

Article **XXIX.**—MAMMALOLOGICAL NOTES.—I-VI.

BY J. A. ALLEN.

It is thought best to bring together here under a general title various minor notes on mammalogical subjects that are too short to be conveniently issued as separate articles. Those of the present installment are as follows:

- I. Concrescence in Premolars of a Bat.
- II. Bats from the Island of San Domingo.
- III. Note on the Type of the Genus *Sciuropterus*.
- IV. Note on the Type Locality of *Rangifer arctica* (Richardson).
- V. Northward Extension of Range of Coyotes.
- VI. The Generic Name *Galera* Brown.

I. CONCRESCENCE IN PREMOLARS OF A BAT.

In a small collection of bats recently received at the Museum from the vicinity of Merida, Venezuela, are several specimens of *Artibeus quadrivittatus* Peters, one of which has the two upper premolars on each side fused, as shown in the accompanying illustrations. The corresponding teeth in the lower jaw are normal. On the right side of the upper jaw the two premolars are solidly fused at the base, but the cusps are distinct from the cingulum upward. On the left side the fusion extends upward for two thirds the length of the teeth. Normally these two teeth are quite similar in structure except that the first is only about half the size of the second, and are crowded in between the canine and first molar, against which they are closely appressed. In the fused teeth there is nearly the same disparity

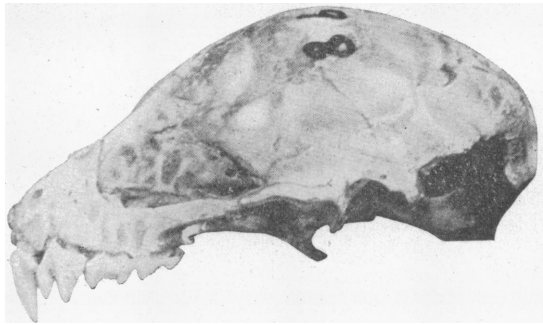


Fig. 1. *Artibeus, quadrivittatus* No. 24398. Outside view of left upper tooth row, showing fused premolars. ‡.

in size between the two parts, but the portion representing the first molar rises much higher than in the normal tooth, the two cusps of the fused teeth being of equal height on the right side and nearly so on the left. The accompanying illustrations render further description unnecessary.

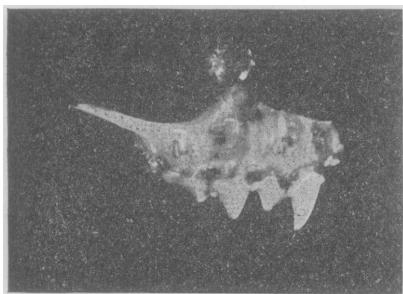


Fig. 2. *Artibeus quadrivittatus*, No. 24381. Outside view of right upper tooth row, normal specimen. ♀.

The specimen showing the abnormality is quite young, the milk incisors being still present, but the rest of the teeth were fully developed, except the canines, which had not quite reached their full height. While this anomaly may not have much significance in its bearing

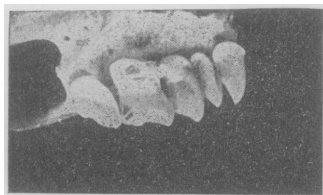


Fig. 3.

Fig. 3. *Artibeus quadrivittatus*, No. 24398. Inside view of left upper tooth row, showing fused premolars. ♀.

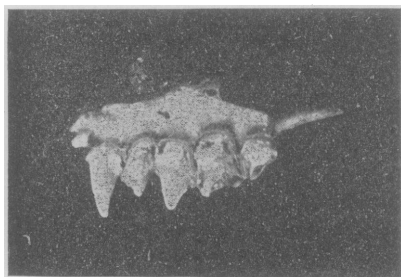


Fig. 4.

