a fair knowledge of birds that he had observed one on the downs with a forked tail, which, from the description, I thought could be no other than the kite, of which on the 4th of September I had ocular proof. A large bird with elongated tail having been seen in the distance, it was kept in view until passing overhead, when, though at a great height, I observed that the tail was forked. This, I believe, is the first recorded occurrence of the kite in the island.

*Spotted Crake*.—A handsome specimen, in perfect plumage, has lately been sent to Mr. Smith for preservation.—*H. Hadfield; Ventnor, Isle of Wight, September 21, 1876.* [When, where, and by whom shot?—ED.]



**Scarce Birds at Torquay.**—Yesterday afternoon, while in Torquay, I called at Shopland's, the birdstuffer, to enquire if any uncommon species had been brought to him lately, and was informed that, within the present month, he had received one hoopoe, one little gull, two Sandwich terns, one Richardson's skua, one rednecked grebe, and one lesser tern. All these birds were obtained in Torbay; and, strange to say, the little gull and Sandwich terns were shot the same day by two gentlemen who were quite unacquainted with their value or rarity, and one of the terns was ordered to be made up to adorn a lady's hat! How often rare birds fall into the hands of people who do not appreciate them, and what numbers must be thrown away unnoticed and unrecorded! I saw the little gull and remaining Sandwich tern, and both were in good plumage and cleanly shot, although the larger wing and tail-feathers of the latter were somewhat worn. Besides these birds, I was shown a tern I could not quite make out, but believe it to be an immature black tern: it was killed a few days ago on the Dorset coast.—*Gervase F. Mathew; H.M.S. 'Britannia,' Dartmouth, October 18, 1876.*

**The Time of Day at which Birds lay their Eggs.**—Mr. Boyes (Zool. S. S. 5115) again calls attention to a paragraph in the 'Zoologist' for 1862, as quoted by Mr. Cordeaux, in which Dr. Saxby is made to assert, as the result of careful observation of twenty species of our insessorial birds, that as a general rule they lay their eggs between the hours of 7 and 12 P. M. I have looked through the indices to the MS. journals, and can find no clue to the matter, but am strongly of opinion that Mr. Boyes' surmise is correct, and that my brother must have written, or intended to write, A. M. and not P. M. Indeed it is hardly conceivable that observations could by any possibility be made on which to found the assertion as quoted. The subject had evidently received considerable attention from him, one of the last pages of the MS. of his 'Birds of Shetland,' written in 1873, having a remark upon the irregularity of the guillemot in its hour of laying, as exceeding that of any other bird known to him. I have been told by a very accurate observer that among domestic poultry and caged birds it is the rule that each successive egg of the batch is laid at a later time in the morning than the previous one.—*Stephen H. Saxby; East Clevedon, Somerset, October 2, 1876.*

**On the Causes of Variation in Species.**—In Mr. Rowley's 'Ornithological Miscellany' (part v., p. 15), Mr. Sharpe says, "No doubt isolation has a great deal to do with variation in the barn owls, the tendency to a dark colour being a character of all the insular forms, excepting the Jamaican and British birds, which are extremely light-coloured." I do not think, however, that a tendency to a dark colour in some species is accounted for satisfactorily. How can we account for the dark continental form of the barn owl? How do we account for the very dark North Russian form of *Hirundo riparia*, while other species, such as *Parus cinctus*, *Pratincola*

rubicola (indica), *Parus borealis* (Kamschatkensis) have, as with most continental forms, a tendency in the opposite direction—towards a *mealier* phase or plumage? Actual melanism is caused, in some instances, by particular kind of food, especially in caged examples. In a state of nature also may not the same be caused by the superabundance of some particular kind of food to which the species, or perhaps certain individuals of a species, are specially partial. I wonder if feeding on mosquitos makes the sand martin black or dark-coloured in North Russia!—I know they made the unprotected faces of our captain and his mate very red by feeding on *them* in the space of a very few hours. Generations of sand martins constantly feeding on mosquitos may, by a process of gradual poisoning, have become changed in appearance, as people become who eat arsenic. When projecting a trip to Persia—which, however, was not undertaken—I was asked to bottle as many of the poisonous bugs of the country—I forget their name—as I could, by a chemist who desired to analyse the poison. Has anyone ever analysed the poison to be found in specimens of *Rae's Culex damnabilis* (*vide* *Rae's 'Land of the North Wind'*)? Possibly, if it could be done, something sufficiently strong to turn people's faces black—let alone little birds like sand martins—would be discovered. Your readers may adopt the above theory or not, as it suits their own ideas; but my opinion, at all events, is that *Rae's* name should have priority. I do not wonder at the sand martins—poor little things!—getting black.—*John A. Harvie Brown; Dunipace House, Larbert, N. B., October 16, 1876.*

**Golden Eagles trained to capture Wolves and Foxes.**—In 'Nature' for August 24, there is an extract from a letter by Dr. Finsch, who, together with Dr. Brehm and Count Waldburgzeit, is at present engaged in the scientific exploration of Southern Siberia, under the auspices of the German Arctic Society. The letter dates from Lepsa, near the Balkash Lake, May 13, and the following occurs in the extract:—"Numbers of Argali were seen running on the mountains, and we proposed for the next day an Argali hunt. The hunting party offered a strange picture on the next morning; there were fifty Kirghiz chiefs on horseback, many of them holding golden eagles on their hands. These birds are trained here to catch the wolf and fox, and they acquit themselves excellently of their task, except in spring, when, their minds being taken up by love-thoughts, they are unfit for work." May I enquire if the training of golden eagles to hunt has ever been successfully tried in this country, or if these fine birds are educated by man to capture wolves and foxes in any other portion of the globe?—*R. M. Barrington; Fassaroe, Bray, County Wicklow, September 13, 1876.*

[Several such instances will be found mentioned in Mr. Harting's 'Ornithology of Shakespeare,' pp. 36, 37.—ED.]

