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I.

The Mammals of the Malay Peninsula.

PART II.

**CARNIVORA** :—Probably there is no part of the world which for its size contains so many animals of this order as the Malay Peninsula. Very little is known of the habits of most in the wild state, since almost all are nocturnal and most live concealed all day in the masses of creepers at the tops of the bigger trees.

The tiger or "Rimau" (*Felis tigris*) is still over-plentiful in Singapore, and few of the larger forests are without one or more for long; but so dense is the undergrowth, and so quiet is the animal, that it is rarely seen and very seldom shot. It inhabits the more open country and small patches of forest. In the dense hill-forests of the interior it is not usually found, and is replaced by the black panther. The animals are seldom very large, and are light coloured. They habitually swim over to Singapore, across the Johore Strait, usually by way of the intermediate islands of Pulau Ubin and Pulau Tekong. They make the passage at night, landing in the early morning. As so much of the coast is mangrove swamp, and the animals do not risk going through the mud, they are only able to cross where the shores are sandy, and thus they have regular starting and landing places. They often come over to Singapore for breeding, and the slopes of the wooded hill Bukit Timah and the sandy woods of Changi, near one of their favourite landing places, are the usual localities selected. The young are brought forth in December or January as a rule, and parents and young remain together in the same locality till about Easter, when, as by this time the food in the locality is exhausted, the family scatters, and either wanders over Singapore, or, if the young are old enough, swims back to Johore.

During the day the tiger remains sleeping in the shady parts of the jungle, unless the weather is wet and windy, when it becomes restless and wanders about. About four or five o'clock it rouses itself and begins to roam about in search of prey, continuing its walk till about eight o'clock in the morning, when it again retires to sleep. When very hungry it will seek food in the daytime, and has been known to attack bullock carts in broad daylight in Malacca. It lives for the most part on pigs, wild and tame, deer, dogs, fowls, and

mousedeer, but it has also been seen in the mud of a mangrove swamp digging up and devouring shell-fish.

When hungry the tigers are very bold; thus, on one occasion, a tiger invaded the house of a European near Singapore in the night and stole a joint of beef which was in the kitchen. One night a tiger entered the open door of a Chinese hut on the edge of the jungle in Pulau Ubin, and walking through the ashes of the fire (where I saw its footmarks), broke through the lattice-work wall of the house and went away, to the relief of the Chinaman. The following night four tigers walked up the steps of another house close by, apparently in search of the owner or his dog; by breaking through the back of the house the inhabitants managed to escape, leaving the house to the tigers.

The tigers are usually quite harmless to human beings, but now and again take them. Wallace mentions that in his time a man a day was killed in Singapore. This is easily credible, the forests were then being cut down, and many Chinese were employed in this work, and being scattered over the jungle, were doubtless easily taken. In Singapore of late, till the last two years, the average was one native every two months. The number of deaths from tigers given by Wallace and Jagor has been ridiculed as improbable by some writers, who appear to have derived their information from the Police Reports, ignorant of the fact that many such deaths do not get reported to the police for the following reason. The chief people killed are the Chinese gambir- and pepper-coolies. Now, on a Chinese plantation, coolies are not allowed to talk of tigers, for fear of frightening each other. Even if a tiger is seen, a coolie is not allowed to mention it, and, if a man is killed, he is buried quietly and a false return of death given if possible. This is done to prevent the coolies from being frightened and leaving the plantation.

The two popular fallacies still to be found in some Natural History books, that a tiger when once he has attacked and eaten man becomes a man-eater and that it is only very aged and toothless tigers which devour men, have elsewhere been shown to be false. Sometimes one or a couple of tigers will take to man-eating regularly, but this is not common here, and has never happened as far as I know in Singapore, while those which have done so and have afterwards been shot have usually been found to be fine young beasts. The Malays often talk of the "Rimau Kramat," a sacred tiger, which is stated to be a very old hairless and toothless tiger, perfectly harmless and quiet. I have been shown footprints of very large animals said to be "Rimau Kramat."

As has been said, it is usually Chinese coolies who are taken by tigers. Working early and late in the gambir-fields, their bare brown skins are sometimes mistaken by the tiger for those of the deer which often come in the dusk or at dawn to browse on the gambir shoots. Rushing on the unsuspecting coolie from the long grass

or scrub where he has been lying in ambush, the tiger strikes him dead with one blow of the paw on the shoulder. Sometimes the body is left untouched, often it is dragged to the jungle and partially devoured, the thighs and throat being first eaten. It appears to be rather an exception here for a tiger to return to the kill.

