

Article XII.—NEW MAMMALS FROM JAMAICA

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Plate XXXIII

As a continuation of the policy of The American Museum of Natural History to carry on investigations of the West Indian fauna, an expedition to Jamaica, British West Indies, was undertaken jointly by the departments of Vertebrate Palæontology and Mammalogy late in 1919. The author was in charge of the work and had, as an assistant, Mr. Charles Falkenbach of the department of Vertebrate Palæontology. The expedition was in the field from November 18, 1919, to March 19, 1920, and secured large collections of mammals, both of living and fossil forms. The preparation for study of the fossil material, which is almost all in a hard breccia, will necessarily take many months and this preliminary report is for the purpose of recording such results as are obvious from the available material. It is planned to publish a detailed report of the collections at the earliest possible moment.

The most striking finds of the expedition are large hystricomorph rodents of which at least four distinct new genera were found, very probably belonging to two separate families. Two well differentiated species of one of these genera are represented in the material, while the other genera appear to be monotypic. Seemingly the most common member of the fossil fauna is the following genus.

Clidomys,¹ new genus

A large hystricomorph characterized by a molar pattern made up of subelliptical laminae, separated by cement, each lamina with the enamel completely encircling it. The number of these laminae is normally three, the number of the cheek-teeth is the normal hystricomorph number, four, and the teeth are rootless.

Genotype: *Clidomys osborni*.

Clidomys osborni,² new species

Plate XXXIII, Figures 1 to 5; Text Figures 1, 2, and 3

Type: No. 17634, Department of Vertebrate Palæontology, from a cave on the Wallingford estate, Balaclava, Jamaica, December 1919; collector, H. E. Anthony. The type is a fragmentary mandibular ramus, left, with all of the molar series but lacking the incisor and all of the ascending portion of the ramus.

¹From κλεις (κλειδός), a key and μῦς, a mouse.

²For Professor Henry Fairfield Osborn, President of The American Museum of Natural History, whose support and interest in the West Indian work has stimulated museum activity there.

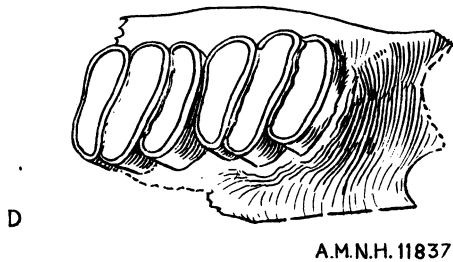
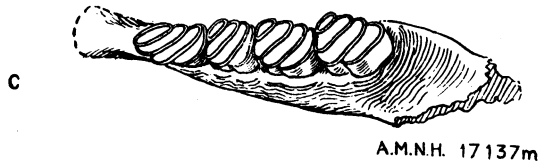
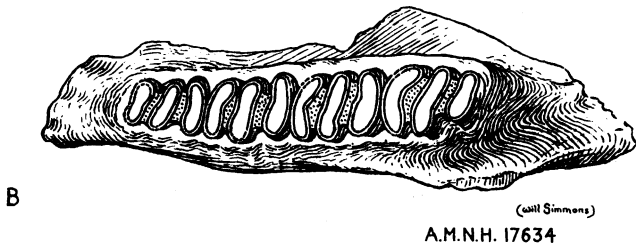
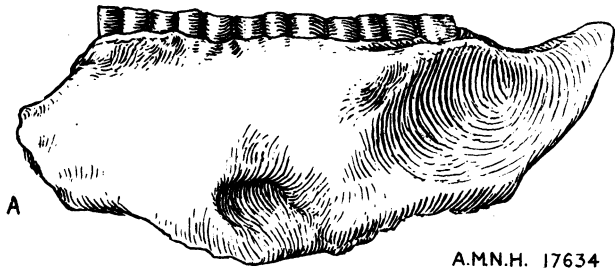


Fig. 1

- A. External view of left mandible of *Clidomys osborni*.
 B. Crown view of mandibular molar series of *Clidomys osborni*.
 C. Crown view of mandibular molar series of *Elasmodontomys obliquus*.
 D. Crown view of last two mandibular molars of *Amblyrhiza inundata*.
 All figures natural size.