**Goshawk in Lincolnshire.**—The goshawk (*Astur palumbarius*, Linn.) is now so rare a visitant to our shores that any occurrence is worth putting

on record. I recently purchased one, shot on the 23rd of May, 1871, by the keeper on Mr. Chaplin's estate at Tathwell, near Louth, in North Lincolnshire. This example is immature, and apparently in the plumage of the second year.—*John Cordeaux; Great Cotes, Ulceby.*

**Gregarious Habit of the Longeared Owl.**—I had written a note for the 'Zoologist' on the above when I read one by Mr. J. H. Gurney, jun., in the March number (S. S. 4831), so I am glad to add my testimony to that gentleman's observation. My note was written in connection with "bird-screens," for which there appears to be such a mania that I fear we shall lose some of our harmless indigenous birds. Numbers of owls, kestrels, &c., are destroyed for the gratification of this silly fashion, and I hope the traffic will be discouraged, for so long as people give great prices for such things the birds will be always forthcoming, and it seems a pity to destroy useful birds for so trumpery a purpose. The owls are likeliest to suffer in this slaughter, as both the long- and short-eared species are gregarious in winter. Should a company of long-eared owls be met with, the whole can be easily shot; for, as I have seen when a cover has been driven, they only fly a few yards on the discharge of a gun. When disturbed by the beaters, and five or six are on the wing together, they resemble large moths, some of them flying out into the open as if lost, and after giving a turn or two in an unsettled manner, they return and pitch on the fir-branches close to you, turning their heads about and winking in their grotesque manner. The short-eared owl is also met with in companies, and I have on two or three occasions, when out shooting here, found nearly a score together, no doubt attracted by a plentiful supply of food—they were on waste ground where the coarse wet grass was tracked and tunnelled in all directions by the short-tailed field vole. I left them unmolested, but I daresay, had anyone been so disposed, every bird might easily have been shot.—*F. Boyes; Beverley, March, 1876.*

PS. The above, as will be seen, was written a long time ago, but had got mislaid.—*F. B.*

**Gregarious Habit of the Longeared Owl.**—The able reviewer of the 'Birds of the North-West,' after remarking that sometimes as many as a score of shorteared owls may be flushed in winter, goes on to say, "but we have no other owls in our list which congregate;" and then he adds, "Dr. Coues [quoting Mr. T. G. Gentry] relates an instance of the longeared owl once forming a community" (Zool. S. S. 5074). Whether the American longeared owl be distinct from the European or not, it appears that this occasional gregarious habit is not confined to it alone, for Mr. F. Norgate, in one of the most interesting papers which has appeared in the 'Transactions' of the Norwich Naturalists' Society (vol. ii., part 2, p. 205), tells us of a flock of fifty which, on reliable authority, were seen at Stratton, near Norwich, in May, 1873. I have much pleasure in bringing this fact in the economy of

this species to the notice of the reviewer, which I have no doubt will be new to many others.—*J. H. Gurney, jun. ; Nothrepps, Norwich.*

**Late Fieldfares.**—In the 'Zoologist' for October (S. S. 5106), Mr. Stevenson records the occurrence of a late fieldfare. I may also state that I never knew their migration take place at so late a date as it did this year. Near this village are a few trees which fringe a small stream, on the tops of which I might say, without the least exaggeration, that there were thousands assembled in the evenings of the last few days of April. At their rendezvous they kept up an incessant chatter. They all disappeared on the 1st of May.—*E. P. P. Butterfield ; Wilsden, October 12, 1876.*

**Blackbird adopting a Young Sparrow.**—On the 17th of June last I found a young sparrow half dead on the ground, having fallen out of its nest. It was entirely without feathers, and seemed to have been out of the egg about two days. I took it up, and, out of curiosity, put it into the nest of a blackbird which contained four quite fresh eggs, never in the least expecting that it would live; but upon looking at it on the 19th I found it quite lively and pretty well fledged, and grown a great deal, but there was only one of the blackbird's eggs left. On looking into the nest on the 21st I found that the sparrow was not there, and I suppose it had flown. Is not this unusual?—*Robert M. Christy ; 20, Bootham, York, Sept. 21, 1876.*

**Robin nesting in a Room.**—A pair of robins built their nest, and laid eggs in it, on the top of a clock in the parlour of a man named Clark, at Stanford Rivers, in Essex. Unfortunately his wife took the nest and flung it away with the eggs. The old birds used to come into the room by the door and window, and were very tame. Some time afterwards a single egg was found on the top of the clock without any nest. This egg is now in my possession.—*Edward H. Christy ; Oliver's Mount, Scarborough.*

**Wood Wren in Perthshire, Ross-shire and Caithness.**—In the 'Zoologist' for October (S. S. 5122) it is stated that the wood wren has not been recorded as having been observed to the north of Inverness, until the note by Lord Clifton of its occurrence at Kildonan. I find that this warbler is mentioned by Mr. E. T. Booth in his recently-published 'Descriptive Catalogue of British Birds in the Dyke Road Museum, Brighton,' as being particularly numerous in many of the wildest glens of Perthshire, Ross-shire and Caithness.—*H. Cooke ; Brighton, October 9, 1876.* [This is so: the statement occurs at p. 107 of the Catalogue, which unfortunately has no index.—ED.]

**Does the Common Starling rear Two Broods in One Season?**—A discussion on this subject was carried on in the 'Field' newspaper some time ago, and though I have no wish to reopen it and transfer it to the 'Zoologist,' I still wish to establish a fact in connection with it relative to these birds in this district. I believe Mr. Stevenson first mooted the point, and it ended, as discussions often do, in a draw. I had my own opinion on the subject at the time, but hesitated to give it until I had placed it beyond a

doubt by careful observation of the breeding season just passed, and now that the controversy is closed in the 'Field' it may not be out of place if I inform Mr. Stevenson that, whatever may be their custom elsewhere, the starlings at Beverley do not rear two broods in a season. These birds are very numerous here, and as soon as the young are hatched the parent birds may be seen hurrying from all sides into the town with food; and to give some idea of the quantity reared in Beverley, I may say that I placed myself on one of our commons on the west side of the town, and watched the constant flying backwards and forwards of the old birds, and though I and a friend stood a long time, at no period of our stay could ten seconds be counted before one or more birds passed us either to or from the town—and very frequently five, six or seven were passing at the same time—procuring food from this pasture alone. This fact proves that these birds hatch off very nearly at the same time, so that a mistake is well nigh impossible. As soon as the broods are able to fly the old birds take them away into the commons and grass lands, where they may be seen in large flocks, and the hurrying to and fro is ended for the season, and though a few—only a very few—are seen carrying food afterwards, they are no doubt birds that have had their nests destroyed from some cause or other, such as house-painting, spout-cleaning, &c.—*F. Boyes.*