Fig. 4. *Artibeus quadrivittatus*, No. 24381. Inside view of right upper tooth row, normal specimen. ♀.

upon the 'concrecence theory' of the formation of cusps, it is of considerable interest on account of the extreme rarity of its occurrence.

II. BATS FROM THE ISLAND SAN DOMINGO.

A small collection of bats, made by Mr. A. H. Verrill in January, 1907, during his expedition to San Domingo in 1906-1907, have been recently acquired by this Museum. They number only six species, but have considerable interest, since little has hitherto been definitely known regarding the bats of San Domingo. Two of the species appear to be undescribed.

The only other mammals obtained by Mr. Verrill on the island are

three specimens of *Solenodon paradoxus* (see *antea*, pp. 505-517, pll. xxviii-xxxiii), and a few specimens of the introduced *Mus alexandrinus* I. Geoffroy.

1. ***Chilonycteris macleayii fuliginosa* (Gray).** One specimen, in formalin, Caña Honda, January, 1907.

2. ***Otopterus waterhousii* (Gray).** Nine specimens, skins and skulls, Caña Honda, Jan. 1, 1907.

3. ***Artibeus jamaicensis parvipes* Rehn.** Four specimens, two alcoholic and two skins, Caña Honda, Jan. 8, 1907. Forearm, 52-55 mm.

4. ***Ardops haitiensis* sp. nov.**

Type, No. 25750, adult, skin and skull. Caña Honda, San Domingo, Jan. 5, 1907; A. H. Verrill.

Smallest of the species of *Ardops* yet known. Forearm, 39 mm., as against 46 and 47 in *A. nichollsi* (Thomas), and *A. luciae* (Miller), as given by Miller.¹ Total length of skull, 19, as against 20.4 and 23 in *nichollsi* and *luciae*; maxillary toothrow (c-m³), 5.5 (7.6 and 6.4); 2d finger, 34 (36 and 41); thumb, 12 (11 and 15.6); 3d finger, 80 (96 and 110); tibia, 15.5 (16.4 and 19). Other measurements, cranial and external, are proportionately small. Known only from the type.

The genus *Ardops* has not previously been reported from outside of the Lesser Antilles, the three previously described species being respectively from Dominica, Montserrat, and St. Lucia. The allied genera *Phyllops* and *Ariteus* are known respectively from Cuba and Jamaica, each being represented by a single species.

5. ***Nyctinomus brasiliensis musculus* Gundlach.** Two specimens, one in formalin, and a skin with skull.

6. ***Mollossus verrilli* sp. nov.**

Type, No. 25764, adult, skin and skull, Samana, San Domingo, Feb. 5, 1907; A. H. Verrill.

Not closely related to any known species, but for convenience of description it may be compared with *M. tropidorhynchus* Gray, of Cuba.

Much larger than *M. tropidorhynchus*, and general coloration darker; forearm, 40 mm. (in *tropidorhynchus*, 34); 3d metacarpal, 41 (in *tropidorhynchus*, 35); thumb stouter and much more curved; feet larger. Skull,

¹ Proc. Acad. Nat. Sci. Phila., 1902, p. 407.

total length, 17 (in *tropidorhynchus*, 15); width of brain case, 9 (in *tropidorhynchus*, 8). The skull is more massive, the rostral portion especially more thickened, the brain case more expanded, and the dentition throughout notably heavier; the lower jaw is markedly deeper and heavier, and the canines in both jaws are nearly twice as large as in *tropidorhynchus*.

Represented only by the type.

III. NOTE ON THE TYPE OF THE GENUS SCIUROPTERUS.

The genus *Sciuropterus* F. Cuvier was first defined under the vernacular name *Sciuroptère* by F. Cuvier in 1823 (Mém. du Mus., X, 1823, p. 126), and based on "le sciuroptère assapan (*sciurus volans* Linn.), qui me servira d'objet de comparaison avec le ptéromys taguan,..." The first use of *Sciuropterus* is by the same author in his 'Dents des Mammifères,' in the 'table methodique,' p. 255, where is given "Sciuroptères, *sciuropterus* F. Cuv. *Sciuroptère* polatouche, *sciurus volans* Linn."