Sometimes a man is watched by a tiger apparently for some days before the latter can make up his mind to take him, and at times is stalked from a considerable distance. The following is an instance of a fairly common kind of occurrence which took place in Singapore in 1890. Two Chinese coolies were returning from a gambir-field at six p.m.; one, delaying for an instant, did not overtake his companion, who presently missing him, called out, but got no answer, and so went on to the house. After a short time, being alarmed, he, with his companions, returned to the spot with lights—for it was by this time dark—and finding a pool of blood, all ran back to the house. Next morning the body of the man was found in the jungle, lying on the face, with the thighs eaten. The tiger must have been stalking the men from the patch of jungle, and must have crept up to them through the gambir-bushes for fully five hundred yards, and then struck the coolie dead noiselessly by the side of his companion. The body was removed to the house, and I was informed that the tiger visited the house the next night and took a fowl away, and continued to come each evening till the body was taken to town for burial. Though the tiger remained for at least some weeks in the same jungle, it never attacked any more of the coolies.

The Malays have many superstitions and stories about tigers. Certain people are supposed to have the power of turning into tigers for a short time, and resuming their human form at pleasure. The transformation commences tail first, and the human tiger is so completely changed that not only has it all the appearance and actions of the tiger, but on resuming its human form it is quite unconscious of what it has been doing in the tiger state. A much dreaded form of demon is that of a headless tiger which is supposed to be seen rambling about at night.

The black panther (*Felis pardus* var.) is called "Rimau Akar" (*lit.* tiger of the Lianas) by the Malays, probably because it lives in the masses of creepers in the big trees, though I have no evidence of its being arboreal. It is said to have occurred in Singapore, but this appears doubtful. It is abundant in Johore, and formerly occurred in Pulau Ubin between Singapore and Johore. It appears to go further into the hill-woods of the interior than the tiger. Very little seems to be known of its habits. It is quite harmless to man unless wounded, and lives chiefly on goats, fowls, and dogs. In captivity it is always very ferocious, and never appears to be at all tamable. The spotted form is at any rate rare in the south of the Peninsula if it occurs at all, but it appears to be fairly common in Perak and the northern part of the Peninsula. The more slender form, commonly

called the leopard in opposition to the short thick panther, is said to occur in the Peninsula. The relations of these forms or subspecies in the Malayan region are well worth the study of local naturalists.

The smaller cats are very numerous in the Peninsula, but owing to their nocturnal habits very little is known of them in the wild state. They appear to live all day in holes in trees or high up among the creepers, coming out at dusk in search of prey. In captivity they usually remain motionless all day. A *Felis planiceps* which I have in captivity, remains in one corner of its cage, without moving, till night, when it comes out to take its food. The commonest wild cat is *F. bengalensis*. I have seen it in Singapore, and it appears to be abundant in the Peninsula and to be often trapped. *F. tristis* has been taken in Malacca; and I had a fine golden cat, *F. temminckii*, from Pahang. The latter was very quiet in captivity, but was never at all tame. When taken young *F. bengalensis* becomes very tame and playful, and lives a long time in captivity, but trapped adults are always ferocious and ill-tempered. The native name for a cat is Kuching; wild ones are called Kuching Hutan (wood-cats) and the large ones Kuching Rimau (tiger-cats).

The Viverridæ are well represented here. The commonest species is *Viverra malaccensis*, the Musang. It inhabits hollow trees or masses of creepers, or very commonly takes up its abode in the roof of a house, leaving its hiding place in the dusk and rambling about in search of food. It is very regular in its habits. I have had no less than seven living in the roof of the house at one time. The animals used to leave the house about six p.m., descending by one of the posts of the house, and would return at nine o'clock, leaving again later in the night, and coming back at about five a.m. Once I saw Musangs moving about in the top of a tree at midday; they were an old one and one or more young, which the adult was apparently teaching to walk on the boughs. Musangs are very clever at climbing, far more so than a cat. A pet one, belonging to one of the officers, used to walk skilfully on a very thin string; put on the tightened twine, it would grasp it with its fore-paws and draw itself up, and then balance itself by waving its tail round and round, or even by clasping the string with its tail, which is slightly prehensile; when it had got its balance it would walk along the string briskly, carrying the tail free. The Musang feeds chiefly on fruit, but also devours birds, and is a great nuisance to pigeon- and chicken-fanciers. It is very serviceable, however, in keeping away rats from a house.