[A writer in 'The Field,' by means of a marked starling, established the fact that this species does, at least occasionally, rear two broods in one season.—*ED.*]

**Chough, Curlew Sandpiper and Little Stint at Portrush.**—My friend the Rev. George Robinson, rector of Tartaraghan, Armagh, informs me that during November last his sons killed several choughs, a large number of curlew sandpipers, and four little stints at Portrush.—*John Gatcombe; October 7, 1876.*

[It is to be regretted that the choughs were killed, for in the last few localities in the British Islands where this species is found it is becoming rarer every year. In many places it is being ousted by the jackdaw.—*ED.*]

**Late Nesting of Swift.**—On the 2nd of September I was at Torrington, North Devon, and when in one of the principal streets was surprised to observe a swift repeatedly fly into a hole beneath the eaves of a thatched house, where, no doubt, she had her young. Surely this was very late for a swift to be nesting, for they usually leave us about the 14th of August. I watched for some time, but believe there was only one bird attending the nest, otherwise I should most likely have seen both together. The day was rather cold, with a strong breeze from the north-west.—*Gervase F. Mathew; H.M.S. 'Britannia,' Dartmouth, October 7, 1876.*

**White Martin.**—A white martin was observed for several days, in company with many others of ordinary hue, hawking for flies over the surface of the Torridge near Torrington, the last week in August.—*Id.*

**Phasianus torquatus = P. decollatus?**—A Phasianus torquatus in my aviary, which before its moult had a remarkably broad white collar round the neck, has now apparently completed its moult, and has entirely lost the collar, not a white feather remaining: it is now, in fact, the Phasianus decollatus of Elliot's 'Phasianidæ.' May not his P. decollatus prove to be either a skin of P. torquatus in a similar state of moult, or that the P. torquatus occasionally loses the collar altogether and becomes a P. decollatus? In other respects the bird appears to have recovered his full plumage, though I think the light feathers on the crown of the head are not so marked. Should the white collar reappear within the next month I shall at once write to inform you.—*John W. G. Spicer; Spye Park, Chippenham, Wilts, October 1, 1876.*

PS.—Since writing to you on the above subject, I find my P. torquatus is rapidly assuming the white collar.—*J. W. G. S.; October 14, 1876.*

**Whimbrel in Wiltshire.**—I saw here, on the 17th of May, a whimbrel (*Numenius phaeopus*), in the flesh, which had been shot out of a flock of six on May 13th, near Berwick Bassett, some seven miles from here, by a labourer who was scaring birds. It was an adult male, in very fair plumage, and extremely fat. Its gizzard contained the remains of earthworms with a blade or two of grass, and a few small stones. According to the Rev. A. C. Smith's 'Ornithology of Wilts,' this species has only occurred once before (in 1838) in this county.—*T. Graham Balfour; Cotton House, Marlborough, Wilts, October 6, 1876.*

**Woodcock migrating in July.**—In July, a few years ago, I had brought to me a woodcock which had struck itself against the telegraph-wires near Beverley, breaking its beak and cutting a deep hole into its breast. It was a bird of the year, in capital condition, and weighed twelve ounces. I had an idea at the time that it had been bred in the neighbourhood, but I have "nested" through a great many woods in East Yorkshire, and I have never as yet been able to establish the fact of its breeding. The birds will sometimes linger late in the spring; in fact, whilst the woodcocks are nesting in Scotland, others, which have been, perhaps, far to the southward, are only just passing over Yorkshire, or resting, waiting for favourable winds to carry them away to the north. An easterly wind, whilst it always brings them on the Yorkshire coast in the autumn, just as surely retards their journey in the spring. The spring of the present year added additional testimony to this very old and well-known fact, for the birds were detained to an unusually late period, and I should not be greatly surprised to hear that some very few had nested, as they were evidently paired, and as evening drew on they issued out of the coverts and toyed and chased each other round the woods, uttering their peculiar breeding cries. Though I have said I should not be greatly surprised at hearing that some very few had nested here, up to the present I have not heard of a single

instance, and perhaps none have done so; therefore if, when they are detained so long, none do breed in this district, it is highly probable the bird above mentioned may have been a migratory one. But what does your valued correspondent, Mr. Gurney, jun., wish us to understand in speaking of a woodcock found on the shore at Beeston, in Norfolk, about the end of July, when he says, "The inference is that it was attempting to migrate in the summer time, at a date when no migration is *known* to take place of this or any other British bird"? This must surely be a *lapsus plumæ*, and should be passed over quietly, like a similar one, in speaking of swifts, "they are slow flyers, in spite of their long wings."—*F. Boyes.*

**Great Snipe in Perthshire.**—A friend who was shooting, in the third week of August, over some extensive moors, eight miles north of Dunblane, flushed a pair of great snipe (*Gallinago major*, Gmelin). He did not, however, succeed in getting a shot. The keeper, a most intelligent man of his class, told him they frequently see them on this moor, and he has flushed them all the year round. I was shooting over the same ground in September, but did not come across any of the "big solitary," although I looked the ground over somewhat carefully where they had been seen. I brought away, however, as proof positive of their occurrence, part of the skull and upper mandible of one shot during the previous season in the same locality. On the 7th of September I saw a remarkably fine example of *Motacilla alba* on the grass, within a few feet of the Lodge door.—*John Cordeaux.*

