

sides tuberculated. Limbs armed with tubercular sharp-pointed spines.

About  $1\frac{1}{2}$  inch long.

*Hab.* Adam's Peak (5600 feet).

This novel form of Tree-frog was found by Professor Schmarda of Prague in his late visit to Ceylon, in company with Chevalier Fridau and Baron Königsbrun.

Ceylon, Galle, January 28, 1854.

XXXVII.—*A Revision of the Arrangement of the Families of Bivalve Shells (Conchifera).* By JOHN EDWARD GRAY, Ph.D., F.R.S., V.P.Z.S.

I HAVE lately had occasion to examine the animals of several genera of Bivalve shells, and to consult and compare all the figures and descriptions of the animals of the different genera I have been able to find in the various works and essays on this subject, for the purpose of preparing for the press the text of the fifth and concluding volume of Mrs. Gray's work, 'Figures of Mollusca.' With these materials before me, I was led to consider, as I have done on several other occasions, the characters which have been used to separate the various families, and those which unite them into larger groups,—a subject surrounded with difficulties, when we consider the very great uniformity which exists in the animals of this class, and the modifications which habitation and modes of life produce in genera which are evidently nearly related to each other, as shown in a former communication (Ann. & Mag. N. H. 1853, vol. xi. p. 402).

After repeated comparison, and forming lists of the families according to the various characters, after the example of Adanson, and thus obtaining those which appear to be least variable in the greater number of the families, I am induced to believe that the division of the Class into Orders, according to the presence, absence, and number of the siphonal openings, as proposed by Poli, and followed by Cuvier, Gardner, and many other naturalists, but without paying any attention to the length or shortness, the retractility or contractility of these organs, as was done by those and most of the authors who have succeeded them,—is decidedly the best and most natural\*.

\* M. Deshayes' 'Traité élémentaire de Conchyliologie,' 1843–1850. A conchologist, wedded to the Lamarckian school, has asked, with considerable critical acrimony, "Et d'abord pourquoi M. Gray commence-t-il la classe des Conchifères par la famille des Vénérides? Nous avouons ne pouvoir le deviner. Jusqu'ici tous les classificateurs, quelques soient les principes de leurs méthodes, ont toujours été entraînés par la nature des choses à placer



I am not aware of any attempt having been made to improve the systematic distribution of Bivalve Mollusca formed on the actual examination of the animals, or to embody the observations which have been recently made by other naturalists, since my arrangement of the families, published in the Synopsis to the British Museum in the year 1840, and its revision in 1842. Yet, during the last twelve or fourteen years, we have been furnished with some most important observations on the subject by Messrs. Alder, Hancock, Clark, and Edward Forbes in our own country, and by M. Philippi, Deshayes, Valenciennes and others on the continent of Europe.

I consider such a periodical revision of the labours of others, especially when accompanied by personal observation, to be very important, as bringing together, and putting into a connected form and systematic order, the discoveries which have been made in the meantime, or observations the importance of which may have been overlooked by myself or others when previously occupied on the subject; and they evidently have considerable effect, as is shown by the complete manner in which my revision of the system of Gasteropoda, in the fourth volume of the 'Figures of Mollusca,' and the more recent improvements suggested in it, have been adopted by Messrs. Adams, in their very useful work on the 'Genera of Mollusca,' and the partial adoption of it in Philippi's 'Handbuch der Conchyliologie und Malacozoologie.'

I now proceed to give the arrangement proposed.

## Class I. CONCHIFERA.

Subclass 1. SIPHONOPHORA. *Mantle leaves connected, with two siphonal openings behind.*

In many of these animals, especially in those which have a small pedal opening, there is a minute (4th) aperture with an internal valvular protuberance in the mantle under the lower siphon.

The gills in most families hang down on each side of the foot.

