

From Magazines, &c.

EGRETS' EGGS.—At the August (1907) meeting of the Field Naturalists' Club of Victoria Mr. A. H. E. Mattingley exhibited the eggs of the Plumed Egret (*Mesophoyx plumifera*) taken by himself the previous season, and stated to be "previously unrecorded for Australia."*

At the September (1907) meeting of the Linnean Society of New South Wales Mr. A. J. North sent for exhibition a set of eggs of the Plumed Egret (*Mesophoyx plumifera*) with a note that the eggs "were taken by Mr. Septimus Robinson on Buckinguy station, N.S.W., on the 8th November, 1893."†

It is hardly just to oological students that such an up-to-date authority as the Ornithologist of the Australian Museum should suppress the description of rare and interesting eggs for fourteen years!

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HONEY-EATERS PLENTIFUL.—During the present season large numbers of Honey-eaters have visited the Adelaide plains, and the Reedbeds district being a well-timbered and verdantly-clothed locality, it is little wonder that these birds have made it their chief rendezvous. The subject was brought under notice by Mr. J. W. Mellor at a recent meeting of the South Australian Ornithological Association held in the district. The largest of the family, the Red Wattle-Bird (*Acanthochæra carunculata*), are extremely plentiful, and unusually energetic in eating fruit, especially luscious peaches and well-ripened plums and figs, their mode of devouring them being to insert their powerful bill into the fruit, and by means of their large brush-like tongue wiping and sucking the juice and flesh until nothing but the skin and stone are left. Brush Wattle-Birds (*A. mellivora*) are also present, but are not fruit-destroyers like the larger variety. The White-bearded Honey-eater (*Meliornis novæ-hollandiæ*), often called the "Yellow-wing," is to be seen flitting in the thick bushes, while in the higher trees the White-plumed Honey-eater (*Ptilotis penicillata*), known to the small boy as the "Greenie," may be seen, in company with several of the *Melithreptus* family, notably the Black-throated Honey-eater (*Melithreptus gularis*), often called the "Black-cap," the Lunulated Honey-eater (*M. lunulatus*), and the Brown-headed Honey-eater (*M. brevirostris*). The pretty Spinebill Honey-eater (*Acanthorhynchus tenuirostris*), with its needle-like curved bill, resembles the handsome little Sun-Bird, as it flits and darts hither and thither, thrusting its well-adapted bill into the long tubular flowers to

* *Victorian Naturalist*, vol. xxiv., p. 84 (Sept., 1907). See also *Emu*, vol. vii., p. 91 (Oct., 1907).

† *Proc. Linn. Soc. N.S.W.*, vol. xxxii., part 4, p. 629 (issued 11th March, 1908).

extract the sweet nectar, which is out of reach of the shorter-billed birds. The Singing Honey-eater (*Ptilotis sonora*) is also present, and somewhat troublesome, owing to its love for a little fruit in the hot weather. A bird not previously observed in the district is the Tawny-crowned Honey-eater (*Glycyphila fulvifrons*), which is usually found in open heath country, where it leads a somewhat solitary life. The Noisy Miner (*Myzantha garrula*), another of the Honey-eaters, often seen in the hills, has also made a visit to add its name to the record. It is thought that the appearance of the birds is due to the abundance of eucalyptus now in bloom, from which this family draw their chief food supplies.—*Advertiser* (Adelaide), 10/2/08.