Regarding the 'assapan' of F. Cuvier, the original type of his *Sciuropterus*, he says ('Hist. Nat. des Mammifères, livr. viii, July 1819): "C'est sous le nom impropre de polatouche que Buffon a parlé de cet animal, originaire de l'Amerique septentrionale, tandis que le polatouche, proprement dit, est du nord de l'ancien continent, et que c'est des Russes qu'il a reçu ce nom, ou plutôt celui de polatouka." This is important, inasmuch as *Sciurus volans* Linn. includes both the assapan and the polatouche, while *Mus volans* Linn., on an earlier page of the same work (cf. Syst. Nat., ed. 10, 1758, pp. 85 and 88), relates exclusively to the assapan.

Mr. Oldfield Thomas, in a recent paper entitled 'The Genera and Subgenera of the *Sciuropterus* Group, with descriptions of three new Species' (Ann. and Mag. Nat. Hist. (8), I, pp. 1-8, Jan. 1908) has, with apparently good reason, divided the group into six genera (*Trogopterus* Major, *Sciuropterus* F. Cuv., and *Iomys*, *Belomys*, *Pteromyscus* and *Petaurillus*, genn. nov.). He has also separated his *Sciuropterus* sens. stric. into four subgenera, of which three are new, namely: *Sciuropterus*, *Glaucomyis*, *Hylopetes*, and *Petinomys*, and designated a type for each. The type of *Glaucomyis* is unfortunately given as "*Sciuropterus* (*Glaucomyis*) *volans* (*Mus volans* Linn.)," which is F. Cuvier's "sciuroptère assapan," the monotypic type of his genus *Sciuroptère* (later his *Sciuropterus*).

Sciurus volans Linn. was, as said above, composite; although based primarily on No. 22, Fauna Suec. (1746), which relates exclusively to the European flying squirrel ("Habitat in Finlandia & Lapponia"), it also included the North American flying squirrels as described and figured by

Catesby and Edwards. Previous to 1908, the type of *Sciuropterus* had repeatedly been given as *Sciurus volans* Linn. (Allen, N. Am. Rodentia, 1877, p. 653; Palmer, Index Gen. Mamm., 1904, p. 625), which was also the only species mentioned where the Latin form of the name was first used. If we go back, however, to the original institution of the genus it is evident that only the assapan (*Mus volans* Linn.) was considered. In dividing the genus *Sciuropterus* into subgenera this fact might well have been recognized, and *Mus volans* Linn. taken as the type, leaving *Sciurus volans* Linn. part (= *Pteromys russicus* Tiedemann) as the type of the palæarctic section of the genus. Under all of the circumstances, however, it may possibly be conceded that it was within the rights of the first reviser (in this case Mr. Thomas) to select *Mus volans* Linn. as the type of his new subgenus *Glaucomys*, and *Pteromys russicus* Tiedemann as the type of *Sciuropterus*, although it would have better expressed the historical facts in the case if this designation of types for the two groups by the first reviser had been reversed.

In determining the type of a genus where a previously designated type is a composite species, it is proper, not to say important, to ascertain which element of the composite was employed by the founder as the principal or sole basis, as the case may be, of his genus.

IV.—NOTE ON THE TYPE LOCALITY OF *RANGIFER ARCTICA* (RICHARDSON).

Richardson gave no definite type locality for his "*Cervus tarandus*, var. *arctica*," but in his 'Introduction' to the 'Fauna Boreali-Americana' (I, p. xxv), where the name is first used, he included it in his list of "quadrupeds known to inhabit the Barren-grounds." The region mentioned by him as the Barren-grounds is defined (*l. c.*, p. xxiii) as "bounded to the westward by the Coppermine River, Great Slave, Athapescow, Wollaston, and Deer Lakes, to the southward by the Churchill or Missinippi River, and to the northward and eastward by the sea." This region is joined on the westward and southward by his "Eastern district," to which he assigns his *Cervus tarandus*, var. *sylvestris*.