**Solitary Snipe, Hoopoe and Leach's Petrel in Cornwall.**—A specimen of the solitary snipe was procured last week in the neighbourhood of St. Austell: I am told that its weight was fully eight ounces. The hoopoe does not frequently favour us with its visits, but scarcely a spring passes without specimens turning up. Within the last week three hoopoes were shot in this immediate neighbourhood. A forktailed petrel was found dead here: this is a rare bird with us, only a few specimens having been obtained at long intervals.—*Edward Hearle Rodd; Penzance, October 21, 1876.*

**Little Crake at Hastings.**—In writing of the little crake in your last number (Zool. S. S. 5126) I omitted to state, not having the 'Zoologist' by me, that it was obtained the same day but one of the same month as our other Hastings specimen, which was picked up—not by a cat, but by a boy—on the 17th of April, seventeen years ago (Zool. 6537). In spite of this singular coincidence, two birds could hardly differ more in plumage, the example of 1859 being a type of the blue phase of colour, while that of 1876 is, as already stated, in the brown phase.—*J. H. Gurney, jun.*

[The latter was no doubt the younger bird; the change in plumage in this species being analogous to that which is observable in the common moorhen.—*ED.*]

**Green Sandpipers near Beverley.**—Every year in August, as regularly as the month comes round, I hear the well-known whistle of the green sandpiper as—generally single birds and usually in the day time—they are passing over this district. From the beginning of August until the spring they are more or less frequently met with here in the shallow drains, and occasionally on the sea-coast. They are of course most plentiful in early autumn, getting scarcer as winter approaches, and the few stragglers found in severe weather have probably come from other districts. They resemble snipes in this respect, that, having become located in a certain place, they are very loth to leave, and generally remain until shot. I have never either seen or heard of one having been shot in this district at any other period of the year than that above mentioned; but Mr. Roberts, of Scarborough, states that he has received these birds, shot at Hunmanby, in June, and which statement has, I believe, appeared in one or two works on Ornithology. I am sorry to say that my endeavours to establish the fact of the green sandpiper breeding in East Yorkshire have hitherto failed. I know the present keeper at Hunmanby well, and I have asked him particularly, both this June and last, to watch carefully for these birds, and, should they make their appearance, at once to let me hear about it; but he assures me that no such birds are to be found there at that season, so I fear the late keeper—Roberts by name, and whose address I have never been able to obtain—has shot the birds most likely to have bred in England. Many statements have been made from time to time expressing belief that these birds do breed here, yet they are always without proof, and are most likely to mislead; as, for instance, Dr. Bree, in the 'Field,' some time ago, stated he had long been of opinion that these birds bred here, yet he never advanced a single bit of testimony in support of his statement. Mr. G. F. Mathew, too, in the 'Zoologist' (S. S. 4159), when mentioning having seen three of these birds near Instow in August, after saying two of them seemed to possess much lighter plumage than the third, adds, "and I have no doubt were bred somewhere in the neighbourhood." Of course these gentlemen know these statements go for what they are worth, and I hope they will not think that I have turned critic. I only mention them lest they should mislead younger naturalists, for, shorn of these and many other similar statements, I believe the fact remains that up to the present time it has not been proved that these birds have ever bred in this country.—*F. Boyes.*

**Rust-colour on the Breast of Teal.**—I think Mr. J. H. Gurney, jun., in referring to the teal mentioned by Mr. Selater (S. S. 4816) as "having its breast so red as to have the appearance of being stained with blood," seems to consider it rarer than it really is. I have seen the same colour, though not in such degree, not only on the teal, but also on the common wild duck, pintail, pochard, &c. By far the most rufous specimen I ever came across



was an old male common pochard shot in the spring, and an idea struck me—was it an abnormal change to summer plumage?—*F. Boyes*.

[We have noticed this frequently in the case of the common pochard; while the rust-colour on the head and neck of the wild swan has often attracted attention.—ED.]

**Summer Plumage of the Little Grebe.**—I am quite of the opinion of Mr. J. H. Gurney, jun. (Zool. S. S. 5047), that Mr. Corbin's bird is a little grebe, though not, as Mr. Gurney says, in summer, but in spring, plumage. I mention this because Mr. Gurney appears to be not very clear on the summer plumage of the bird, judging from his mention of the one in Mr. Bond's collection. He is quite correct in saying the little grebe is much darker in March and April than in the winter time, but I may add not nearly so dark as later in the summer, and here is where I think he has not expressed himself so clearly as he generally does. I have one which may be said to be perfectly black except the throat, which is a beautiful rich dark chestnut. I had another one like it, which I gave away a short time ago, and I always understood that this was really the full summer plumage of the little grebe.—*F. Boyes*.

**Manx Shearwater** (*Puffinus anglorum*, Temminck) **on the North-East Coast.**—These birds appear to have been more than usually numerous on the east coast during the autumn. There were several at sea off Flamborough Headland on the morning of August 1st.—*John Cordeaux*.

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**Swordfish in the River Parrett.**—On the 25th of September a fine swordfish was taken at a place called Black Rock, near the mouth of the River Parrett, and brought for exhibition to Bridgwater, where I had the pleasure of examining it.—*John Gatcombe*.

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**Loligo media.**—An individual of this species was captured in Mill Bay on the 9th of August, being found at low water in a shallow pool, by Mr. Johnson, jun., of the Royal Hotel. When approached it did not dart away, but retreated by a reversed action of the fin-like membranes, of which it has one pair only. When inspected by me it was in a bucket of water, and a remarkable looking animal it appeared; but the most striking feature is its transparency, so that the action of the heart can be observed. It swims gracefully and buoyantly, propelled by the fin-like membranes, which are worked either backwards or forwards, according to circumstances, but when undisturbed it lies passive. On revisiting the shore the following morning I found that it had not outlived the night, though the water had been renewed; but it may have sustained injury in the capture. I have

