

THE QUEEREST OF CREATURES.—I.

BY J. CARTER BEARD.

The merely casual visitor to the New York Zoological Park hardly finds much entertainment in watching the lemurs as they lie sound asleep all day long distributed about the ample inclosure allotted to them. But as daylight fades, as the last visitor leaves the building devoted to the Primates, and all the baboons, and the red-faced Japanese monkey, and the green monkeys, and the prehensile-tailed American apes lie fast asleep, the fun in the lemur cage begins. Such kangaroo-like hopping about and leaping from perch to perch, such odd gestures, eccentric gaits, and queer attitudes, and such wide and lofty tumbling surely are never seen elsewhere. Though there are only the nocturnal new world monkeys to watch and applaud, if not to emulate, their feats, the lemurs carry on a regular circus until the dawn of another day sends them back to their slumbers again.

The sole exception to this state of affairs is perhaps that of the common ring-tailed or cat lemur (*Lemur catta*) which at any time of day is quite ready to be fed or noticed, and which goes to bed with monkeydom in general. The ring-tailed lemur is an exception to the rest of his tribe, not only in keeping awake during the day, but in belonging to a species that lives upon the surface of the ground, among rocks, instead of passing an entire lifetime in the tree-tops.

The great tropical woodlands, wide as the torrid zone, shelter strange creatures, which, in addition to their extraordinary appearance and habits, exhibit puzzling structural similitudes to others belonging to different orders and even to a different class. In some cases, these similar creatures live upon opposite sides of the globe. The name Phosimii applied to the lemurs and to lemur-like mammals, as well as the German name Halbaffen (half apes) indicates the position of the Lemuridæ at the foot of the Primates, and also the fact that they are half apes only, the other half being peculiar to the species and different from all other mammals, or showing apparent affinities to alien groups of animals, sometimes much lower than themselves. There are, for instance, among the lemurs, species in which the different parts of the hands and the feet are so divided as to form two lobes, resembling in shape and in function those of the chameleon. The lemur thus distinguished creep very slowly toward their prey, taking a secure hold of a supporting limb or branch with one hand, or with one foot, before bringing forward another, just as does the chameleon. The round, protruding eyes and the slow mechanical movements of the mammal remind one of the queer lizard mentioned, while the insect-feeding habits of both are identical, except, indeed, that the chameleon hunts by day and the lemur by night. The latter even possesses a second auxiliary tongue, which can have no other purpose than to aid the creature in catching flies, just as the development of such a member assists the insect-catching lizard.

A very curious formation, consisting of an arrangement of the blood vessels, called by recent physiologists "the wonderful network" (*rete mirabile*) belongs to all species of slow lemurs. The limbs of animals having this peculiarity, instead of being supplied with arteries and with veins with long branches, as is the case with mammals generally, are furnished with two series of blood vessels lying closely parallel to each other, one series being of hair-like tenuity and the other somewhat larger, joined to the first by short, tubular projections. Such an arrangement of the circu-

latory system occurs in the legs and the arms of the animals under consideration and nowhere else except, strange to say, quite on the other side of the world, in the sloths of South America. To animals possessing it, this *rete* gives great muscular power in executing very deliberate, gradual, almost imperceptible motion continued for a long time.

Like the bats among the mammals, and the blue crowned parakeet among the birds, the lemurid possessing a *rete mirabile*, or plexus, as it is sometimes called, reposes and sleeps hanging from a bough, head downward. An automatic arrangement of the flexor muscles above the knee, analogous to that which adapts the claws of birds to retain their grasp upon a limb, or the bats to hang suspended from a bough, enables these animals to do this. The *rete mirabile* assists in making this, their favorite position, the one in which they can secure the most perfect repose.

The lemurids thus constituted are called the slow lemurs, and well deserve the name. It is possible that they are the slowest of mammals. The fact may be

If its rations did not largely consist of vegetation, leaves, tender shoots, and fruits, it might be somewhat difficult to understand how, with the method described, which is without doubt its habitual manner of capturing its supply of animal food, it could possibly escape starvation. Fortunately for Tardigradus, caterpillars, larvæ of various kinds, quiescent moths, as well as birds' eggs and young birds, exist in sufficient numbers in the trees where he takes up his quarters, to enable him to vary his vegetable diet.

The adaptive parallelism between these animals and the sloths is by no means limited to the arrangement of the blood vessels in the limbs and the consequent slowness of their movements. Their postures, when asleep, their exclusively arboreal life, their excessive awkwardness, and almost entire helplessness upon the ground, and the abortion of the tail and of certain of the digits upon the hands and the feet, as well as the exceptional form of the placenta, which is shared by no other kinds of mammals, are all links uniting the families of the Bradypodidæ and the Lemuroidæ.

The nocturnal habits of lemurs are shared, of course, not only by the sloths, but by a great number of other animals; but the peculiarity of adaptation to nocturnal vision in the eye of a lemur more particularly resembles that in the cat and the owl. As is the case with the owls and the cats, the membrane around the pupil of the eyes enlarges or contracts automatically, making the "black spot," the pupil of the eye, larger or smaller in proportion to the light to be admitted. The pupil may be called the window of the eye, and the iris, the membrane around it, the curtains that shade the eye.

In sunlight these curtains are almost wholly closed, shutting out the superfluous and injurious glare; but in the evening they are drawn aside to admit all the light possible, thus contracting the part of the pupil visible until it appears a mere slit, or enlarging it until it occupies the whole or nearly the whole of the eye-space. But besides this, there is what is called the tapetum, an area in the colored coat of the eye which acts as a concave reflector, collecting and making the most of the faintest glimmer of light, so that at times the eyes of animals possessing it glow in the dark with what appears a phosphorescent luster. In addition to all this, there is in the slow lemur an arrangement of unequally developed fibers encircling the lids, which cause them to close obliquely outward and inward instead of shutting down from above in the usual way. This gives the slow lemur the very strange, uncanny expression peculiar to the

creature when seen by daylight.

(To be continued.)

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THE SLOW LORIS (*Nycticibus tardigradus*.)

This is said to be the slowest-moving animal in existence.



RING-TAILED LEMUR (*Lemur catta*).

Unlike most lemurs this variety hunts during the daytime and lives among rocks and caves instead of upon treetops.

stated, in order to allow the reader to appreciate properly the extreme slowness of these animals, that one of them, not belonging to the slowest species of the group, when timed, took exactly thirty-two minutes and three seconds in moving across a space of four feet toward a roach that it was endeavoring to capture.

The particular animal referred to was a slow-paced loris (*Nycticibus tardigradus*) belonging to an Asiatic genus that has quite a considerable range, extending as it does from Java, and Sumatra, and Borneo, and quite possibly some of the Philippine Islands, through parts of Hindostan. When its progress was timed, it advanced "within ten or twelve inches of its quarry, rested upon its hands, drew its hind feet gradually forward until almost under its breast, very slowly and cautiously raised itself upright into a standing position, balancing awkwardly with uplifted arms, and then threw itself bodily—not upon the insect, which was off and away like an arrow from a Tartar's bow, but upon the spot the roach had occupied half a second before."