It plays an important part in the dispersal of seeds, eating a great deal of fruit, and dropping the seeds on paths and bare places on the ground, where they speedily spring up. It seems particularly partial to the fruit of *Strychnos tieute*, in which the seeds are enclosed in a very bitter pulp, apparently rich in brucine. It is most troublesome to fruit growers, and especially in the coffee-fields, where it devours the coffee-berries and passes the seeds uninjured. As it

always selects the best berries, the seed passed by it is usually considered the best for planting, and indeed has fetched a high price in the coffee-markets. Musangs are usually easily trapped, but after a few have been caught the rest become wary. The common form of trap is a hemicylinder of sticks about 3 feet long and about 8 inches across. This is propped up with small sticks after the manner of a figure-of-four trap, and some heavy stones put upon it. A plantain is put inside as bait, and the civet on entering the trap to eat it touches the supporting sticks which let fall the cage; and the stones prevent the civet from lifting it up again. Other modifications of this trap are also used. The civet cat is very easily tamed, especially when caught young, and makes a clever and intelligent pet.

The larger civets, *V. zibetha* and *V. tangalunga*, the "Musang Jebat," do not, I believe, occur wild in Singapore, but are common in the Peninsula, and are often trapped and brought for sale. They are never at all docile, and seldom live long in captivity.

The Water-mongoose (*Herpestes brachyurus*) is very rare in the Peninsula. A living example was presented to the Gardens by Dr. Johnston, who obtained it in Tringganu. The natives called it "Musang Babi," Pig-civet, because it bristled up its hair when excited and resembled somewhat a very small wild pig. It lives exclusively on fish, refusing meat, and is very fond of bathing. I know nothing more of its habits, and few natives have ever seen it.

The Bear-cat (*Arctictis binturong*), the "Binturong" or "Menurong" of the Malays, is generally obtained in Malacca, and is sometimes kept as a pet. It is easily domesticated, and becomes very affectionate, and will follow its master like a dog. It feeds on fruit, also taking small birds, and is of arboreal habits, climbing about well and aiding itself by its prehensile tail, which it uses chiefly to lower itself from branch to branch. When suspicious it growls fiercely, ending up with a kind of barking spit; when pleased it makes a humming noise. It appears very nervous of snakes, turning its face away and protecting it with its fore-paws, whence I presume it is not a snake-eater. From its enemies it defends itself by trotting quickly forward and biting viciously. When very happy it jumps about with all four feet off the ground in a very comical manner.

The Common Bear (*Helarctos malayanus*), "Bruang" of the Malays, is so well known that it is hardly necessary to say anything about it. It is tolerably common in the Peninsula, but is absent from Singapore. Formerly, rewards were offered for its destruction, but it appears to be quite harmless to man unless wounded, when it becomes dangerous. It is, however, a troublesome enemy to fruit growers near the jungle in which it lives, being very partial to durians. A tame one, when it got loose, would often climb up a tree, and breaking off the branches, make a kind of nest in which it would sit for a few minutes; but I believe that in a wild state it lives, at least usually, in holes dug in the ground, or among ferns and bushes. It is exceedingly

powerful for its size, and the Malays say that if it can get its back against a tree it is a match for the tiger.

Two species of otter have been met with in Singapore, viz., *Lutra sumatrana* and *L. leptonyx*; but they seem to be rare, and little is known about them. The Malays often call them "Anjing Ayer" (water-dogs).

Very little is known about the wild dogs of the Peninsula. The natives say that there are two species, one larger than the other, and that the smaller one climbs trees. One species seems certainly to be *Cyon rutilans*. I have had three wild dogs in confinement, one of which seemed to be decidedly a larger-built animal than the two received later. It became tame enough to touch. The cry was a yapping followed by a howl. It was very active, running up the side-walls of its cage to a height of about 12 feet. It never wagged its tail, but in the presence of other dogs arched it gracefully. These animals are said to hunt in packs, but are very rarely seen. I once found the tracks of a single one following those of a deer. The native name for them is "Anjing Hutan" (wood-dogs).

**Rodentia** :—These are tolerably numerous; but the smaller ones, rats and mice, are not at all easy to collect or study. I have attempted to trap them in the jungles, but, when caught, wild cats or civets constantly devour them in the traps ere morning, and the Malays are not clever, like the Dyaks, in catching them.