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THE WAYS OF THE EMU.—In *The Australasian* of the 21st March last, Mr. C. H. M'Lennan, under the *nom de plume* "Mallee-Bird," contributed a valuable field observer's paper on the Emu (*Dromæus novæ-hollandiæ*). Mr. M'Lennan's remarks are the more interesting because he is a genuine student of the bush, besides being a successful dingo-hunter, and writes what he has personally studied, taking nothing for granted. Regarding the breeding habits of the Emu, Mr. M'Lennan states:—"I have reason to think that in selecting its nesting place the Emu has some strange foreknowledge of the weather—call it instinctive or what you please—because I have noticed that in seasons which have turned out very wet the bird frequently builds its nest on high ground, and, as the nesting season begins often as early as the month of June, and extends to November, the nest site has to be selected before the winter and spring rains have fairly set in. The nest is generally placed amongst low scrub upon a slope facing the rising sun; but in seasons which afterwards turned out to be exceptionally dry I have found the nest on low ground, even in depressions. The lignum swamps are another favourite nesting place, and there, of course, the bird usually selects one of the hummock islands. Building the nest is not a matter of much importance. The eggs are as often as not laid upon the bare ground, surrounded with a ring of twigs, leaves, and other loose litter in the outline of the Emu's body. There is generally a slight depression where the bird has scratched away the loose earth, but occasionally the eggs are found lying upon a bed of dry leaves. The female lays in the early morning, an egg every second day, and I notice two distinct types of egg both in shape and colour. One of them is pale green, and round in shape, in contrast with the other, which is more of an oval or pear shape, the shell a deep, dark shade of green, and much thinner than in the other type. From the time the last egg is laid until the first downy chick is hatched varies from 54 to 57 days, and that is the period when

the habits of the birds form a most interesting study. As far as my personal observations go, a full clutch varies from seven to eleven eggs. The greatest number I found in one nest was seventeen, but in this instance I think two birds laid in one nest. There is a good deal of controversy upon this point, and it is a matter upon which few naturalists are able to get direct evidence, but on two or three occasions I have satisfied myself that a pair of females used the same nest, and have studied the tracks of the birds closely in order to make sure of it. My opinion is that in every case where an exceptional number of eggs were found in one nest it was used by more than one female. One day I found a most remarkable clutch in a nest placed in dry lignum, which contained seven Emu eggs and a pair of Native Companion's* eggs. I intended to watch that nest closely for results, but unfortunately it was raided by an egg-collector, who had no curiosity as to what would happen when the Companion chicks were, in the natural course of events, first hatched. These two eggs were placed in the centre of the Emu clutch, and I noticed a pair of Native Companions feeding in the locality. The Emu's habit of drumming near the nest is one of the best aids in finding it. The female generally drums in the evening, and by drawing a straight line on the ground in the direction of the drumming you have a pointer in searching for the nest next day. In the laying season the female generally booms early in the evening, about twelve resonant notes in succession, with a short interval between each. The drumming of the female is loud and rather harsh towards the end of the call, the note of the male sharper and more distinct. Few birds of the bush take a larger share in the hatching and rearing of the family than the male Emu. He is the first to sit as soon as the clutch is complete, and rarely goes far from the nest site from the time the first egg is laid until the young are hatched, while the female, during the day, when she is off duty, wanders over a considerable range of country. She generally returns to the nest towards evening, and relieves the male bird for an hour or two each night, commencing about the second week and continuing from 14 to 20 nights. Afterwards the male has complete charge, and though in the early stages of incubation he only sits from two to four hours each day, at a later period he seems loth to leave the nest even when alarmed. At first, when any suspicious sound excites the vigilant male he leaves the eggs at once and sneaks away stealthily through the scrub. At the end of a few weeks, however, even with an intruder close by, he crouches low upon the nest with his head and neck flat upon the ground, and his sombre plumage is then so closely in harmony with his surroundings that he is not easily

* *Antigone australasiana*.—EDS.

detected—a surprising circumstance with a bird so large as the Emu. The female may generally be seen making a straight line for the nest in the evening, and wandering off from it again at dawn. Nearing the nest the course of both birds is always erratic; they circle about it for a time, approaching from all points of the compass. However the trails may vary they all unite at one point, and thence for about fifty yards there is a straight line for the nest, which from much trampling finally becomes as clearly defined as a beaten 'pad.' Even when the female lets him off duty for a few hours at night the male is never far distant, and on the first sign or sound of alarm the faithful sentinel makes straight for the nest, his feathers ruffled up in fury until he looks quite a formidable adversary. If the intruder be a tame dog or a dingo the bird goes straight at him, pecking and kicking, and soon drives him off. The male Emu is a match for more than one dingo. I have on occasions seen him keep two or three hungry dingoes at bay, and after a battle lasting perhaps twenty minutes drive them off, though they prefer the flesh of the Emu even to that of the kangaroo, and manage to kill a great many of the birds when partly grown. After the young are hatched the female still takes the lesser share of the trouble. For two or three weeks both parents are in charge of the brood. When they are wandering in search of food or water the male is invariably the advance guard, while the hen brings up the rear, but when the mother finally leaves the family as they gain strength the 'old man' changes his tactics and always follows the young. With them it may be truly said that eternal vigilance is the price of safety, and for his natural enemies the male Emu is ever as alert as he is intrepid. He is quite aware that the dingo, whom he has most to fear, is likely to attack the young from the rear, through having first crossed their trail and then followed up the scent, hence his change of disposition as soon as the hen deserts him. Any suspicious object seen for the first time greatly excites his curiosity. Standing stock still for a while, he investigates the strange object closely, then, with head and neck poised, slowly approaches it, uttering now and again that booming note peculiar to his kind, flapping his tuft-like immature wings as the birds always do when drumming."