His personal acquaintance with the Barren-ground Caribou (his var. *arctica*) appears to have been made first, and mainly, in the Coppermine River country, during his journey down to the Coppermine, along the coast of Coronation Gulf, and on the return trip across country to Fort Enterprise, considerably south of the southern boundary of the Barren-grounds. He says (*l. c.*, p. 250) of the Woodland Caribou (his var. *sylvestris*), "of this

variety I know little"; but of the Barren-ground Caribou (*l. c.*, p. 242), that it resorts "to the coast of the Arctic Sea, in summer," and retires "in winter to the woods lying between the sixty-third and sixty-sixth degree of latitude." He gives wood-cuts (*l. c.*, p. 240), "made from drawings by Captain Back, of the antlers of two old buck caribou, killed on the Barren Grounds in the neighborhood of Fort Enterprise." Hence it is necessary to consider Fort Enterprise, in the winter range of the Barren Ground Caribou, as the type locality of this form. He says, however, that Captain Parry saw them on Melville Peninsula, and further states that on the coast of Hudson Bay none go to the southward of Churchill; but, as said above, his personal acquaintance with the animal relates to Fort Enterprise and to the country to the eastward of the Coppermine River.

V. NORTHWARD EXTENSION OF RANGE OF COYOTES.

The Museum is indebted to Mr. Madison Grant, Secretary of the New York Zoölogical Society, for a specimen — skin and entire skeleton — of a Coyote killed near Whitehorse, on the Alsek River, Alaska, in February, 1907. This is by far the most northern record for any form of coyote.

Mr. Grant informs me that in 1902 he found that coyotes were known to occur near Golden, in eastern British Columbia, where the residents of the vicinity reported their appearance as recent, and as still the subject of comment. Previously the most northern record west of the Rocky Mountains was "the arid interior of British Columbia (Ashcroft, Shuswap)." ¹

East of the Rocky Mountains the former northern limit of distribution of coyotes is the vicinity of the fifty-fifth parallel,² or about the northern boundary of the Provinces of Alberta and Saskatchewan. Richardson (*l. c.*) states that in his day the coyote, or prairie wolf, was very abundant on the plains of the Saskatchewan, where, according to recent advices, it is still numerous.³ Mr. Ernest T. Seton informs me that he found, during his trip to the Barren Grounds in 1907, that it was gradually extending its range to the northward, and was now not uncommon as far north as Little Slave Lake.

As is well known, the coyotes of the northern plains (*Canis latrans* Say and *C. l. pallidus* Merriam) are the largest members of the coyote group, considerably exceeding in size the coyotes found in the region west of the Rocky Mountains in the same latitudes. The Alaskan specimen received

¹ Merriam, Proc. Biol. Soc. Washington, XI, 1897, p. 25.

² Richardson, Fauna Bor.-Amer., I, 1829, p. 73.

³ Early in the present year the Museum received 4 specimens, skins and skulls, collected near Maple Creek, Saskatchewan, by E. E. Baynton.

from Mr. Grant has no near relationship with the coyotes of the Saskatchewan plains, being not only very much smaller, but quite different in color and in dentition. As would be expected, it is, on the other hand, closely related to *Canis lestes* Merriam, of the trans-Rocky Mountain districts. The present specimen is apparently an old female, and differs from an old female of *C. lestes*, from Shuswap, B. C., in being smaller, and slightly in other characters, and may be separable as a northern form of *lestes*. Although the differences between these two skulls are quite appreciable, it would be rash, in the absence of more material for comparison, to recognize these differences in nomenclature. The subjoined measurements of three female skulls — the Alaska specimen, a female *lestes* from Shuswap, B. C., and one from Maple Creek, Saskatchewan (young female, too young to be fairly comparable with the others, but the only one available) — show the Alaska specimen to be the smallest of the three, and illustrate the wide difference in the size of the teeth between the *lestes* and *latrans* types, as regards not only the length of the premolar-molar series, but of individual teeth.