not met with it before on this coast. Its length is two inches and three-quarters; extreme width seven-tenths of an inch, the mantle gradually tapering to the fin-like membranes near the tail, which are triangular in shape, half an inch in width and the same in depth. The eye large and prominent for four-tenths of an inch in diameter; pupil black; iris yellow; mouth placed far back; lip oval in shape and fleshy; throat very small. General colour white; central under parts purely so; anterior thickly spotted with reddish brown; posterior more minutely so; head spotted, but not blotched like the back. The arms, or tentacular prolongations, misnamed "feet," are not unlike the barbels of some fishes—the rockling, for instance; there are ten of them, distributed in three rows—six in the upper, two in the centre, and a pair beneath. The upper exterior ones, which are the widest, are three-quarters of an inch in length, irregularly spotted, and margined on the inner edge with circular whitish lobes; the second pair are half an inch long, spotted but not fringed; the third four-tenths of an inch, similarly marked, but are more slender; the middle pair measure one inch and seven-tenths, and have two rows of minute reddish brown spots; the pair forming the lower row are three-quarters of an inch in length. Though Dr. Carpenter refers to the "feet" as important locomotive organs, and remarks that it is by them and the fin-like expansions that progress is chiefly accomplished, my observations lead me to believe that the arms are not generally used as propellers; however, the upper exterior pair, which are comparatively wide and lobed, may act as fins on occasions, but were, in this instance, drawn in and contracted like the rest, so as to appear like barbels fringing the mouth.—*Henry Hadfield; Ventnor, Isle of Wight, August 16, 1876.*

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### Proceedings of Scientific Societies.

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#### ENTOMOLOGICAL SOCIETY OF LONDON.

October 4, 1876.—Sir SIDNEY SMITH SAUNDERS, C.M.G., Vice-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. 172; presented by the Society. 'Journal of the Linnean Society (Zoology),' nos. 64 and 65; by the Society. 'Journal of the Quekett Microscopical Club,' no. 32; by the Club. 'The Zoologist' and 'Newman's Entomologist' for October; by the Representatives of the late Edward Newman. 'The Entomologist's Monthly Magazine' for October; by the Editors. 'Nature,' nos. 358—361; by the

Publishers. 'The Naturalist: Journal of the West Riding Consolidated Naturalists' Society,' no. xv.; by the Editor. 'A Monograph of the British Species of Phænusa;' by the Author, Peter Cameron, Esq. 'Description of a new Species of Phasmidæ;' 'Description of a new Species of Cetoniidæ;' 'On the Femoral Brushes of the Mantidæ and their Function (Abstract);' by the Author, J. Wood-Mason, Esq. 'Proceedings of the Linnean Society of New South Wales,' vol. i., part 2; by the Society. 'L'Abeille,' no. 170; by the Editor. 'Annales de la Société Entomologique, de Belgique,' tome xix., fasc. 1; by the Society. 'Le Helicopsyche in Italia; Lettera agli Entomologi Italiani;' by the Author, Carl von Siebold. 'Stettiner Entomologische Zeitung,' 37 jahrgang; by the Society. 'Transactions of the American Entomological Society,' vol. iii.; by the Society.

By purchase:—'Ueber neue indische Chernetiden,' von Ant. Stecker. 'Ueber bläschenförmige Sinnesorgane und eine eigenthümliche Herzbildung der Larve von Ptychoptera contaminata, L.,' von Carl Grobben.

#### *Election of a Member.*

Mons. Alfred Preudhomme de Borre, of Brussels, Secretary of the Belgian Entomological Society, was balloted for and elected a Foreign Member.

#### *Exhibitions, &c.*

Mr. Bond exhibited, on behalf of Mr. N. Cooke, of Liscard, near Birkenhead, a female variety of *Hepialus humuli*, pale in colour, and with the usual markings; three fine specimens of *Crymodes exulis*; fifteen very fine dark (some nearly black) specimens of *Epunda lutulenta*; and six specimens of the new Tortrix, *Sericoris irriguana*. All the above were taken near Loch Laggan this season.

Mr. Stevens mentioned that a specimen of *Callimorpha Hera* (the Jersey tiger-moth) had been taken at St. Margaret's Bay, near Dover.

The Secretary read a note from the Rev. Fitzroy Kelly Lloyd, of Pittenweem, N. B., enclosing for inspection a worm measuring two inches in length, extracted from the abdomen of an earwig. Mr. Pascoe said that it was one of the Nematode worms, and was probably a *Filaria*.

Mr. Forbes exhibited a weevil (evidently not indigenous to Britain), taken alive amongst some Orchids at Highgate, supposed to have been imported from Ecuador. Mr. Pascoe pronounced it to be a *Cholus*. He subsequently gave the following diagnosis, under the name of

#### CHOLUS FORBESII.

*C. ovatus*, niveo-squamatus, maculis nudis aterrimis variegatus, quarum una in medio elytrorum majuscula, supra rugoso-punctatus; rostro pedibusque fortiter punctatis. Long. (rostr. excl.) 5 lin.

Mr. William Cole exhibited numerous bred specimens of *Ennomos angularia*, bred from eggs laid by the same female, showing slight differences according as the larva had been fed on oak, hawthorn, lime or lilac, and comparing them with a number of specimens taken at large. In all cases the yellowish tint of the captured specimens was more decided.

Mr. Enock exhibited microscopic slides containing some beautiful preparations of *Polynema ovulorum*, one of the *Proctotrypidæ*, and other minute Hymenoptera.

A letter was read from Mr. E. Higgins with reference to some specimens of *Deilephila Euphorbiæ*, exhibited at a meeting of the Society on the 17th of September, 1873, which were then stated to have been captured in the larva state in the neighbourhood of Harwich. Some doubt was expressed at the time, as it was stated that the food-plant did not grow in that neighbourhood; but about the middle of September last he had visited Harwich, in company with Mr. E. W. Janson, and they were afterwards joined by Mr. Durand (from whom he had received the specimens of *D. Euphorbiæ*), who undertook to show them the place of capture, and they not only found the food-plant growing there, but in three other places nearly half a mile further on.

*Paper read.*

Mr. Frederick Smith communicated "Descriptions of new Species of Cryptoceridæ belonging to the Genera *Cryptocerus*, *Meranoplus* and *Cataulacus*," accompanied by a plate containing figures of all the species, twelve in number; thus raising the number of species described by him to forty-eight. The descriptions were preceded by some interesting particulars relative to the habits of these insects, especially of *Meranoplus intrudens*, which constructs its formicarium in the thorns of a species of *Acacia*, some four to five inches in length; and at a distance of about half an inch from the pointed end a small round hole was made by the ants, which served for ingress and egress to and from the nest. The thorns contained a kind of spongy pith, in which the channels and chambers of the nest were constructed.