In *Anatinidæ*, *Solenomyadæ*, and *Pandoridæ* they have been described by some authors as single, folded on itself, and by others as the two gills soldered together; they appear to be attached

la famille des Vénus vers le milieu de la série des Mollusques acéphales Dimyaires." The reply is easy. They are placed at the head of the class for the very reason M. Deshayes has assigned, that they appeared to me to be the most perfectly developed, and consequently the most typical animals of the class; and as it is our habit to place the *Primates*, *Insessores* and *Percidæ* at the head of the respective classes of animals to which they belong, so it appears legitimate to place the family *Veneridæ* at the commencement of the Bivalves, the other families diverging from it in two or more series.



by a central line, and what is usually the outer dependent gill is bent up against the upper part of the side of the body, the striæ radiating from the central attachment; hence in *Solenomya* they have been called pinnate. See Hancock, Ann. and Mag. N. H. 1853, vol. xi. t. 3 & t. 11. In *Lucinidæ* there is only a single gill on each side, the outer being absent, or the two are soldered into one.

The gills of *Nuculæ* and *Pandoræ* are somewhat intermediate in appearance between the pinnated gills and the more common form, and the transition from the *Nuculæ* to the *Arcae* is easy.

### Order I. VENERACEA.

Mantle with two more or less elongated siphonal openings. Gills short, not produced into the inhalant or lower siphon. Siphons often more or less separate, under the hinder adductor muscle.

#### I. *Foot compressed* : animal crawling.

##### 1. *Cardinal teeth diverging, central bifid.*

##### A. *Siphons more or less united, short ; cartilage of hinge external, marginal.*

1. *Veneridæ*, Syn. B. M. 1842, 74; P. Z. S. 1847, 183; Ann. and Mag. N. H. 1853, 36.

2. *Cyprinidæ*, Ann. and Mag. N. H. 1853, 36.

3. *Glauconomidæ*, Ann. and Mag. N. H. 1853, 36. Siphons united at the base ; pedal opening small.

4. *Petricolidæ*, Ann. and Mag. N. H. 1853, 36. Siphons separate nearly to the base, pedal opening small. Perhaps allied to *Tellinidæ*.

5. *Corbiculadæ*, P. Z. S. 1847, 184; Ann. & Mag. N. H. 1853, 36. *Cyrenadæ*, Syn. B. M. 1842, 75.

6. *Cyrenelladæ*, Ann. and Mag. N. H. 1853, 37. For the characters of these families see the 'Annals.'

6\*. *Mysiadæ*. Pedal opening moderate, inferior. Siphons none ; anal opening linear, with two semilunar lateral valves, inhalant small, round, fringed. Gills two on each side ; lips four, moderate. Foot compressed, lanceolate. Hinge with two diverging bifid teeth ; no lateral teeth. Cartilages linear, marginal.

##### 1. *Mysia* = *Diplodonta*.

7. *Astartidæ*, P. Z. Soc. 1847, 19. *Crassinadæ*, Syn. B. M. 1842, 80. Pedal opening elongate. Shells covered with a thick brown periostraca. Cardinal teeth broad, triangular, hinder lateral ; of the left valve double.

##### 1. *Astarte*. 2. *Gypsicardia*, sp. according to D'Orbigny.



B. *Siphons separate, elongate, slender.*

8. *Tellinidæ*, Syn. B. M. 1842, 75; P. Z. S. 1847, 186. Pedal opening elongate. Shell oblong, cartilage internal or external.

2. *Cardinal teeth diverging, central laminar, folded; cartilage internal, in a triangular pit.*

9. *Macradæ*, Syn. B. M. 1842, 75; P. Z. S. 1847, 185; Ann. and Mag. N. H. 1853, 38.

10. *Paphiadæ*, P. Z. S. 1847, 186; Ann. and Mag. N. H. 1853, 38. *Mesodesmidæ*, Syn. B. M. 1842, 75. Mantle lobes united. Pedal opening small, anterior. Gills truncated behind. Siphons short, separate, anal largest.

