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PORCUPINES FROM CHINA¹

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The Asiatic Expeditions under the direction of Dr. Roy Chapman Andrews have succeeded in assembling a splendid series of no less than forty porcupines from China, mammals which, on account of their size and the difficulty of capturing and preserving them, are likely to be neglected by collectors. Particular credit is due Mr. Clifford H. Pope who secured the greater part of the specimens. Two genera are represented, the brush-tailed porcupine, *Atherurus*, and the more specialized crested porcupine, currently referred to *Acanthion* although regarded by some as inseparable from *Hystrix*. Both genera are found in China in only the southern half of the country. Mr. Pope's series from the island of Hainan contains eleven old and young of *Acanthion* which prove to constitute a very distinct island form allied to that of the Chinese mainland.

***Atherurus macrourus stevensi* Thomas**

Atherurus stevensi THOMAS, 1925, Proc. Zool. Soc. London, p. 505.

A single male skin without skull from Wanhsien, eastern Szechwan, is apparently a considerable extension northward of the recorded range of the brush-tailed porcupine in China. It agrees with *A. stevensi* Thomas, lately described from Tonkin, in the possession of numerous white woolly hairs among the bases of the spines, particularly noticeable over the shoulders. In typical *A. macrourus* from Malacca these are said to be few and brownish. For the present this Chinese form may therefore be considered the same as that from the extreme southern edge of the country, and is probably best regarded as a northern subspecies of typical *macrourus* of Malacca and the Malay Peninsula.

***Atherurus macrourus hainanus* J. A. Allen**

Atherurus hainanus J. A. ALLEN, 1906, Bull. Amer. Mus. Nat. Hist., XXII, p. 470.

A series of seventeen skins, including a very small young one (April 13), was secured by Mr. Clifford Pope near Nodoo, Hainan, through a

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native hunter. These are very uniform in color, with the spines of the upper surfaces brown, becoming blackish on the back, intermixed with a few long white bristles over the rump. The sides are varied with whitish, each spine with a white tip and base, and brownish central ring. The lower side is soiled whitish. The small size as compared with typical *A. macrourus* is the chief characteristic difference.

***Acanthion subcristatus subcristatus* (Swinhoe)**

Hystrix subcristata SWINHOE, 1870, Proc. Zool. Soc. London, p. 638.

The common porcupine of China and its near relatives differ externally from the crested porcupine of Europe and Africa in the less development of the long erectile dorsal bristles which in the former are confined to a short space on the median part of the neck, with shorter bristles between these and the area of long spikes on the back, whereas in the latter they form a continuous crest from between the eyes to the shoulders. In the skull these eastern members differ in the much less expansion of the nasal cavity, which in typical *Hystrix* is enormously inflated, with the nasals greatly broadened and extended posteriorly so as to encroach upon the frontals. Miller in 1912 ('Mamm. Western Europe,' p. 543) restricted the name *Hystrix* to the European and African species of this type, but more recently Lönnberg (1923, Arkiv f. Zool., XV, No. 18) has advocated that all the short-tailed porcupines be referred to this genus. He recognizes, however, that they may be divided into three groups, according to the method by which the bones surrounding the nasal chamber are modified in its enlargement; but until a comparative study of all the eastern species can be made, it seems permissible to retain the genus *Acanthion* for the Asiatic species with less modified skulls. In young specimens of the Chinese *Acanthion* a striking feature of the skull is the very large size of the interparietal which is pentagonal and with an area as great as the dorsal part of a parietal in a skull 55 mm. long. In an immature *Hystrix galeata* it is a very small triangular bone.

Swinhoe mentions having often heard of the porcupine at Swatow (Kwangtung Province) and at Foochow (Fukien Province), whence he secured a specimen that later became the type of his *Hystrix subcristata*. Lönnberg records specimens from Anwei Province, while the Asiatic Expeditions, in addition to a series from Futsing, Fukien Province, obtained one at Wanhsien, eastern Szechwan, that is similar, and another from Lichiang, Yunnan Province. The last may eventually prove to represent *yunnanensis* Anderson, but the skull is missing. Thomas has shown (Journ. Bombay Nat. Hist. Soc., XXVIII, p. 432) that this name

is valid and applies to a porcupine with short nasals, perhaps representing a species distinct from *A. subcristatus* and closely related to *A. javanicus* of Java, in which the nasals are likewise short. That this type of porcupine was formerly more widespread in China is proved by the discovery of a fossil skull with similar short nasals in Honan Province. This has been named *Hystrix (Acanthion) lagrelii* by Lönnberg (1924, *Palæontologia Sinica*, Ser. C, I, fasc. 3). Although the geologic age of the specimen is not known, its state of preservation suggests that it is not very ancient.