*New Part of the Society's Catalogue of British Insects.*

"A Catalogue of the British Hemiptera-Heteroptera and Homoptera (*Cicadaria* and *Phytophthires*)," compiled by Messrs. J. W. Douglas and John Scott, was on the table. This was the fifth Catalogue of British Insects published by the Society.—*F. G.*

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## Notices of New Books.

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*Ostriches and Ostrich Farming.* By JULIUS DE MOSENTHAL, Consul-General of the South-African Republics for France, late Member of the Legislative Council of the Cape of Good Hope, &c., &c.; and JAMES EDMUND HARTING, F.L.S., F.Z.S., Member of the British Ornithologists' Union, &c., &c. With Illustrations. Trübner & Co. 246 pp.

ALTHOUGH the name of M. de Mosenthal stands first as joint-author with Mr. Harting of this book on ostriches, we find only some fifty pages at the end of it, and these descriptive of the growth and present condition of ostrich farming, as coming from his pen; the first and larger portion of it, consisting of a monograph of the existing Struthious birds, has been industriously prepared from a great number of sources by Mr. Harting. Besides the ostrich, the American rheas, the cassowaries, the emus, and the curious apteryx of New Zealand belong to this family of ancient type, numerous representatives of which have only recently become extinct. These birds differ from all others in having no keel to the sternum, and, in consequence, are either wingless or have only rudimentary wings, and progress by running only. The leg of the ostrich is described as a wonderful piece of mechanism, capable of propelling the bird forward like a catapult. The ostrich is said to cover twenty-eight feet in its stride, and to be able to run at the rate of twenty-six miles an hour. The cassowaries are the best known members of the Struthionidæ: nine species are described, four of which come from the little-investigated island of New Guinea, where probably there remain more species yet to be detected. The use of the singular bony helmet and of the powerful elongated nail with which the inner toe is furnished, in these singular birds, can only be guessed at, as there have been few opportunities of examining them in their wild state. The Struthious birds are very similar in their habits, being for the most part hardy and able to bear vicissitudes of climate; most of them have bred in confinement in England, and they are easily domesticated. With all of them the male bird takes a

larger share than the female in bringing up the family; collecting together the eggs, which his spouse drops rather at random, and either entirely incubates them, as do the emus, or as the ostrich does, sits upon them at the most important time, *viz.*, by night. Mr. Harting has reproduced a very interesting and amusing account of the nesting of the smaller emu of West Australia in this country, which our readers may perhaps recollect appeared in the 'Zoologist' for 1863 and 1864.

The ostrich used to range over a considerable portion of Central Asia, but is becoming each year more rare, and has a more restricted habitat. It is still found in some parts of Persia, in the Lower Oxus, and in the deserts to the east of Damascus, but the vast continent of Africa is to-day its chief home. Here it is hunted for its feathers from Barbary to the Cape, and is found upon all level plains suited to its habits. The finest birds, producing the best feathers, are those which are obtained in the neighbourhood of Timbuctoo. These feathers are exported from Tripoli, and are so highly prized that they never appear at a public sale. The South-American rheas share with the ostrich the little-to-be-envied privilege of being able to contribute towards the adornment of beauty, and a war of extermination is being carried on against them for the sake of their feathers. In 1874 sixty tons of feathers, of the value of 132,689 dollars, were exported from the Argentine States alone. It is calculated that between 300,000 and 400,000 rheas are slaughtered annually. One French firm received in one year feathers worth £48,000 from Banda Oriental, Entre Rios and Buenos Ayres. We are not surprised to hear that these noble birds are fast becoming scarce. Like the ostrich, the rhea is easily domesticated, and has bred with Mr. Walter Trevelyan at Shepton Mallet, in Somersetshire, and in a park near Chippenham.

The account furnished by M. de Mosenthal of the present prospects of ostrich farming at the Cape Colony is most interesting. It was felt that if the ostrich has to be hunted down and killed in order to supply the demand for its beautiful feathers, the end must soon come in its total extermination, and that the ostrich was too noble and too valuable a bird for this fate to be permitted to overtake it. Although for more than a hundred years the settlers at the Cape had been in the habit of keeping domesticated ostriches, there had been no attempt to rear them, or to make a business of

farming them for the sake of the feather market. Some successful experiments which were instigated by the French Acclimatisation Society in Algiers first directed attention to the capabilities of such a trade. It was not until 1866 that domesticated ostriches bred at the Cape, and so rapidly has the practice of ostrich farming grown since that year that a census taken in 1875 ascertained that there were then in different parts of the colony no fewer than 32,247 ostriches in a state of domestication. In 1858 there had been exported from the Cape 1852 lbs. of feathers, of the value of £12,688; while in 1874 the quantity had swollen to 36,829 lbs., of the value of £205,640, or an average value of £5 12s. per lb. Sufficient to show that ostrich farming is no unremunerative trade. It was soon found that it did not require very much to start an ostrich farm. A certain extent of ground needed to be surrounded with no very elaborate fence; crops of lucerne, the favourite food of the bird, had to be cultivated, and then, provided the soil was suitable, the ostriches did very well, bred readily in their domesticated state, and endured to be plucked of their feathers once in eight months. The chief requisite was that the soil should furnish alkalis, either in salt-licks or in the shrubs growing wild upon it. Farms supplying these conditions are in the colony termed "sweetveldts;" those which do not are called "sourveldts," and on these ostriches cannot be maintained in a healthy state unless they are given phosphates of lime, in the shape of pounded bones. It was found that the ostriches were in best feather at their breeding time, when it would not do to disturb their plumage for fear of interrupting their successful nesting. Necessity therefore invented, and soon improved upon, a method of artificial incubation, which is now brought to such perfection that the eggs stand a better chance of being hatched than they would if left to the natural care of the parent birds. It is said that out of forty-five eggs forty-three can now be hatched out with almost a certainty, and that ostriches thus artificially brought into existence are just as strongly developed as those hatched in a wild state, where there is usually much waste with the eggs deposited by the female birds. Only a part of the number produced are incubated; supplementary eggs are left lying round the nest—it is said to afford their first food to the newly-hatched chicken.

