

Plate 6. The Pangolin, *Manis pentadactyla dalmanni*, Sundevall.

## THE PANGOLIN OR SCALY ANT-EATER.

G. A. C. HERKLOTS.

The Pangolin and the Otter are now completely protected by law in the Colony of Hong Kong (7) and the Island of Hong Kong has been made a sanctuary for birds by an amendment to the "Wild Birds" Ordinance (8). "The effect of the above amendment is that hereafter no bird of any description other than magpies, kites and hawks may be killed, wounded or taken on the Island of Hong Kong." The list of wild plants protected by law has also been augmented considerably (9) pp. 413, 414. A short account of the steps that have led to this addition and these changes in the local ordinances governing the protection of the local fauna and flora may be of interest.

In 1931 there was held in Paris the International Congress for the Protection of Nature; this Congress made certain recommendations one of which resulted in the holding of another conference. In November 1933 there was held in London the International Conference for the Protection of the Fauna and Flora of Africa and the Agreements concluded at this conference were published, (10). This Convention was ratified by the United Kingdom, Egypt, the Anglo-Egyptian Sudan, the Union of South Africa and Belgium and entered into force on the 14th of January 1936. It is of interest to note that the Pangolin—*Manis* all species, is listed in Class B, *loc. cit.* p. 54. "Animals belonging to the species mentioned in Class B, whilst not requiring such rigorous protection as those mentioned in Class A, shall not be hunted, killed, or captured, even by natives, except under special licence granted by the competent authorities." *loc. cit.* p. 30.

The question of the protection of the fauna and flora of Africa having received attention, attention was next directed to the question of affording similar protection in other parts of the world. The steps taken and the recommendations so far made are at the moment confidential and it is not permissible to refer to them here; but it is hoped that they will be made public in the near future. One result of the new interest taken in this subject is the response made by the Hong Kong Government in respect to the ordinances to which reference has already been made.

The Pangolin or Scaly Ant-eater is the most primitive mammal living in China. It belongs to the third most primitive order of mammals, the Edentata and is the only Asiatic representative of this order. The two most primitive orders, the Egg-laying mammals and the Marsupials (except in Celebes and adjacent islands) are not found in Asia. The Pangolin is *not* an Armadillo though both, together with Sloths, Ant-eaters, and Ant-bears, belong to the same order. Armadillos are confined to the New World whereas Pangolins are only found in the Old World. The one genus *Manis* has four species in Africa and three in Asia comprising one Indian, one Malayan and one Chinese species. In the African species external ears are absent and there are no hairs between the scales; in the Asiatic species the external ear is small but quite noticeable and there are a few hairs between the scales covering the back. In the Malayan species the claws of the fore feet are only slightly longer than those of the hind feet; in the Indian and

Chinese species the claws on the fore feet are twice the length of those on the hind feet. The small external ears, the small eyes and the long claws on the fore feet are clearly shown in the photographs on plates 6 and 7.

A few other curious features of this most primitive animal might be mentioned. The overlapping scales are formed from hairs glued together, (there are no dermal plates such as underlie the horny scales of the Armadillo,) very much in the same manner as the horn of the Rhinoceros which has no bony core. The adult Pangolin has no teeth, in consequence it cannot bite or eat hard food, and it has a long extensile tongue which can be protruded for a considerable distance through its small tube-like mouth. The tail is very powerful and to a considerable extent the tip is prehensile; the photographs at the bottom of plate 7, illustrate the tail and shew that the easiest way in which to lift the animal is by this organ. The tail is covered above and below by overlapping scales and may be used for protection for the creature can roll up into a ball covering its face with its tail,—see the middle photograph on plate 6.

Mr. R. Swinhoe kept two adults and three young alive for some days but he never heard them utter any cry, not even a moan. "The old ones had dim watery eyes and were rather slow in their movements, walking on the sides of the hind feet and on the tips of the claws of the fore feet. The young were brighter-eyed and active, running about the room in all directions, standing on their hind legs and assuming a variety of curious positions; but their habit of walking was essentially the same as in the adults." (6) p. 650. Notice the position of the claws on the fore feet of the young Pangolin at the top of plate 6, and compare with the photograph of the mature specimen at the foot of the same plate. Here the claws of the fore feet are turned back and the animal is walking on the backs of the claws of the fore feet and on the soles of the hind feet. Sowerby writes, "When progressing on all fours, it turns the claws of the front feet backward, walking on the backs of the claws. The hind foot is placed squarely on the ground." (4), p. 40.