Measurements of Skulls.¹

	No. 28197	No. 72876	No. 28281
	♀	♀	♀
Total length.....	181	188	190
Condyllo-basal length.....	171	174	181
Basal length.....	161	167	170
Basilar length.....	159	162	166
Palatal length.....	86.3	86.3	—
Interorbital breadth.....	31	33	30
Postorbital breadth.....	31	33	31
Zygomatic breadth.....	91	97	90
Mastoid breadth.....	54	56	61
Length of upper premolar-molar series.....	63	67	71.3
Length of p ⁴ -m ²	34	35	38.5
Length of upper carnassial.....	20	19	20
Length of lower premolar-molar series.....	74	74	80
Length of m ₁ -m ₃	33.5	34	37
Length of m ₁	20	20.5	23

The Alaska specimen is much darker than Saskatchewan specimens, and less fulvous; but the ears, nose, and anterior surface of the limbs are

¹ 1. Am. Mus. No. 28197, ♀, Alsek River, Alaska; Madison Grant.

2. U. S. Nat. No. 72876, ♀, Shuswap, B. C.; Biological Survey.

3. Am. Mus. No. 28281, ♀, Maple Creek, Saskatchewan; E. E. Baynton. This is a quite young specimen, as shown by the absence of ankylosis and the rudimentary condition of the sagittal and occipital crests. While not full grown as regards the size of the skull, the dentition is fully developed.

much more rufous, as in the *lestes* type. Compared with a *lestes* specimen of the same sex (♀) from southern British Columbia, the carnassial is slightly longer and heavier, or about like the corresponding tooth of a male *lestes* skull from southern Oregon. The bullæ in the Alaska specimen are smaller, narrower, more elongate and less swollen than in the *lestes* specimens. These slight differences may, however, be individual rather than racial, a point to be determined by examination of additional Alaska specimens.

There is apparently no insuperable barrier to their continuous range, through the valleys trending north and south, from the plains of British Columbia northward, west of the main Rockies, but if coyotes inhabit this region they must be rare or of local occurrence, since none have previously been received from any part of this district, which, however, is faunally not yet well known.

In conclusion I desire to acknowledge my indebtedness to Dr. C. Hart Merriam, Chief of the Biological Survey, for the loan of the skulls of *C. lestes* on which the above comparisons are based.

VI. THE GENERIC NAME GALERA BROWNE.

The first modern use of *Galera* as a generic name was by J. E. Gray in 1843 (List of Spec. Mamm. Brit. Mus., 1843, pp. xx and 67). He ascribed the name to Browne (*l. c.*, p. xx), and referred to it the single species *Mustela barbara* Linn., citing under it *Galera subfusca* Brown, Jam. t. 29 [*sic*], f. 1" (*l. c.*, p. 67), although Browne was not a binomialist and did not use *subfusca* as a specific name. Thomas, in 1901 (Ann. and Mag. Nat. Hist. (7), VII, Feb. 1901, p. 180, footnote), recognizing the propriety of separating generically the Grisons from the Tayras (following Nehring), adopted "Gray's genus *Galera*" for the latter.

Galera was again brought to notice by Sherborne in 1902, in his 'Index Animalium' (p. 408), where he cites "*Galera* P. Browne, Hist. Jamaica, ed. 2, 1789, 485." It was also included by Palmer, in 1904, in his 'Index Generum Mammalium' (p. 289), where he gives "*Galera* Browne, 1789. Civil & Nat. Hist. Jamaica, 2d ed., 485, Tab. 49, fig. 1, 1789. . . . Type, *Mustela barbara* Linnæus, from Brazil." He quotes from Browne: "This creature [the Guinea Fox]¹ is often brought to Jamaica from the coasts of Guinea [Guiana],¹ where it is a native." Here Palmer, perhaps following Gray (as above), makes two erroneous assumptions: (1) that the "Guinea

¹ The words in brackets are Palmer's.

