

*FAUNA OF MADAGASCAR.\**

THIS is the first part of a work intended to consist of the natural history of the mammals and birds collected by Messrs Pollen and Van Dam during their travels in the island of Madagascar and its dependencies. It is accompanied by figures of such species as are either new to science or only imperfectly known; and is to be followed by what is much needed, viz., a critical review and enumeration of all the mammals and birds indicated up to this time as natives of the geographical province of Madagascar.

It is printed in quarto, with fine paper and good type, and is to appear in parts, each of which consists of forty-eight pages, and contains ten beautifully-coloured plates; and, a not unimportant point for the naturalist to know before he subscribes to the work is, that it is to be completed in four parts.

The part now published contains the mammals and the birds of prey actually met with by Messrs Pollen and Van Dam; and, incidentally, a number of critical observations on the species generally are given, but not the enumeration of all those species.

The mammals noticed are the Lemur Macaco, *L. Mayottensis* (nov. sp.), *Hapalemur griseus*, *Cheirogaleus furcifer*, *Lepilemur mustelinus*, *Microcebus Coquereli*, *Cryptoprocta ferox*, *Viverra Schlegeli*, *Pteropus Dupreanus*; to which are added some notes on species the authors had not seen, viz., *Lichanotus brevicaudatus*, *Avahis laniger*, *Lemur varius*, *L. Catta*, *Cheiromys Madagascariensis*, *Galidia elegans*, and *Galidia concolor*, *Centetes ecaudatus*, *Pteropus Edwardsii*, *Taphazous leucopterus*, *Dysopes* sp., *Sciurus Madagascariensis*, *Mus Indicus*, *M. musculus*, *M. rattus*, *M. sylvaticus*, *Sus larvatus*—a species of *Delphinus*—and the *Physeter macrocephalus*. More or less information is given regarding the character and habits of all these, and it appears to be carefully and judiciously collated.

For some time past the conviction has been growing on zoologists, that the number of species of Lemurs is considerably over-estimated, and that a good many of those standing on our lists will, on

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better acquaintance, have to be deleted from them as varieties, or as the young or the sexes of other known species. The species noticed by Messrs Schlegel and Pollen furnish examples of this. The first in the list, Lemur Macaco, turns out to have two quite distinct dresses—one black, that of the male, the Lemur niger, Geoffr., and the other reddish yellow (subject to considerable variation), that of the female, the Lemur leucomystax, Bart.; and the experience of our authors, derived from a long series of specimens of all ages, is, that these special colours are distinctive of the male and female from their very youth, although variable in degree of intensity of colouring, especially in the female. The results in clearing up the synonymy of species is remarkable. From their study of the animals in life and in their own country, it appears that the most of the characters on which authors have erected new species and even genera, are not specific, but merely individual.

The weeding out of species thus accomplished, knocks off besides the above corrections, five of Dr Gray's species, and six of Geoffrey St Hilairé's. We should have expected that, after the warning conveyed by the discovery and correction of so many mistakes of others, Messrs Schlegel and Pollen would themselves have been careful to avoid such errors themselves; but they are no better than their neighbours, and sin with their eyes open. There are two species of Lemur described from the Comoro Islands, but none have been signaled from the easternmost of these islands, viz., Mayotte. Our authors have, however, got a species from it, and as they cannot get it quite to agree with the description of either of the other two species, or with the Madagascar species, to which all three may belong, *L. collaris*, (it being a little paler in colour of fur), they have given it a new name, *L. Mayottensis*.

M. Pollen gives an account of the habits of the Lemurs, which our knowledge of them, derived from the study of them in our zoological gardens, has somewhat anticipated; still, the history of a naturalist's actual experience in procuring specimens, living or dead, necessarily contains much that is interesting. To us the most interesting point in their economy, is the resemblance of their habits and mode of life to those of the Opossums and other marsupial animals. Like them they are nocturnal animals, and like them some of them live in hollow trees with two entrances. The interest of such similarities lies in the fact that there are also anatomical and structural as well as external resemblances between

the Lemurs and the Marsupials. This is usually called a relation of analogy ; but without going the length of saying that there is no such thing as a relation of analogy, or that all the so-called relations of analogy are in point of fact relations of affinity, it seems to us that in many cases they are so ; and, at all events, we shall by no means be surprised if this should be hereafter acknowledged to be the case in the instance of the Lemuridæ and Opossums.