[The only debatable ground Mr. M'Lennan raises is at the beginning of his capital article, when he states "the nesting season begins *as early as the month of June*, and extends to November." Does he mean that eggs may be found between these months, or are the young hatched by November, and is that season peculiar to the Mallee? Reference to Campbell's "Nests and Eggs," p. 1,061, shows that in Riverina (not more than 100 miles as the crow flies from Mr. M'Lennan's locality) the census for an Emu-egger's camp gave the total finding

of nests for two consecutive seasons as follow :—April, 1 nest ; May, 17 nests ; June, 22 nests ; July, 4 nests. From this it would appear that the earlier breeders lay towards *the end of April*, some birds in May, and the majority have laid by June or July.—EDS.]

Reviews.

[“ A Monograph of the Petrels (Order Tubinares).” By F. Du Cane Godman D.C.L., F.R.S., &c.]

A NOTICE of this classical work appeared in *The Emu* (vol. vii., p. 205) on the publication of part i. Part ii. has now been received, and maintains the high standard of excellence of part i. In the present part the following Australian Petrels are dealt with, namely :—*Puffinus leucomelas*, *P. bulleri*, *P. chlororhynchus*, *P. gavia*, *P. assimilis*, *P. carneipes*, *P. griseus*, and *P. tenuirostris*. Perhaps more could have been stated about the last-named—the popular and important “ Mutton-Bird ”—but possibly other writers have elaborated enough respecting it.

The following is the history of the “ Monograph,” taken from *The Ibis* (April, 1908) :—

“ We have already (*Ibis*, 1907, p. 515) stated the circumstances under which the illustrated work on the Petrels projected by the late Mr. Osbert Salvin and Dr. Godman came to a stop in consequence of Salvin’s death, and have announced Dr. Godman’s recent determination to complete the work as nearly as possible in the manner in which it was originally planned. The Tubinares, which, besides the typical Petrels, contain the Shearwaters, Fulmars, and Albatrosses, had long been one of the favourite groups of Salvin, who prepared in 1896 the well-known account of them contained in the 25th volume of the ‘ Catalogue of Birds in the British Museum.’ It was the intention of Salvin, after the completion of the last-named work, to issue, in conjunction with Dr. Godman, a series of coloured illustrations of these interesting birds, and at the time of his death (in 1897) many of the plates had been drawn and coloured. Dr. Godman has now resolved to have the series of plates completed, and ‘ to issue them in the form of a Monograph, adding such synonymy and remarks on the geographical distribution of the species as Mr. Salvin had originally intended and bringing the work up to date.’

“ Since 1896, as we are informed in the prospectus, considerable additions to our knowledge of the Tubinares have been made by Mr. Walter Rothschild, who possesses a splendid series of these birds in the Tring Museum, and some remarkable discoveries concerning them have followed from the researches of the American naturalists on the Pacific coast of North America. The late Sir Walter Buller has likewise contributed much to our

information concerning the Antarctic species of Petrels in the 'Supplement' to his 'Birds of New Zealand.' This Monograph, however, is chiefly based on the large series of specimens in the British Museum, which now includes the original 'Salvin-Godman' collection."—A.J.C.