DESCRIPTION.—Mandible robust and strong, with great transverse thickness; muscle insertion areas apparently well developed; toothrow of good length, the molars subequal in size and slightly larger than the premolar; each tooth made up of three laminae cemented together, each lamina completely encircled by enamel to form a simple subelliptical pattern in the crown; the anterior ellipsoid of m_1 , m_2 , and m_3 with the posterior loop of enamel concave instead of convex; the laminae set in the toothrow with a slight obliquity to the long axis of the row; amount of cement in the crown pattern about 30 per cent of the dentine; teeth rootless but projecting only moderately above alveoli and not decidedly hypsodont.

MEASUREMENTS.—Crown length of toothrow, 46.2 mm.; dimensions of $pm.$, 9.8×7 ; m_1 , 11.1×9.5 ; m_2 , 11.4×9.1 ; m_3 , 12.2×8.8 ; dimensions of laminae of m_2 , in antero-posterior order,¹ 8.9×2.4 ; 9.1×2.6 ; 8.5×2.7 .

Clidomys is unique among West Indian hystricomorphs (1) in the complete and unreduced encircling enamel of each lamina and (2) in the extensive amount of cement between the laminae. It doubtless represents the more primitive stage through which has passed *Elasmodontomys* and *Amblyrhiza*, since in these forms the enamel has almost disappeared along the anterior face of each lamina (lower molars) and the cement has

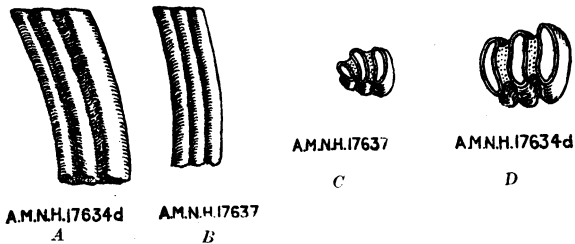


Fig. 2.

A, D. Lower molar of *Clidomys osborni*.
 B, C. Lower molar of *Clidomys parvus*.
 All figures natural size.

been reduced to a very thin sheet. In this respect it more nearly resembles *Megamys* and *Tetrastylus*, which the figures of Ameghino show to have a greater number of laminae than has *Clidomys*. With the rodents of the Santa Cruz beds the Jamaican genus has little in common. *Clidomys* is also more primitive than *Elasmodontomys* in the proportionally shorter length of the molars and the more normal, less oblique, relation of the laminae to the axis of the toothrow. *Clidomys* differs strikingly from all living hystricomorphs, the closest similarity among the mainland forms being seen in the genera *Lagostomus* and *Chinchilla*, but these rodents show little of the extreme differentiation of the molars into heavy enamel and wide areas of cement.

¹The second measurement is the average breadth or thickness of the lamina.

With considerable skeletal material of *Clidomys* on hand, needing only time in the laboratory to make it available, it would be premature to indulge in conjecture, in this paper, as to the relationships of this new genus. It is significant, however, that the dentition shows *Clidomys* to be only remotely related to the other large hystricomorphs of the West Indies, and thus casts much doubt upon the tertiary connection of Jamaica with any other of the Greater Antilles. It is hoped that a better understanding of the relationships of *Clidomys* will yield important evidence as to the geological history of Jamaica and this idea has been incorporated in the name of the genus.

Among a number of molar teeth which have no definite known associations, other than being found in the same cave, are several which are decidedly smaller than the rest and evidently represent a different species.

***Clidomys parvus*, new species**

Plate XXXIII, Figures 6 and 7; Text Figure 2

Type: No. 17637, Department of Vertebrate Palæontology, from a cave on the Wallingford estate, Balaclava, Jamaica, December 1919; collector H. E. Anthony. The type is a single tooth, presumably the premolar from the left mandibular ramus.

DESCRIPTION.—Proportionally rather long and slender, slightly curved, with essential elements of the crown pattern typical of the genus, but with a marked difference in the sizes of the laminae, the anterior lamina being not more than half as extensive as either the second or third.

MEASUREMENTS (figures in parenthesis are of *osborni*).—Greatest length of tooth, 19.8 mm. (23)¹; dimensions of crown, 6.1×4.4 (9.8×7)².