In his list of the mammals of the island of Hainan, Swinhoe (1870, *Proc. Zoöl. Soc. London*, p. 233) further records the finding of a single porcupine quill "in the jungle at Nychow (S. Hainan)," thus establishing the occurrence of *Acanthion* on that island, but it has remained for Mr. Clifford H. Pope of the Third Asiatic Expedition to secure a fine series of skins and skulls from near Nodoo, which on comparison with the series obtained by the same collector in Fukien, are found to represent a well-marked race, here described.

***Acanthion subcristatus papæ*, new subspecies**

Hystrix hodgsoni SWINHOE, 1870, *Proc. Zoöl. Soc. London*, p. 233 (not of Gray).

Hystrix subcristata SWINHOE, 1870, *Proc. Zoöl. Soc. London*, p. 638.

TYPE.—Adult male, skin and skull, No. 60048, American Museum of Natural History, from Nodoo, island of Hainan, China. January 9, 1923. Clifford H. Pope, collector; Third Asiatic Expedition.

DESCRIPTION.—Similar to *A. subcristatus subcristatus* but smaller, with a lower and slenderer skull; the nuchal crest is slightly less developed, and the large spines on the back are more extensively dark with correspondingly shorter white tips.

The general color, as in the typical form, is dark blackish brown, with a white half collar or V-shaped mark on the throat formed by short white spines, and a short crest on the mid-line of the neck consisting of elongated slender bristles most of which are deep brown at the base and white on the distal two-thirds. This crest in a series of nine adults is of much shorter and darker bristles than in the Fukien series and in a few is almost altogether wanting. The elongated slender bristles of the lower back are in both forms white except at the extreme base, but the heavier spines have the dark middle portion more extensive so that the white tips are correspondingly much shorter (35 mm. against 50 on the average for the medium-length spines) and there is an almost total lack of long heavy spines that are white throughout. The tail with spines and capsular bristles is similar in both forms but the spines are darker in the Hainan porcupine.

SKULL.—The cranium is smaller and slightly more slender throughout than in typical *A. subcristatus*, with conspicuously less vertical depth. The dorsal profile is very evenly convex and there is no trace of a postorbital process. The nasals are long, pointed anteriorly, and at first relatively narrow, expanding laterally in their terminal (posterior) third. Their combined posterior border is convex backward, its median

point reaching the level of the middle of the orbito-temporal fossa. The median and lateral boundaries of the nasals first disappear through fusion with adjacent bones. The ascending branch of the intermaxillary is narrow, tapering dorsally and with a truncate posterior border. The median length of the combined interparietal and parietals equals or very slightly exceeds that of the frontals. The cheek teeth except for their less transverse width do not differ from those of the mainland animal.

MEASUREMENTS.—The flat skin of the type which is fully adult measures about 670 mm. from snout to end of capsular bristles of the tail; the latter is about 100 mm. long.

The skull measurements follow, with those of No. 60174, adult male, from Fut-sing, Fukien Province, in parenthesis after each. Greatest length, 135 (138+) mm.; basal length, 121.5 (129); palatal length, 72 (79); diastema, 33 (38); median length of nasals, 74.5 (79); zygomatic width, 65 (74.5); mastoid width, 46 (52); across outer edges of palate, 28 (29.5); upper cheek teeth, 30 (29); lower cheek teeth, 29 (29); mandible from condyle to anterior point of jaw, 85 (91); depth of cranium above *m*¹, 57 (67).

The adults all agree in their small size and dark color as compared with Fukien specimens. The young ones, 165 and 190 mm. in length respectively, were both secured December 9, 1922. They are uniformly dark brown, except for a few long white quills and heavier white-tipped spines on the lower back, and a tuft of white hair at the anal region. There is no trace of white bristles on the nape nor are the bristles here elongated to form a crest.