[“Geographical Variations in Birds.” By C. W. Beebe, Curator of Birds, The Zoological Park, New York.]

SOME forty interesting pages are devoted to the subject, with special reference to dichromatism and melanism in birds, as well as in other animals. The moist parts of south-west and south-east Australia are specially interesting in comparison, while Tasmania fits in with “a decrease in size southward, in addition to a change in colouration,” for everywhere one sees the tiger snake (*Hoplocephalus curtus*) well showing the darkening tendency. A second example always before us is the *Pachycephala melanura*. In Tasmania the black tail is constant, almost without exception, while on the mainland one occasionally sees the black tail in the mainland form (*P. gutturalis*) of the island species. I take it the Tasmanian form shows a clear case of melanism when the grey tail is no longer grey but black. Reversion with change from island to mainland may occur as with Mr. Beebe's examples of south to north on the continent. In a case of melanism it is all over the world, apparently, a difficult matter to fix a species. After some hundreds of generations in a changed climate the species will revert when conditions again become as they were. “That humidity in some way influences the metabolic processes which lead to pigmentation can hardly be doubted” (p. 5). Uric acid in excess may be a reason, but chemists have not yet settled the question. Local differentiations are transmitted from parent to young, and are hereditary, in the usual sense of that term. “The different factors of the environmental complex do not have any specific influence upon colouration, but all act alike as stimuli, either alone or in combinations, to accelerate or retard colour development, and thus to modify colouration in the following way :—

“a.—Towards melanic or albinic conditions, which are most general and important in colouration.

“b.—Towards suppression or accentuation of particular colour areas or groups thereof.

“c.—Toward changes in the colours themselves.”

Prof. Davenport speaks of black plumage as a “discontinuous characteristic,” and one that cannot be modified or is capable of becoming an intergrade. Mr. Beebe quotes diverse views of competent biologists, and remarks upon how little we actually know, not only of the direct action of the various climatic factors of the environment, but of the relative importance of these

factors (temperature, humidity, and light), both in the ontogenetic and phylogenetic history of the various organisms. Of the various externally exerted stimuli we know little.

As an example of dichromatism Mr. Beebe quotes our *Stercorarius*. In the northern hemisphere, where the small Skuas breed, it is very common to find a parti-coloured bird mated with one wholly dark. Confined to Australia, a good example is the *Gymnorhina* on land and the Reef-Heron on water. A case is quoted of a parallel case of a Heron in the waters of the United States of America, where parti-coloured birds are not uncommon. On p. 15 Mr. Beebe says:—"While it is impossible to correlate with more certainty the foregoing examples of melanism and dichromatism, yet we should keep them all in mind while endeavouring to interpret the results of future field studies or experimental researches along these lines." Australia offers a splendid field to the workers of every State for such research. No student need say the field is without opportunity. It is there, and one full of interest. The study of our desert forms is a live one for those living far back, while for the coastal people the plumages of *Pachycephala* are full of interest—the foundation of the rufous race geographically, the "medieval" period of greys, and the modern species of many colours—the three phases showing in any one male bird in three years.

Mr. Beebe draws attention to *Munia flaviprymna* as being a desert form of *M. castaneithorax*, and quotes an Australian trapper of great experience for the opposite opinion, in so far as he has always met each bird true to its species. Everywhere there is a field for the man who interests himself in the birds—abroad or in the aviary.

Some pages (15-18) are given to the question of sporadic melanism. Australia renders its examples. The writer has a good example in a specimen of the White-plumed Honey-eater, the throat being particularly dark, and the body not normally greenish. This species generally appears true to its type.

In Tasmania there appears to me to be a tendency to melanism, judging by the birds I have recently seen. Pages 31-33 are given to "The Direction of Evolution." Melanism in humidity is said to be not subject to mutation and natural selection. One author considers "the direction of evolution can never be reversed;" another asks, "Can the direction of evolution ever be anticipated?" "Interesting and significant as the results are, they but open up innumerable new vistas of unexplored fields."

Mr. Beebe sounds a warning note with regard to naming variations. The scientific world of to-day considers its nomenclature as near as possible to the natural order of evolution, while it may still remain a help to working naturalists.—R. H.