At the proper time for robbing the ostriches of their beautiful and costly feathers—fine specimens are literally worth their weight

in gold—the birds are driven into a small pen, and the operation is conducted without cruelty. An eye-witness relates:—

“Having got with my friend into the middle of the crowd, so packed that they were unable to move, he quietly selected two or three of the best feathers, and with a very sharp curved knife in his right hand, the blade protected by lying flat against his finger, he pressed it down as near to the root as he could, and cut it off obliquely upwards. The bird was quite unconscious of the operation, standing perfectly still as he handed several to me; he then picked out a blood-feather, very beautiful, which on being cut bled a little, but the sharp knife separated it without it being felt. In a month or six weeks he took out all the stumps, if they had not already fallen out. By this means the health of the bird is not impaired, no irritation-fever is produced, and you can select the feathers that are in prime condition, leaving the others that are to ripen in due course.”

At some places it is the custom to pluck the feathers out, and this certainly must be painful to the birds. The finest feathers are those of the wings; a good feather is said to be almost two feet long, and from eight to nine inches wide. Such a feather would be cheap at a sovereign. By the Cape Government the wild birds are now protected by a very stringent game law. No one can kill them without taking out a £20 licence, and there are heavy penalties for robbing the nests. The eggs of the ostrich have many enemies. The black crow is wont to hover over them, dropping stones until it succeeds in breaking one that it may devour its contents. Vultures have been seen walking towards an ostrich's nest with pebbles in their beaks with which to hammer at the eggs. The Bushmen carry off these precious potential feather-producers to barter them for a paltry sixpence to the collector of curios. And besides the winged marauders that plunder the nests, there are many human spoilers to whom an omelette of ostriches' eggs is a welcome dainty. So that there is every need to give the birds and their nests all the protection of the law in order that there may be an available wild stock to recruit the ostrich farms.

Apparently there is no limit to which the South-African feather trade might not be carried, and herein, and not in the diamond fields, may be the future development of the prosperity of the colony. As far as we can see, there is only one danger to which the ostrich farmers are exposed. And that is the tendency of disease to break out amongst all animals or birds



which are placed in abnormally favourable conditions for their multiplication. If in their wild state dangers have to be encountered which to a certain extent diminish their productiveness, yet these very obstacles tend to strengthen their vital force. It is said that diphtheria is apt to break out among domesticated ostriches, and as the number of these mounts up annually we are apprehensive lest this complaint may sometimes assume the severity of "an ostrich disease," to the loss and disappointment of those who are devoting themselves to ostrich rearing.

The work of which we give this short notice is appropriately illustrated with pictures of various modes of ostrich hunting, and with figures, beautifully drawn and engraved, of the ostrich, rhea, emu, cassowary and apteryx. It is just the sort of book to give as a Christmas present to a young naturalist. Had ostrich farming existed when we were young, and had such an interesting account of it as that supplied by Messrs. Harting and de Mosenthal been put into our hands, we feel quite certain that we should have been fired with a desire to emigrate at once to the Cape Colony in order to join in what would have seemed to us a most fascinating method of making our fortune.

MURRAY A. MATHEW.

November 11, 1876.

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**Black Water Rat.**—On the 27th of October an adult water vole (*Arvicola amphibius*) was trapped at Keswick, near Norwich, in which the entire fur was of a deep black, but with a slight silvery reflection on some of the longer hairs of the back; it was caught in a garden, into which it had probably strayed from a neighbouring meadow.—*J. H. Gurney; Northrepps, Norwich.*

[A black variety of this species, described by Pallas and other continental naturalists, has long been known. According to Macgillivray, who described it under the name of *Arvicola ater*, this variety is very common in Banffshire and Aberdeenshire. We have seen specimens from Cambridgeshire, and, if our memory serves, from Sussex also, where two or three were obtained on the mill-stream at Ratham, near Chichester, by Mr. W. Jeffery. Apropos of varieties of the water vole, three white specimens of this species have come under our notice, obtained at Newbury, Brighton, and Reading respectively.—ED.]

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**Whitetailed Eagle in Suffolk.**—A sea eagle paid a flying visit to Lord Guilford's covers here, during the latter part of August, but was fortunate enough to escape the keepers.—*Arthur J. Clark-Kennedy; Little Glemham, Suffolk.*

**Supposed Occurrence of the Lesser Kestrel near the Land's End.**—My attention was called yesterday by Mr. Marks, naturalist, of this place, to a very small kestrel he had received from the western district of this county, and which I had an opportunity of examining in the flesh and weighing. The weight was exactly four ounces; I see that of the male kestrel is said to be seven or seven and a half ounces. The bill is very short, thick and more massive than the common kestrel; blue at the base. Length from carpal joint to the end of the first quill-feather, nine inches; total length of the bird lying on its back, barely twelve inches. Head smaller and less bluff, in proportion, than the common kestrel. Legs bright yellow. Claws black: in Gould's 'Birds of Europe,' the claws are said to be white. The wings scarcely reach to the end of the tail by three-fourths of an inch. I may add that the rufous colour on the upper breast is more defined than in the common kestrel; the under parts are plain buff ash-colour, with few markings. The plumage of the female kestrel, which it exactly resembles, applies to this specimen. I have sent the above particulars off-hand; I know nothing personally of the lesser kestrel, never having handled a skin or examined one, so that I must leave the matter for the present in the hands of those who may be able to suggest further particulars.—*Edward Hearle Rodd; Penzance, November 15, 1876.*