Fox" of Browne is the *Mustela barbara* of Linnæus; (2) that the Guinea Fox was brought from Guiana and not from Guinea, as stated by Browne. As will be shown later early authors, from Pennant down, accepted Browne's Guinea as Guinea and not as Guiana.¹ As a further indication that Guinea in Africa was referred to, we find under *Hystrix* (p. 487): "This creature is seldom seen in *Jamaica*; though frequent enough on the coast of *Guinea*, from whence it is sometimes brought there in the *African* ships." It is further to be noted that in referring to animals brought from continental America he nowhere uses any other expression than "the main continent."

On the basis, apparently, of Gray and Palmer, Elliot in 1905 (Check-List of the Mammals of the North American Continent, etc. p. 418) adopted "*Galera* Browne" as the proper generic designation of the Tayra and Grison groups, with "Type *Mustela barbara* Linnæus." In 1907 he (Cat. Coll. Mamm. in Field Columbian Museum, 1907, pp. 442, 443) continued the same use of *Galera*.

The history of the case of *Galera* is as follows: Patrick Browne in his 'Civil and Natural History of Jamaica' (fol., 1756), proposed the name *Galera* (l. c., p. 485), in a generic sense, for an animal he called "the Guinea Fox," of which he gave a rude figure (l. c., pl. 49, fig. 1) and a very brief account. Two editions of this work appeared, the second bearing date 1789, which are textually the same, except that the second has a new title-page, a new map, and "Four additional indexes [unpaged] to Dr. Brown's [*sic*] Natural History of Jamaica."² The latter are simply a concordance of the systematic names of the author, of both the plants and animals, and those of Linnæus.

Galera Browne dates from the first edition of his 'History,' which was published two years before the beginning of binomial nomenclature. Its republication in the second edition (1789) was without change, except that to the plate was added "Fig. 1. *Mustela barbara*?", evidently based on Linnæus's references to Browne in the 10th and 12th editions of his Syst. Nat., as noted below.

Erxleben (Hist. Reg. Anim., 1777, p. 453) identified Browne's "*Galera*" with the "*Vansire*" of Madagascar, and with the "*Koekeboe*" of Guinea

¹ Thus Pennant, in his 'Synopsis of Quadrupeds' (1771, p. 225, Nos. 160 and 161), and also later in his 'History of Quadrupeds,' has a "Guinea Weasel" based on Browne's *Galera*, and a "Guiana Weasel," based on *Mustela barbara* Linnæus.

² A collation of the two editions shows that the second differs from the first as follows: (1) a new and considerably altered title-page; (2) a new and greatly improved map of Jamaica, dated 1774; (3) a systematic concordance of Browne's plant and animal names with those of Linnæus, forming 23 unpaged leaves, and entitled as above; (4) the plates are reengraved (and reversed), and are much more coarsely done than the originals, with sometimes slight omission of details; and in place of the names of the draftsman ("G. D. Ehret delin. 1755") and engravers ("Patton Sculp.," and others, on different plates) are added at the bottom of the plates the technical names of the objects delineated, which were not given on the original plates; (5) the first three signatures of the main text (pp. 1-12) have been reset, with very slight verbal changes, but the pagination is unchanged. The rest of the text consists evidently of "left-over" sheets, utilized for a second edition.

