APPENDIX II.—SOME NEW MIDDLE EOCENE AND LOWER MIOCENE MOLLUSKS.

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The only Tertiary mollusks described in this appendix are the new species figured on Plates X and XVI as characteristic fossils.

Genus POTAMIDES Brongniart.

Brongniart, 1810, Annales du Muséum d'Histoire Naturelle, Paris, vol. 15, p. 368.[1]
Type (by monotypy): *Potamides lamarkii* Brongniart. Oligocene, Paris Basin.

POTAMIDES TIPPENHAUERI Woodring and Mansfield, n. sp.

Plate XVI, Figures 3, 4 (p. 192).

Shell medium sized; later whorls bear a shelf-like spiral cord at the suture and two narrower spiral threads below the shelf; narrow arcuate axial ribs nodulate the two spiral threads but merely undulate the shelf-like spiral, and on the body whorl the axials become weaker; on the early whorls the shelf-like spiral is about as strong as the other two spirals and is nodulated like them; base of the body sculptured with prominent narrow spiral threads; aperture of all the specimens imperfect, anterior beak short, curved backward, columella slightly swollen at the edge of the very shallow siphonal canal.

Dimensions: Length 30+ millimeters, width 14 millimeters (type).

Type: U. S. Nat. Mus. Cat. No. 350581.

Type locality: First long bluff on right bank of Rivière Blanche below gorge, bed 43 of section on page 170 (U. S. Geol. Survey station 9725). Other localities: Stations 9711, 9726, 9727, 9728, 9731, 9732, and 9733. (For detailed descriptions see pp. 191-193.)

This is one of the most characteristic mollusks of the Maïssade tongue of the Thomonde formation, particularly on Rivière Blanche. In general features it resembles *P. roumaini* Pilsbry,[2] a Maïssade species (see Pl. XVI, Figs. 1, 2), but adult shells retain the axial sculpture found only on young shells of *P. roumaini*. The name is given for Mr. L. Gentil Tippenhauer of Port-au-Prince.

[1] The genus is defined on page 367, but there it is given the vernacular name *Potamide*.
[2] Pilsbry, H. A., Acad. Nat. Sci. Philadelphia Proc., 1910, p. 487, text fig. 1910; idem, 1921, p. 374, 1922.

Genus CHAMA Linné.

Linné, 1758, Systema Naturae, 10th ed., p. 691.
Type (by subsequent designation, Gray, 1847): *Chama lazarus* Linné. Recent, Indian Ocean.

CHAMA ENGONIA Woodring and Mansfield, n. sp.

Plate X, Figures 2, 3 (p. 106).

Shell medium sized, inequivalve, the left valve larger, rhomboidal; umbones strongly prosogyrate; the shell substance is almost entirely dissolved from all the specimens, and there is no trace of sculpture; some of the specimens show an obscure attachment area on the left valve; hinge inaccessible.

Dimensions: Length 37 millimeters, height 52 millimeters, diameter (both valves) 34 millimeters (type); length 43 millimeters, height 57 millimeters, diameter (both valves) 33 millimeters (largest specimen).

Type: U. S. Nat. Mus. Cat. No. 350573.

Type locality: Road from Ennery to St.-Michel de l'Atalaye, west slope of Crête Salée, about a kilometer from crest (U. S. Geol. Survey station 9792). Other localities: Stations 9950 and 9952. (For detailed descriptions see p. 106.)

If this species is a *Chama* it has an unusual outline. The apparent absence of sculpture may be due to the almost complete removal of shell substance. On some specimens there is a trace of an elongate left posterior lamella at the hinge margin. In its angular outline *Chama engonia* resembles *C. brimonti* d'Archiac and Haime,[1] an Indian Eocene species described from casts, but it is less quadrate and more inequivalve.

Genus PSEUDOMILTHA Fischer.

Fischer, 1887, Manuel de Conchyliologie, p. 1144.
Type (by monotypy): *Lucina gigantea* Deshayes. Eocene, Paris Basin.

PSEUDOMILTHA HAITENSIS Woodring and Mansfield, n. sp.

Plate X, Figure 1 (p. 106).

Shell large, rounded elliptical, compressed; umbo low; lunule apparently very narrow; sculpture consisting of exaggerated incrementals; ligament internal, long and narrow; hinge inaccessible.

Dimensions: Length 115 millimeters, height 100 millimeters, diameter (both valves) 34 millimeters (type); length 128 millimeters, height 105 millimeters, diameter (both valves) 32 millimeters (largest specimen); length 45 millimeters, height 35 millimeters, diameter (both valves) 16 millimeters (small specimen).

[1] d'Archiac, Le Vicomte, and Haime, Jules, Description des animaux fossiles du groupe Nummulitique de l'Inde, p. 267, pl. 23, fig. 9, Paris, 1853.

Type: U. S. Nat. Mus. Cat. No. 350572.

Type locality: Road from Ennery to St.-Michel de l'Atalaye, west slope of Crête Salée about a kilometer from crest (U. S. Geol. Survey station 9792). Other localities: Stations 9950, 9952, 9861, 9889, and 9894. (For detailed descriptions see pp. 105-106.)

This lucinoid is provisionally placed in the genus *Pseudomiltha*. It has the exterior features of the genotype, although most of the specimens are more elongate and there is no trace of radial sculpture. Some of the specimens, particularly small ones, are more rounded than the type. The specimens are more or less completely covered with a calcareous crust. On several specimens the posterior hinge margin is broken away, revealing the cast of the long, narrow ligament. Other specimens show, where the shell is broken away, obscure radial markings and irregular attachment areas of the mantle impressed on the internal cast. Numerous specimens from stations 9792, 9950, 9952, and 9861 show considerable difference in outline. Some are rounded and almost equilateral; others like the type are more elongate and more inequilateral.

No similar American species has been described, but the same or a very similar species has been collected from the "Yellow limestone" of Jamaica. Dr. C. A. Matley, Government geologist of Jamaica, recently brought to Washington specimens from the parishes of St. James and Trelawney. Most of the Jamaican specimens are internal casts and clearly show the long, narrow anterior muscle scar, but the hinge is obscure.

The type of *Pseudomiltha haitensis* and other inequilateral specimens closely resemble *"Lucina" postalensis* Oppenheim,[1] a species from the middle Eocene beds of Monte Postale, northern Italy; less inequilateral specimens resemble *"Lucina" pseudogigantea* Oppenheim,[2] described from the same locality. Most of the Haitian specimens are less rounded and seem to lack the obscure radial sculpture.

[1] Oppenheim, Paul, Die Eocaenfauna des Monte Postale bei Bolca im Veronesischen: Palaeontographica, Band 43, p. 155, pl. 12, fig, 4, 1896.
[2] Idem, p. 154, pl. 12, fig. 3.