

LETTERS TO THE EDITOR.

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The Alleged Destruction of Swallows and Martins in Italy.

I AM naturally adverse to polemics, for I believe that what little time we have can be better employed. And yet, as an old client and reader of NATURE, and as Director of the Italian Bureau of Ornithology, I can hardly allow the several communications on the alleged decrease of swallows and martins and the destruction of small birds in general in Italy, which have appeared in recent numbers of NATURE (see p. 271), to pass without a comment.

That small birds are netted and eaten in this country is a fact which many of us deplore, and we are trying to prevent, or at least to diminish, that kind of destruction with regard to small birds, all of which I consider useful. But as to the Hirundinidæ, no such ruthless destruction as that described by Mr. J. H. Allchin takes place in Italy. To my knowledge no swallow or martin is ever netted in this country, and I confess that I should like to see such birds captured with a fish-hook! I can only ask Mr. Allchin if he candidly believes it possible to catch swallows in great numbers with artificial flies and fish-hooks? I simply do not. In Italy the Hirundinidæ are, besides, the only birds which owe protection to popular belief: in many localities they are considered "the birds of the Madonna," and it is considered unlucky to destroy them. I can assure Mr. Allchin that no decrease of the Hirundinidæ (nor indeed to a certainty of any other small Passerine bird) has been detected in Italy.

Finally, if Mr. Allchin is really desirous of acquiring trustworthy information on the condition of birds in Italy, instead of consulting the newspaper articles of Mr. Stillman, the veracity of whose assertions on such matters may be doubted, or still worse of quoting "Ouida" as an authority on a subject of which she knows nothing, he would do well to betake himself to the library of the British Museum, or to that of the London Zoological Society, and consult the four volumes which by Government commission I have published on the Avifauna of Italy¹; the three last being the results up to 1891 of an official inquiry on the condition of each species of bird, carefully conducted by trained and experienced observers all over the country. This inquiry is yet going on, and possibly a second report will soon be issued. Mr. Allchin is also evidently misinformed as to the international aspect of the question; at least, so far as Italy is concerned. HENRY H. GIGLIOLI.

R Zoological Museum, the University,
Florence, January 27.

The Hatching of Tuatara Eggs.

IN a memoir on the development of the Tuatara, which I am shortly about to publish, and upon my preliminary notes on which an interesting comment by Mr. G. A. Boulenger, F.R.S., has recently appeared in the pages of this journal (NATURE, vol. lviii. p. 619), I have come to the conclusion that the eggs of this reptile hatch about December of the year following that in which they are laid, and that they thus occupy about thirteen months in their development. Hitherto, so far as I am aware, no specimens have actually been hatched out in captivity, or under direct observation. On December 1, 1898, however, Mr. P. Henaghan, the keeper of the lighthouse on Stephen's Island, brought to my laboratory some eggs which had been recently laid, together with others laid during the previous season. On unpacking the eggs, one of the latter was found to be already hatched, having yielded a fine, active young Tuatara, which is still (December 21) in a state of vigorous health, though it has not been observed to eat anything. On December 8-9 a second specimen hatched out, though I am inclined to think a little prematurely, as a large part of the yolk-sac was still attached. These specimens agree closely with the dead

¹ E. H. Giglioli, "Avifauna Italica," pp. vii.-626. Firenze, 1886. "Primo Resoconto dei risultati della inchiesta ornitologica in Italia." Parte I., "Avifauna Italica," pp. vii.-706. Firenze, 1889. Parte II., "Avifauna locali," pp. viii.-695. Firenze, 1890. Parte III., "Notizie d'indole generale," pp. vii.-518. Firenze, 1891.

specimens of Stage S. received by me last year, and described in my memoir, but it seems worth while to place on record the actual time of hatching, although the new observations only confirm the conclusions already arrived at. The hatching probably continues throughout the month of December, as the eggs of last season, opened during the last few days, each contain a considerable amount of yolk, together with the very advanced embryo.

A point which seems worthy of attention is the large size of the eggs containing embryos nearly ready to hatch. Two eggs opened on December 17, and containing embryos at Stage S., measured 35×27.5 and 32.5×26.5 mm. respectively, while recently-laid eggs opened on December 21, and containing embryos of about Stage N., were much smaller, the six measured ranging from 25.5×20 to 29×22 mm. These observations certainly seem to confirm the opinion of Mr. Henaghan that the eggs swell during development, which I have been at some pains to controvert in my memoir. It must be remembered, however, that the eggs of the Tuatara vary considerably in size.

The eggs nearly ready to hatch are still very tense and turgid. In hatching, the leathery egg-shell appears to be simply torn or split irregularly, probably by the shell-breaker of the young animal. In the recently-hatched animal the nostrils are still plugged up, though the plug appears to be loosening, and after a short while it completely disappears externally.

ARTHUR DENDY.

Christchurch, N.Z., December 21, 1898.

THE afore-mentioned memoir, by my friend Prof. Dendy, has been accepted by Prof. Lankester, F.R.S., for the *Quarterly Journal of Microscopical Science*, and is about to appear in the February number of that journal, to be followed immediately by another on the Pineal Eye; Prof. Lankester having arranged for publication with that generous enthusiasm he extends to all good work. As already announced in these pages, Prof. Dendy sent me last autumn some preserved material for the investigation of the development of the Tuatara's skeleton, and with it half-a-dozen eggs due for hatching about December. The latter were in moist sand packed tight in a tin canister, and were brought by Mrs. Dendy in her cabin, on a voyage to England. Upon delivery they were transferred to a hot-air bath and kept at an approximate temperature of 25° C. One embryo decomposed, and a shell, containing another, having collapsed, was opened by my pupil, Mr. H. H. Swinnerton, who is co-operating with me in the task of investigation. The other four were opened by the enclosed embryos; one prematurely on November 22, the others respectively, and at the full time, on January 14, 19, and 24 of the present year. The embryo which emerged prematurely had a pendant yolk, and was but a centim. shorter than those of Dendy's Stage S. in my possession. The three young ones which remain left the egg with the yolk absorbed, and they continue active and healthy. Although their incubation period would appear to have exceeded that of those hatched out in Prof. Dendy's laboratory, the largest egg-shell measured but 31.5×24 mm., the smallest 28.5×21 mm. The apparent swelling of the shell, alluded to by Prof. Dendy, had independently arrested the attention not only of both Mr. Swinnerton and myself, but also of our laboratory attendant, George Woodrow, who in December remarked to me that "the eggs seemed rising above the sand"; and the phenomenon would appear to be due to internal tension, no doubt resulting from the actual growth of the enclosed embryo. One of the young ones had just liberated itself as we arrived on the morning of January 24, and we were able to note that on leaving the shell it lay torpid beside it for a period less than an hour, and then with a sudden start ran briskly forward. One of the youngsters, tempted on the day of hatching with a small earth-worm, ran from it affrighted, and by all three meal-worms are still refused. "Bluebottles," however, are eagerly devoured, and upon these all are at present thriving, with every indication of success. Concerning the rupture of the egg-shell, the four shells from which the young in my possession escaped were each cut cleanly, as by a razor, along the long axis. In the case of the prematurely hatched embryo, the incision extended the whole of one side, from pole to pole, while in that of each which went the full time it started short of one pole and extended longitudinally round the other to an approximately corresponding point on the opposite side. In every case the underlying serous envelope was similarly clean cleft, and on examination of the newly-