**The Lesser Gray Shrike (*Lanius minor*) in Devonshire.**—In my notes for September (written in Somersetshire) I mentioned having received information from Mr. Peacock, a bird-preservee, that a great gray shrike (*Lanius excubitor*) had been captured by a bird-catcher in the neighbourhood of Plymouth. On my return home I went to see the bird, and found to my surprise that it was not the great, but the lesser gray shrike (*L. minor*), and a bird of the year. As this is the first time that the bird has been known to occur in Devonshire, I feel great pleasure in being the first to announce the fact. It was caught on the 23rd of September last, and brought, alive, the same day to Mr. Peacock, who supposed it to be nothing more than the young of the great gray shrike until I pointed out the difference to him. Fortunately he had preserved the skin, the description of which is as follows:—Whole length nearly nine inches; from the carpal joint to the longest quill-feather, four inches and five-eighths; third quill the longest, and the fourth nearly equal to the second. Bill resembling that of the woodchat shrike, shorter and rather more arched, or gradually sloped, from the brow to the tip than that of *L. excubitor*. Plumage above ash-gray, each feather having a faint dusky bar, but light at the tip; rump similarly barred, but of a lighter gray. A dusky or nearly black band from the eye

to the ear-coverts, though not crossing the forehead, which is ash-gray. Wings dull brownish black, with the coverts, secondaries, tertiaries, and primaries more or less broadly edged and tipped with white; bases of the primaries white, forming a conspicuous patch similar to that of *L. excubitor*. Throat, breast and belly wholly dullish white, without an indication of the semi-circular bars usual on the breast of the young *L. excubitor*; but the sides under the wings are gray, faintly barred, and showed, I think, a slight blush when first caught. Outer tail-feather altogether white, with the middle of its shaft only black; outer web, base and tip of the second feather white, with an elongated patch on the middle of the inner web; centre of the third feather black on both webs—base and tip white; fourth feather black, with the exception of a very small portion of white at the base and tip; two middle feathers wholly black, but all the quills of both wings and tail are much narrower in proportion than those of *L. excubitor*. The plain white under parts, however, and the outer feather of the tail suffice, I think, to distinguish the young of *L. minor*.—*J. Gatcombe*; 8, *Lower Durnford Street, Stonehouse, Devon*.

[This makes the fourth recorded occurrence of the lesser gray shrike in England. The first was obtained at Scilly in November, 1851, and is in the collection of Mr. Rodd, of Penzance. The second was shot near Great Yarmouth in the spring of 1869, and is in the possession of the Rev. Murray A. Mathew, of Bishop's Lydeard; the third was procured also near Yarmouth, in May, 1875, and is in the collection of Mr. J. H. Gurney, of Nethrepps, near Norwich.—ED.]

**Rufous Warbler at Slapton, Devon.**—I wish to record the occurrence near here—at Slapton, and bordering on the sea—of the rufous warbler (*Ædon galactodes*), on the 12th of this month. As a gentleman and some friends were crossing a turnip-field, a small bird of a very light colour was seen to rise and fly on to the hedge: its peculiar action of flying up perpendicularly and alighting again at the same place, with expanded tail, attracted attention, and it was approached and shot. The bird was sent to my brother, R. P. Nicholls, at whose house I have carefully examined it, and find it to be a male of the above species: it has much the appearance of a bird of the year, the dark band on the tail being very indistinct, and the middle feathers short. The specimen mentioned in Yarrell as having occurred in 1859 must have been captured but a short distance from the spot where this bird was taken. I have also to mention the occurrence here of a female Montagu's harrier, a little tern, a curlew sandpiper, and a little stint.—*Henry Nicholls*; *Roseland, Kingsbridge, Devon, October 20, 1876*.

[We have received a second notice of this bird from the Rev. Murray A. Mathew, who saw it at the house of Mr. Nicholls. He confirms the statement that it is an immature specimen, and adds that "in the adult bird a band of black extends across the end of the tail, with a white edging, giving

a very handsome appearance. The general colour of the plumage is isabelline, not so clearly rufous as in an old bird."—ED.]

**Bewick's Swan and other Birds at Kingsbridge, Devon.**—I have to record the occurrence, on the 14th of November, of a specimen of Bewick's swan. A pair of swans were seen on the Kingsbridge Estuary, and after a few shots one of them was captured. I purchased it, and found on examination that it was a female of *Cygnus Bewickii*. Its weight was eleven pounds and a half; length, three feet ten inches; eyes very dark hazel. The peculiar formation of trachea and sternum sufficiently indicated the species. I may also mention the occurrence here of a female longtailed duck (*Anas glacialis*). Shorteared owls are unusually plentiful this season; I have seen a great many which have been shot, and a friend of mine informed me that he recently flushed twelve from a small patch of furze.—*H. Nicholls*.

**Variation of Colour in the Teal.**—One day while looking over a large quantity of teal, taken in the Ashby Decoy, Brigg, Lincolnshire, I noticed that their breasts were of all shades, from dark red to white. I pointed this out to the old decoy man, who said that the breasts of all teal on leaving the sea are of a deep red, but that the fresh water of the decoy blanched them in a very short time if they were not taken. He always picks out the red-breasted ones to send to the neighbouring gentry, considering them to be the finest. In the winter of 1874 a fine pochard (*Fuligula ferina*) was taken in this decoy, and is now in my collection.—*Adrian Peacock; Bottesford Manor, Brigg*.

[Pochards visit this decoy every winter, but from their habit of diving back on perceiving themselves in the decoy pipe they are not so frequently taken as the wild duck, teal and wigeon.—ED.]

**Longtailed Duck near Padstow, Cornwall.**—I have lately examined a specimen of this arctic duck, which was shot a few days ago, and sent here for preservation from the neighbourhood of Padstow. The bird has—what I have never hitherto observed in the few specimens which have occurred in this district over many years—white scapularies, which I apprehend denotes it to be an adult male in winter plumage; besides which it is decidedly larger than the other examples I have seen, and which all had a generally dark brown dorsal plumage, denoting the female or young male of the year.—*E. H. Rodd*.

[The white scapulars no doubt denote the adult male bird in winter plumage. In summer these feathers are chesnut, each with a black centre. Adults of this species are rarely met with off our southern shores, although in some winters immature examples are now and then obtained. In the Albert Memorial Museum at Exeter, however, is an adult male longtailed duck in summer plumage (still more unusual), which is said to have been shot on the Exe in 1847.—ED.]