*Cryptoprocta ferox*, as to whose true relation so much discussion has taken place, is here figured and described, and our authors give the following brief estimate of its affinities :

“ Compared with the Cats, the *Cryptoprocta* recalls these animals to mind by its physiognomy, by the general appearance of its form, by its system of dentition, and its tolerably retractile nails ; and, in particular, it approaches more nearly in respect of form to the Jaguarondi, in respect of colour to the Puma, (*Felis concolor*). The *Cryptoprocta* diverges, on the other hand, from the Cats in general, by its form, somewhat more elongated in all its parts, including the cranium ; by being not quite so high upon the legs, by its well developed anal pouch, by an additional molar in each side of the under jaw, and by the bareness of the soles of its four feet, being more extended and not divided by bands of hairs into a certain number of compartments.”

Occupying, as it does in these respects, a somewhat middle position between the true Cats and the Viverridæ, it is not likely that its nearest relations will ever be settled to the satisfaction of every one ; but it is satisfactory to know exactly what the differences are, so that every one may put his own value upon them.

Of the *Galidia elegans* and *concolor*, we learn that they both frequent marshy places, covered by aquatic ferns and reeds, and prey on rails and other water birds and their eggs ; but after their chase they retire into the forests, situated at a certain elevation, They also feed on mice, rats, and some fruits, such as the banana.

These animals were discovered by Bernier, in the north east of Madagascar. The *Galidia concolor* is commoner than the *G. elegans*, and *G. olivacea* is only a variety of it. M. Coquerel made some observations upon one individual, which was kept in a very frequented hotel at St Denis, in Bourbon Isle. It was completely free, and was constantly running about, giving utterance to a sort of purring or clucking, like that of some birds. It made continual war on insects and other vermin in the hotel. In a very short time all the rats disappeared. It pursued them into the narrowest holes, sucked their blood, and eat their brains. It got quite tame, and followed its master everywhere.

The Cryptoprocta, the Galidias (including *Atilax* and *Galidictis*), and a Genet (*Viverra Schlegeli*), now first described, and nearly allied to the Indian species (*V. Indica*), are the only carnivorous mammals in Madagascar, the Lemurs being essentially frugivorous, for although they occasionally kill small birds, and cracking their skulls like a nut, suck out their brains, they are scarcely flesh feeders, the rest of the body being thrown away. This paucity of Nature's police might be sufficient to maintain the balance of power in the island while in its natural condition; but now that the entrance of man on the scene has introduced elements of disturbance, the police is quite inadequate to its task. Rats and mice have come in the white man's ships, and have overrun the island to a degree unheard of elsewhere.

M. Pollen says of them :

“The mammals which are most abundant in Madagascar, are beyond contradiction the rats and the mice, known to the inhabitants under the names of *Valave* and *Sizi*. The most common are the *Mus Indicus* and the *Mus musculus*. They have probably been introduced by merchant ships. The quantity of these animals is so great, that at night one can scarcely walk a step without seeing them running about in hundreds in search of food. I shall never forget the torments that the rats caused us, during our abode in the forests stretching along the banks of the river *Kongony*. Their teeth spared nothing, and we were often obliged to share our repast with these annoying gourmands. It happened even several times that they gnawed away the soles of the feet of my Malagase servants, who, plunged in deep sleep, did not perceive it until next day, when the burning pain of the wounds apprised them of it.”

They are terribly destructive to the sugar canes, and all provisions not put in a place of safety, the most approved contrivance for which is a circular piece of wood, like the bottom of a cask, perched on the top of a pole. The first colonists of Bourbon Isle (the Isle de Reunion) suffered so much from the rats and mice between 1548 and 1664, that they were literally driven from the isle.