(Rossmann, *Reise nach Guinea*, 1708, p. 299), employing for the three collectively (and properly, as these three names all refer to the same species) the name *Mustela galera*. Schreber adopted the same name at about the same date. (Schreber and Erxleben cite each other; Schreber gave the page reference to Erxleben, but Erxleben cited only Schreber's plate, which is copied from Browne's.) They both combined with these "le Tayra ou le Galera" of Buffon (*Hist. Nat.*, XV, 1767, pp. 155, 156), doubtless because Buffon believed that the "Galera" or "Guinea Fox" of Browne might be the same as his "la Belette noir du Bresil," which he says is also found in Guiana, where it is called Tayra; and he further conjectured that the name galera is "un mot corrompu & dérivé de tayra"; and also suggests that while the animals described by Browne as the Guinea Fox may have been brought to Jamaica from Africa, that they had been first shipped from Brazil to Guinea and thence to Jamaica. Aside from these conjectures, Buffon's "le Tayra ou le Galera" is also Browne's "Guinea Fox."

Buffon doubtless took his cue from Linnæus, who in 1758 (*Syst. Nat.*, ed. 10, p. 46) described the Tayra, evidently from personal knowledge of the animal, under the name *Mustela barbara*, including as his sole reference: "Confer. Brown. jam. 485. 49. f. 1. Galera?" In the 12th edition he again cites Browne, and again with a mark of interrogation. In this way began a confusion which still prevails, as the sequel to this note will show.

Browne's long Latin diagnosis of *Galera* contains little that is applicable to the Tayra, but much that well agrees with the Mongoose of East Africa, which his figure, though crude, and evidently not *ad nat.*, strongly suggests.¹ Besides, he says: "This creature is often brought to *Jamaica* from the coasts of *Guinea*, where it is a native, . . . It burrows under ground . . . It is of the size of a small rabbit or cat, and very strong in its fore-feet, which are much shorter than the hinder." The Tayra, however, is not a native of Guinea; it is not a fossorial, burrowing animal but is arboreal; it is much larger than a "small rabbit or cat"; its color would not be described as "subfuscus," it being black, with the head gray, and with a prominent white or yellowish spot on the foreneck.

Browne's Guinea Fox was correctly identified by Pennant, Schreber, Erxleben and other eighteenth century authors with the "Vondsira" of Flacourt (*Hist. de la Grande isle Madagascar*, 1661, p. 154; later the Vansire of Buffon) who obtained a specimen in that island, doubtless brought there, as well as to Jamaica, from Africa, but whose true home was later found to be the neighboring coast of Africa (*cf.* Thomas, *P. Z. S.*, 1882, p. 154). As noted above, it was first properly introduced into binomial nomen-

¹ The head of the animal appears to have been based on a *Didelphis*, especially the teeth.

clature by Erxleben, as *Mustela galera*; it was later (1826) renamed by F. Cuvier *Atilax vansire*, and is now currently known as *Herpestes galera* (Erxl.), the Water Mongoose. If, therefore, *Galera* Browne be tenable from his second edition (1789) it must replace *Herpestes* Illiger, 1811, now used for the Mongooses. In any case it has nothing whatever to do with the Tayras of tropical America. As, however, *Mustela barbara* Linn. has repeatedly been treated as the type of *Galera*, a word on this point seems necessary.

Article 30 of the International Code of Zoölogical Nomenclature rules that "Species which were *species inquirendæ* from the standpoint of the author of the generic name at the time of its publication" "are excluded from consideration in selecting the types of genera." Therefore the engraved name "*Mustela barbara*?" on plate 49 of the second (1789) edition of Browne's work does not render this species available as the type of *Galera*; nor will the designation of this species as the type of *Galera* by Gray in 1843 avail, in face of the fact that the *Galera* of Browne was a Mongoose and not a Tayra. Therefore *Galera* Gray, 1843 (nec Browne) = *Tayta* Oken, 1816; while *Galera* Browne, 1789 (type *Mustela galera* Erxl.) = *Atilax* F. Cuv. 1826 = *Herpestes* Illiger, 1811.