The figures will show, better than the measurements, the very apparent differences in proportion between *osborni* and *parvus*. The tooth of *parvus*, although nearly as long as that of *osborni*, has a cross-section equal to only 40 per cent of the latter. Such a difference can not be attributed to age, although this group of rodents, to judge by the material at hand, seems to manifest the same dental traits as are found in *Capromys*, *Proechimys* and numerous other rodents, namely the very early appearance of the full molar series and a progressive increase in the cross-section of the molars with age.

There are several other teeth, doubtless of this species, but rather fragmentary in nature. They confirm the characters shown by the premolar and there is a large gap between any of these and the smallest of those of *osborni*.

¹This measurement is of No. 17634d, which is obviously not a premolar, but as the entire molar series appear to be approximately the same length, the measurement will serve to show the proportional difference.

²Measurements taken from the premolar of the type of *osborni*.

Numerous isolated teeth were found in the Wallingford formation and it is hoped that jaws with teeth in position may yet be discovered in the breccia. However, characters of definite diagnostic value appear in these single teeth and it is upon this material that the following three genera are based.

***Spirodontomys*¹ *jamaicensis*, new genus and species**

Plate XXXIII, Figures 8 to 10; Text Figure, 3

Type: No. 17635, Department of Vertebrate Palæontology, from a cave on the Wallingford estate, Balaclava, Jamaica, December 1919; collector, H. E. Anthony. The type is a single tooth, one of the upper molar series—which one of the series is not very clear, but the choice probably lies between pm^4 and m^3 .

DESCRIPTION.—Laminae completely encircled by enamel; first two laminae ellipsoid and resembling those of *Clidomys*; posterior half of crown pattern made by a horseshoe-shaped fold, completely outlined in enamel, so that the tooth has two deep longitudinal channels on one side and three on the other.

MEASUREMENTS.—Greatest length of tooth, 17 mm.; dimensions of crown, 10.4 × 6.2.

Two other teeth are referred to this form and are worthy of comment. One of them, No. 17635c, is apparently an upper tooth and with the posterior fold only partly closed so that the arm of the horseshoe points in the long axis of the crown instead of across it. No. 17635a is a lower tooth and here the horseshoe has assumed almost a spiral shape.

The material on hand quite definitely shows that *Clidomys* does not have teeth in either jaw with a crown pattern in which the elements deviate from the simple ellipsoid type and consequently a distinction of this sort appears to call for a generic separation although the relationship to *Clidomys* is an apparent one.

***Speoxenus*² *cundalli*,³ new genus and species**

Plate XXXIII, Figure 12; Text Figure 3

Type: No. 17636, Department of Vertebrate Palæontology, from a cave on the Wallingford estate, Balaclava, Jamaica, December 1919; collector, H. E. Anthony. The type is an upper molar, possibly m^3 , from the right side.

DESCRIPTION.—Proportionally rather longer and more slender than the corresponding tooth of *Clidomys osborni*, with the two anterior laminae typical ellipsoid and the posterior part of the crown pattern composed of two enamel enclosed lakes; two external and three internal longitudinal channels present.

MEASUREMENTS.—Greatest length of tooth, 23.7 mm.; dimensions of crown, 9.6 × 6.3.

¹From *σπείρα*, a coil; *ὀδὸν ὀδοῦς*, a tooth; and *μῦς*, a mouse.

²From *σπέος*, a cave; *ξένος*, a guest.

³For Mr. Frank Cundall, Librarian of the Institute of Jamaica, who gave assistance of great value to the expedition.

Speoxenus appears to be a genus in which the development of the posterior part of the molar is at a stage quite different from that either of *Clidomys* or *Spirodontomys*. Another upper tooth, suspected of belonging to this genus, has three ellipsoid laminæ noticeably different from those of *Clidomys* in their degree of obliquity to the toothrow. Both of these teeth are more decidedly hypsodont than the teeth of either *Clidomys osborni* or *Spirodontomys* and resemble *Clidomys parvus* in this respect.