The account given of the *Centetes ecaudatus*, the Madagascar hedgehog, is full and interesting. These animals pass the half of the year buried in profound sleep—and this takes place in the cold season, and not in the hot season as has been generally reported. About the month of May or June these animals dig a hole in which they sleep from the month of April to December, with their head nestled between their hind feet. The place of these holes is often indicated by a little mound of moss or soil, like mole-heaps. At this time they are very fat, and the natives of Madagascar and the

Creoles of Bourbon Island eagerly hunt after them for the sake of their flesh, which they esteem highly. During that season, and more particularly on feast-days, the market of St Denis is well furnished with these animals, either fresh or smoked. The Creoles who inhabit the mountains usually come down to the town on Sundays, to supply the market with these animals. They sell them according to their size and weight, often even at the price of two francs and a-half each. According to some amateurs, the flesh of this animal is preferable to that of sucking pig ; although others think it has a slight flavour of musk. The hunting of these Madagascar hedgehogs is performed by dogs trained for the purpose, but, more generally, they employ ugly little curs which seek out their retreat with ardour. As soon as they have found the retreat of one of these animals, they dig a hole and drag it out dead asleep. The hunter then puts it in his bag, and kills it afterwards.

The Tangué (as this animal is called in its native country) is very prolific, often producing twelve to sixteen little ones at a birth. This fecundity saves it from disappearing from the face of the earth, as is happening to so many animals which undergo continual persecution. Their food consists of earth-worms which they get out of the ground by means of their pointed muzzle and their feet, in the same way that pigs do. They also devour certain roots, fruits, and insects. In captivity they eat raw meat as well as the fruit of the banana, of which they are very fond. Their manner of life is more nocturnal than diurnal. They sleep all day, almost without interruption, but they are very active during the night. Mr Pollen has often kept them in captivity, and in the night they often broke with their strong teeth the iron trellis of their cage and escaped. They are subject to considerable variation. In some individuals the head and space between the shoulders and the fore-part of the sides are covered with very stiff and hard spines, while the other upper parts of the body are furnished with long hair. In young individuals the hair of the whole of the upper part of the body is mixed with spines of a whitish or brown and white colour. In other individuals the hairs are replaced on all the upper parts of the body, and even on the sides and posterior parts, by very stiff spines : hence Messrs Schlegel and Pollen regard the species *C. armatus*, Geoff., the distinguishing character of which is being wholly covered above with stiff spines, as merely an individual variety of the common *C. ecaudatus*.

Of *Sciurus Madagascariensis*, an animal whose existence has been

rendered somewhat doubtful by a confusion between the nomenclature of it and of the Aye-Aye, our authors do not tell much. What they do say, however, is in favour of its existence. They say: "This animal is very rare in Madagascar, and is only found in the interior of the eastern part of the island." The Museum of St. Denis possesses an individual brought from the environs of Antananarivo by a Jesuit missionary. The Betsimisaracs know this animal under the name of Hansirac. On it and the correctness of the determination of the affinities of the Aye-Aye depends the question whether the rodents are aboriginally represented on the island or not. The opinion of the majority of naturalists places the Aye-Aye among the Lemurs. But if the *Sciurus Madagascariensis* exists, and really is a squirrel, that would settle the question.

The habits of the Aye-Aye (*Cheiromys Madagascariensis*) are now so well known that we have no right to be disappointed that we do not find much new information regarding it. It appears that it is very rare, and it is only met with by chance. It lives solitary or in couples, and never in bands, and is essentially nocturnal, sleeping all day in the thick tufts of large bamboos, in the heart of the most impenetrable forests. The name Aye-Aye bestowed on it by Sonnerat as the native name is merely a common exclamation of the Malagase when they see anything strange.

Of the Bats, one new species *Pteropus Dupreanus* is proposed, allied to *P. stramineus*, Geoff., of India. It was rare, having been only seen once. M. Schlegel considers that this new species, *P. stramineus*, and the *P. paleaceus*, Peters, may all be the same species; and also suggests that this species may be identical with the *Pteropus medius* of the continent of India, and supports his view of their variability by reference to three species from Halma-hera, Ceram, and Arou.

The birds noticed in this part are all falcons and owls, and the information given regarding them is confined to their specific characters, their affinity to other species, and a few notes regarding their distribution. Beautiful plates of some species not yet noticed in the text accompany the livraison.