A fully developed male may be nearly three feet in total length. The scales are purplish brown tipped with yellowish grey; in the young specimen, plate 7, right lower figure, the scales may be dappled. The face and fleshy parts are pale pinkish white, the hairs on the underparts are of a light reddish sandy colour.

The animal is nocturnal and is in consequence rarely seen abroad in the day-time when it spends the time at the foot of a deep burrow the mouth of which is blocked with earth.

"The food of the animal consists of white-ants, or termites, and the larvae of true ants, bees and wasps. It will not eat the adults of true ants or other insects, except the soft-bodied termites. To secure its food it is armed with powerful claws with which it can dig deeply into the earth after termites or tear away the outer parts of ant-laden trees. Its long sticky tongue darts with lightening rapidity down the numerous galleries of the insects' homes, licking up the juicy white grubs. To get at the termites-galleries and ants' nests in the upper branches of trees, the Pangolin is able to climb

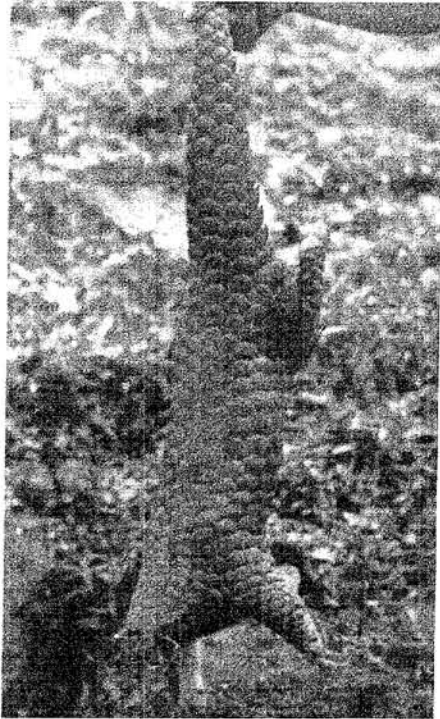
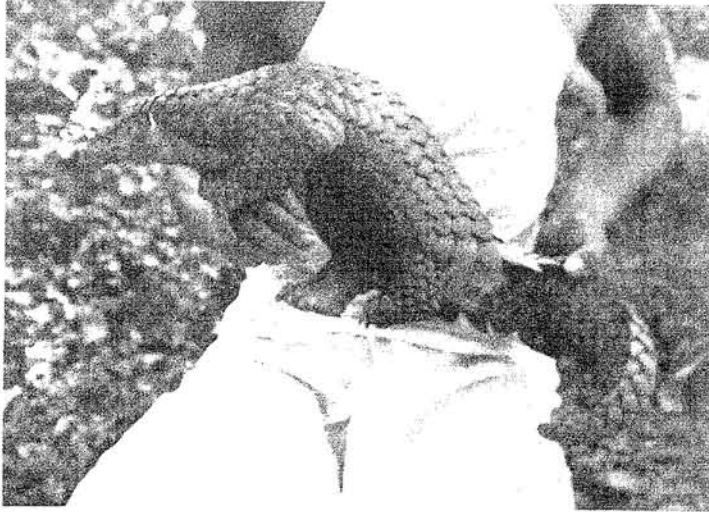


Plate 7. The Pangolin, *Manis pentadactyla daimanni*, Sundevall.

with extraordinary agility considering its clumsiness on the ground. In climbing it uses its tail, which is to a considerable extent prehensile, holding to branches with it." (4), p. 39.

#### THE NEED FOR PROTECTION.

A stranger to Hong Kong might wonder why this harmless, inoffensive, nocturnal creature, which lives largely on 'white-ants,' the worst pest of the tropics, should need protection. Unfortunately for the animal, however, the Chinese believe that its scales have remarkable medicinal properties, the animal itself is also eaten. So keen are the Chinese on obtaining Pangolin-scales that they do not rely solely on the animals captured in their own country but import quantities of scales from abroad. "In 1925 ant-eater-scales were exported from Java to a value of 3,700 guilders, in spite of the fact that the Pangolin had been mentioned expressly amongst the animals to be protected at any time. A pikul (about 60 kilos) of ant-eater-scales at Batavia costs about 125 guilders; the value of the average weight of a dry skin with scales is 700 to 800 grams, the scales alone do not weigh more than half a kilo, so yearly between four and five thousand Pangolins are killed, which number for the last year certainly must be doubled. By the newly proposed regulations once again it is forbidden to capture and kill this animal and to export its scales." (1) p. 9. If this regulation has been enforced it will mean that, owing to the curtailment of supplies of Pangolin-scales from the Netherlands Indies, the Chinese will seek other sources of supplies. An immediate result will be greater persecution of Pangolins in South China and of course also in Hong Kong.