The Common Porcupine, "Landak" (*Hystrix leucura*), is still common in Singapore, but a number must be destroyed by the burning of the open country, in which they chiefly live. They are very destructive to the pineapples. The tiger kills and eats them, and I have found the remains of one so destroyed. The brush-tailed Porcupine (*Atherura macrura*) is not a native of Singapore, so far as is known; it inhabits the limestone caves in Pahang.

Squirrels are very common and easily observed, but the number of species is not very great. Two species, *Sciurus tenuis* and *S. vittatus*, are very abundant in woods and gardens. *S. bicolor* is rarer, and inhabits the thicker jungles. I have seen several other species in Singapore which I was unable to secure. *S. tenuis* is a very small and active squirrel, very abundant and destructive in the Botanic Gardens. It feeds chiefly on acorns and chestnuts, and plays an important part in the dispersal of seed. When it gathers an acorn or a bunch of chestnuts, it runs off to some distance to eat it, holding it in its mouth. Hanging head downwards on the bark of a tree, it begins to nibble the acorn, which frequently slips from its paws and rolls away unhurt. Some of the acorns seem adapted for this slipping, being covered with a thin, smooth, silky coat; in other cases, the fruit is so smooth and rounded that the squirrel can only bite it at the base, and they frequently begin to bite the acorn cup to get at this part, with the result that the acorn slips suddenly out and falls to the ground. Fuller notes as to the action of squirrels on the

dispersal of seed will be found in a paper on the Dispersal of Seeds by Mammals in the *Journal of the Straits Asiatic Society*. This squirrel utters a sharp, bird-like, twittering cry when playing about or when alarmed, and also a double-noted cry, "Atcheh, Atcheh," when pairing. I have seen a pair of squirrels fighting briskly; they gripped hold of each other and fell in a ball from the upper boughs of a tree, but before reaching the ground separated and clung to the lower boughs, rushed up to the top, closed again, and again fell, till at last one fell on the ground and rushed off, pursued by the other. The nest is often made in a hollow tree, and is a large structure made of strips of bark and thin twigs, and lined inside with soft bast, which the squirrel tears off boughs of trees with its teeth. I have also found nests in the roof of a shed, in a plant of the prickly *Bromelia pinguis*, and in an Elk's-horn fern (*Platyceerium*) which was suspended by a wire in a plant-house. In this nest was a single young one, which, on the fern having been removed from the house and put in another part of the garden, was found to have been carried away next day by the mother squirrel. The nest in the *Bromelia* plant was quite exposed and only about two feet from the ground, the squirrel trusting to the thorns on the edge of the leaves to protect its young, of which there were two. The little ones were covered with short, smooth, grey fur, and looked very unlike squirrels. *S. notatus* is a bigger squirrel, grey with a red breast. It is less common than *S. tenuis*, but far from rare. It has much the same habits, but does not hang head downwards to feed. Its cry resembles the striking of two pieces of wood rapidly together, and can be heard a long way off. It is easily kept in confinement and readily tamable. *S. prevosti*, Desm., Raffles' Squirrel, one of the most beautiful kinds in the world, is common in the Malay Peninsula, but I never saw it in Singapore. Its brilliant colouring—black, red, and white—makes it very attractive, and it is easily tamed. All these squirrels are most destructive to coco-nuts. Biting round holes in them and getting inside, they soon clean out the flesh; they even sometimes put their nests inside the cleaned-out nut. They also destroy a great deal of other fruits, especially durians. The small boys in Kedah shoot them with stones from pellet-bows made of bamboo.

*S. bicolor* is a strictly arboreal squirrel which lives in the tops of the higher trees in the thick jungles. It is very variable in colour. The commonest form in Singapore is black with a cream-coloured belly. In the Peninsula it is usually entirely cream-coloured. It is remarkably docile, but much less active than the smaller species. When eating, this species sits transversely on a bough, grasping it with its hind feet, the head and body hanging down on one side and the tail on the other. It eats fruits of different kinds and also buds and leaves.

The red Flying-squirrel, *Pteromys nitidus* (Tupai Belang), is still common in Singapore, inhabiting the thicker jungles. It remains

quite quiet during the day, but at dusk begins to move about. It climbs with some clumsiness to a high point on a tree, and then dives off to the next, up which it climbs again, and again dives off, and so travels to its feeding ground. It appears to be very fond of coconuts, and will attack any that are near the jungles which it inhabits.

H. N. RIDLEY.

*(To be continued.)*