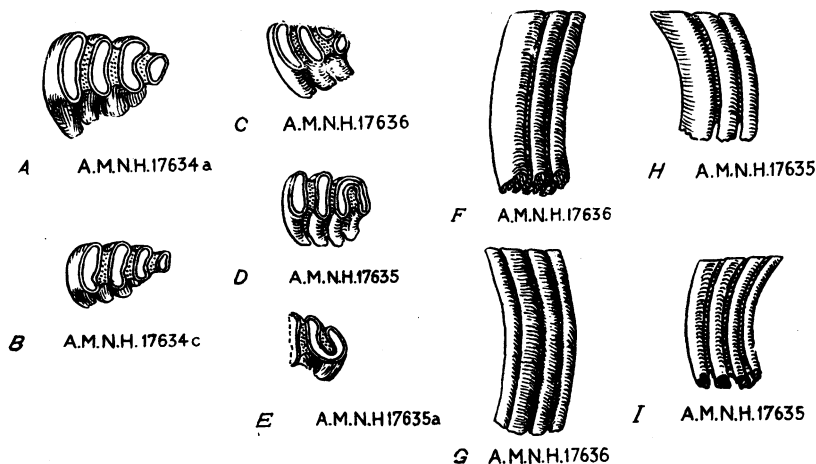


Fig. 3

A, B. Upper molars of *Clidomys osborni* (ma?).

C, F, G. Upper molar of *Speoxenus cundalli*.

D, H, I. Upper molar of *Spirodontomys jamaicensis*.

E. Lower molar of *Spirodontomys jamaicensis*.

All figures natural size.

If, at this stage in the work upon the Jamaican material, one may be allowed to venture a guess as to the interrelationships of this group of forms—*Clidomys* with two species, *Spirodontomys*, and *Speoxenus*—the tendency would be to consider them all as derivatives of a single species which had been subjected to the influences of a long insular isolation.

Alterodon¹ major, new genus and species

Plate XXXIII, Figure 11; Text Figure 4

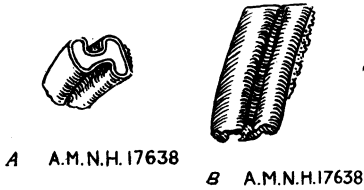
Type: No. 17638, Department of Vertebrate Palæontology, from a cave in the Wallingford estate, Balaclava, Jamaica, December 1919; collector, H. E. Anthony. The type is a single tooth of the molar series but its position can not be placed with certainty.

¹From ἀλτρες, dumb-bells; and ὀδών (όδους), a tooth.

DESCRIPTION.—A short, rootless molar, with a simple crown pattern made up of two subequal parts, separated by a narrow waist, resembling somewhat the figure 8 or the longitudinal cross-section of a dumb-bell. The enamel is continuous about the periphery of the crown and does not cross through it at any point.

MEASUREMENTS.—Greatest length of tooth, 14.7 mm.; dimensions of crown, 6.3×5.

This genus is very obviously quite remote in relationships from any other of the Jamaican complex and, no doubt, is a member of a different family. It bears rather a significant resemblance to the teeth of *Plai-*



A A.M.N.H.17638

B A.M.N.H.17638

Fig. 4

Molar of *Alterodon major*

A. Crown view; B. Lateral view.

Figures natural size.

omys, figured by Rovereto in the *Anales Museo Nacional Hist. Nat. Buenos Aires*, XXV, page 63, and an even more striking similarity to the recent genera *Octodon* (lower molars) and *Abrocoma* (upper molars). There can be no mistaking the distinctness of this form from any known genus and, for this reason, it has been described on the basis of what might at first glance seem rather inadequate material.

PLATE XXXIII

All figures natural size

- Fig. 1. External view of type mandible, left, of *Clidomys osborni*.
- Fig. 2. Crown view, same mandible.
- Figs. 3, 4. Upper molars (last ?) of *Clidomys osborni*.
- Fig. 5. Lower molar of *Clidomys osborni*.
- Fig. 6. Upper molar of *Clidomys parvus*.
- Fig. 7. Lower molar (type) of *Clidomys parvus*.
- Fig. 8. Lower molar of *Spirodontomys jamaicensis*.
- Figs. 9, 10. Upper molars (No. 10, type) of *Spirodontomys jamaicensis*.
- Fig. 11. Molar (type) of *Alterodon major*.
- Fig. 12. Upper molar (type) of *Speoxenus cundalli*.