Full protection has now been afforded to the Pangolin in the Colony of Hong Kong but it will not be easy to enforce the law in certain parts of the New Territories. At the village markets the Pangolin is no longer openly exposed for sale, nor is the Francolin, but both beast and bird can be purchased by one who knows, if the vendor does not suspect that the purchaser is in league with the police.

The Pangolin has been accused of digging into graves and this argument has been used by villagers against protection. If it is remembered that the Pangolin has no teeth and can only eat small soft-bodied creatures such as termites it will be realized that the animal could not even attempt to eat the bodies or bones of the dead. The animal is a powerful burrower and might well cause disturbance in the grave but this one argument against is more than counter-balanced by the many and cogent arguments in support of its protection.

The Pangolin illustrated in plate 7, upper and lower left figures, was confiscated by the police and sent to the University in the small iron wire cage in which it had been confined. It was photographed before being released on the hillside.

The animal illustrated in plate 6, two lower figures, was found in a nullah on the mainland by the Rev. E. A. Armstrong who photographed it.

The young Pangolin illustrated in plate 6, upper figure and plate 7, lower right figure, was found by the writer near Tai Po on the afternoon

of a day in May. When placed on a rock the animal made no attempt to run away and stood perfectly still for his photograph. Finally he was placed near some thick undergrowth and shooed in, lest some foot-slogging Chinese should collect him for the pot.

#### THE PANGOLIN IN CHINESE MEDICINE.

Professor Bernard Read of the Henry Lester Institute, Shanghai, has delved deeply into the Chinese Literature dealing with the use of animal and vegetable materials in Chinese medicine. The remarks below are taken from one of his papers, (3) pp. 319, 320. *Scales*.—saline, slightly warming and poisonous. The fresh scales are never used, the dried scales are used in a variety of ways according to the prescription, (those from the tail are most potent); they may be roasted, ashed, cooked in oil, butter, vinegar, boys' urine, or roasted with earth or oyster-shells. Medicine for a variety of ills is prepared from the scales. "For excessive nervousness and hysterical crying in children. For women possessed by devils and ogres. For malaria fever. . . . The ash of one big piece is mixed with oyster-shell, seven scorpions' tails, a little musk, linseed oil and wax to form a small rod which is wrapped in cotton and rammed in the ear for ringing sounds and deafness due to sexual weakness. . . . For two months the powdered ash blown into the nose while the patient holds water in the mouth is used to cure eyelashes which curve inwards." *Flesh*.—sweet, astringent, warming, poisonous. "When eaten by rheumatic subjects a few bites will immediately accentuate their trouble and cripple the four extremities. Sufferers from "wind" diseases have poor circulation, pangolin-meat is a strong circulatory stimulant and causes marked disturbance in the system." A scale fixed to a length of bamboo is frequently used for scratching itching surfaces. This is a widespread custom and is referred to by writers other than Read and is known to be prevalent in Hong Kong.

The local name for the Pangolin is 穿山甲 Ch'uan' Shan' Kap, boring-mountain-scale.

The distribution of the three sub-species of the Chinese Pangolin is given by Sowerby, (5) p. 110, as follows *Manis pentadactyla pentadactyla*, Linnaeus,—Formosa; *Manis pentadactyla dalmanni*, Sundevall,—the southern bank of the Yangtse River southward to Kwangtung and Kwangsi; *Manis pentadactyla pusilla*, J. A. Allen,—Hainan.

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- (7) "Wild Animals Protection," Ordinance No. 56 of 1936. The Hong Government Gazette December 31, 1936, p. 1155.
- (8) Amendment to the "Wild Birds" Ordinance No. 15 of 1922. The Hong Kong Government Gazette March 27, 1936, p. 348.
- (9) The "Forestry Ordinance," 1937. The Hong Kong Government Gazette, June 25, 1937, pp. 409-417.
- (10) "Agreements concluded at the International Conference for the protection of the Fauna and Flora of Africa, London, Nov. 8, 1933." H.M. Stationery Office, Cmd. 4453, price 1s. od.

