

THE QUEEREST OF CREATURES.—II.

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(Continued from page 11, January 7.)

Among the puzzling adaptive resemblances of lemurs to animals quite low in the scale of animated existence, few, perhaps, are more curious and interesting than those developed by the Lemuridæ called by the well-known naturalist Cuming the Malmag (*Tarsius spectrum*), which in its adaptation to the exclusively arboreal life common to all but one species only of the Lemuroidæ has achieved a most singular approach in form and in habit to a tree toad.

The absence of any perceptible neck, the short body shaped like a lemon, the grotesquely elongated hind legs and slender ankles of the creature, peculiarities it shares with the batrachian, form an adaptive parallelism that is completed by the button-like pads at the ends of its long fingers and toes, in form and function apparently answering to those which enable the tree toad to cling securely to the upright trunk of a tree or even to the under side of a projecting bough. The lemurs are the only mammals now existing that possess such peculiarly-formed digits.

Indeed, it may well be believed that were it not for its long tail and its ears, and the fact that it is covered with fur, it might, as it hops about in its leafy retreats, be easily mistaken for a specimen of some very large species of Hylidæ. This curious little creature can now be considered as having been adopted by Uncle Sam, and of making one among the many odd specimens of living beings lately added to our fauna, for it is an inhabitant, among other places, of the Philippine Islands.

But the Lemuroidæ have taken ideas and suggestions from the bird as well as from the reptile and from the batrachian.

There are several species of trim, very pretty, very active, and very clever little lemurs called Cheirogales, which build their nests, not at all like those of squirrels, mice, or other so-called nest-building mammals, but nests in every way resembling those of birds, constructed of small, flexible twigs, leaves, and tendrils, with a depression in the center in which, upon a bed of soft hair, are born their naked nestlings, that are fed, protected, and cared for exactly as are those of birds, until old enough to venture out into the world to seek their own fortunes. The smallest of these dainty little creatures is called by the French *le rat de Madagascar*, a name that certainly cannot be said to do them justice. They might with more propriety be called jeweled-eyed lemurs, for they have probably the most resplendent eyes of any living mammal; the tapetum is so large and reflects so much light in the dusk, that the cheirogale appears to possess a pair of magnificent opals for organs of vision.

They are interesting also because of the peculiar habit they indulge in of sleeping through the hottest and driest of the summer months, as many of the mammals in colder climates hibernate in the winter. It is rather remarkable too that they seem to have hit upon the same expedient to lay up a store of nutriment, to be drawn upon when required, as the Syrian sheep (*Ovis aries steatopyga*) at the base of their tails.

Domestication has rendered the fat tails of the sheep of use to their masters only, but the fat-tailed cheirogales depend entirely upon their caudal appendages for sustenance during their long summer fast. They sleep in their nests, and as they retire to them to begin their aestivation, the bases of their long tails are swollen and bulbous; but when they leave their nests at the beginning of the rainy season in Madagascar, they are, both tail and body, emaciated to the last degree.

The little animals are but four inches long, but their tails are fully two inches longer than their bodies. The character of dentition, usually of such specific and distinctly defined methods of arrangement in mammals as to form a reliable basis upon which to build a judgment of family, genera, and species, is among the Lemuridæ very erratic. One member of the

numerous to be indicated here; to do justice to these, and to describe the strange habits of the different members of the group, although so little is yet known of many species, would require a volume which, if properly written, could not fail to prove a most interesting one. Every peculiarity of every species has a meaning and a history of its own, which if justly worked out might go far to determine the inter-relation of laws by which the same environment has produced such widely varying results.

Whatever the nature of the force that, working so differently in different members of the lemuroid group of animals, adapts them all so completely and so perfectly to the same surroundings, the trend of the progress made is surely, however slowly, toward the final destruction of the order; for specializations, in proportion to the extent to which they are carried, unfit the animals specialized to survive changes of environment, of climate, food supply, means of escape from dangerous enemies, and disease-breeding conditions, often too subtle to be defined.

While the lemur, at the foot of the order of Primates, has been the most plastic of the three groups of mammals which constitute it in yielding to this force, impelling toward extreme specialization, man has of all mammals most stubbornly and successfully resisted it, and has in consequence become the most cosmopolitan of animals.

Much difficulty, up to the present day has been experienced in obtaining live specimens of the Lemuridæ, but the situation since the protectorate established by France over Madagascar and the incursion of scientific naturalists into the wilder parts of Asia and Africa, no longer presents the insurmountable obstacles which formerly attended any attempt to study the rarer species. Specimens are obtained, and the untiring energy of Mr. W. T. Hornaday, seconded by his colleagues, has already succeeded in placing a number of these curious animals on exhibition, which, notwithstanding their somnolence, are well worth a visit to the New York Zoological Park or to other collections of living animals in other cities where they are to be found. Lemurs are well worth the careful attention that

is now being given them, both with respect to their physical structure and their habits.

If the theory of evolution is accepted, it cannot fail to convince the student that we have in this order of animals survivals of extremely ancient types of mammals—types, it is interesting to believe, very nearly akin to those from which have arisen all existing families of the order of Primates, which as the reader may remind himself, includes man as well as monkey.

A Prehistoric Cave Dwelling.

A prehistoric cave dwelling has recently been discovered near Winznau, on Lake Lucerne, in Switzerland. The entrance to this cavern has been blocked for ages by the accumulation of falling rocks and earth. Its existence being known, a party of antiquarians had the entrance passage into the cavern cleared of obstructions, and a grotto or series of caves, dating to the Stone period, was laid bare. A fine collection of stone implements, including knives, axes, and spears, gigantic shells rudely ornamented, evidently drinking vessels and dishes, was discovered. In one chamber of the cavern the explorers found the remains of the bones of many extinct animals; while one section of the cave, which is believed to have been the dwelling of an important family in the Stone age, had evidently served as a workshop for the stonecutters, for here were found many stones in the process of being shaped into implements.



A WANTIBO (*PERIODICTICUS CALABARENSIS*).

group, for instance *Chyromys Madagascariensis*, the aye-aye, exhibits exactly the dentition properly belonging to the order of gnawers, the rodents, and on account of this peculiarity was placed by Buffon among the jerboas or jumping mice; by Cuvier among the squirrels (although he afterward spoke of it as a doubtful animal); and by zoologists generally up to the time of Owen, among rats and beavers as an undeniable rodent. Its physical structure, however, apart from its adult dentition, proves it to be a lemur which has appropriated an adaptive suggestion from another order of mammals. The grotesque and excessive specializations exhibited by the Lemuroidæ are far too



SPECTER TARSIIUS (*TARSIIUS SPECTRUM*).