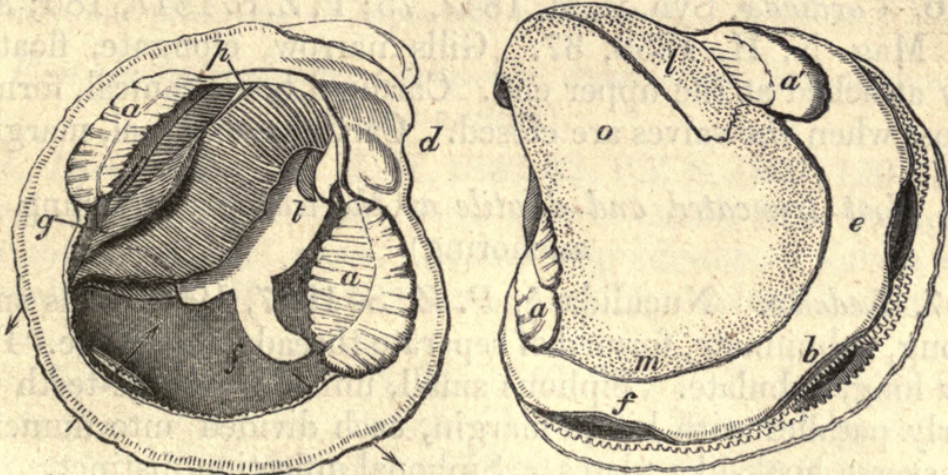
11. ?*Anatellidæ*, Ann. and Mag. N. H. 1853, 38. Animal unknown.

3. *Cardinal teeth very oblique, hinder nearly parallel with hinge-margin; cartilage external, marginal; umbones subspiral.*

12. *Glossidæ*, P. Z. S. 1847, 195. *Isocardiadæ*, Syn. B. M. 1842, 80. Foot compressed, truncated, short, small; pedal opening rather contracted; lips simple; shell free.

13. *Chamadæ*, Syn. B. M. 1842, 79; P. Z. S. 1847, 193. Foot very small, rather produced in front; lips foliated; pedal opening very small; shell irregular, attached by the outer surface of one valve.

Fig. 1.



Animal of *Chama* from Torres' Straits.

*a, a*, adductor muscles; *p*, pedal muscle; *d*, dental membrane; *t*, labial tentacle; *g*, small outer gill; *e*, anal siphon; *b*, branchial siphon; *f*, pedal orifice; *m*, pallial line; *o*, portion of left mantle lobe occupied by ovary; *l*, liver.—S. P. Woodward.

4. *Hinge tooothless; cartilage internal, in a pit, with a shelly appendage in front.*

14. *Anatinidæ*, Syn. B. M. 1842, 77; P. Z. S. 1847, 190. Siphons elongate, generally separate. Gills pinnate, apparently



one on each side the upper part against the side of the body. Mantle with a small valvular hole under the siphons. Hinge-teeth rudimentary. Cartilage internal, in a pit in each valve, with a peculiar shelly plate before it or covering it. Shell inequivalve, umbo with a cartilage slit. Periostraca often hispid.

- a. *Siphons united. Valves equal. Clavicle linear. Laternula.*
- b. *Siphons separate at the end. Valves unequal. Clavicle flat, covering the cartilage. Lyonsia, Byssonina.*
- c. *Siphons separate. Valves unequal. Clavicle small, subcylindrical. Thracia, Periploma, Cochleodesma, Myodora, ? Poromya, Neara.*
- d. *Siphons separate, one valve attached. Clavicle large. Chamos-trea, Myochama.*

5. *Hinge toothed or toothless. Cartilage external, marginal. Shell pearly. Periostraca hard, polished.*

15. *Muteladae*, P. Z. S. 1847, 197. *Iridinidae*, Syn. B. M. 1842, 80. Foot large, compressed, angular in front; pedal opening very long. Gills large. Shell scarcely to be distinguished from *Unio* or *Anodon*, but the hinder submarginal impression is rather more truncated.

II. *Foot conical, acute, angularly bent behind* (for leaping).

16. *Cardiadae*, Syn. B. M. 1842, 75; P. Z. S. 1847, 185; Ann. and Mag. N. H. 1853, 37. Gills narrow, elongate, floating, only attached at the upper end. Cardinal teeth conical, forming a cross when the valves are closed. Cartilage external, marginal.

III. *Foot truncated and dilatile at the end* (for crawling and anchoring).

17. *Ledadae*. *Nuculidae* §, P. Z. S. 1847, 190. Gills small, oblong, subpinnate, formed of separate threads; lips large. Palpi very long, subulate. Siphons small, united. Hinge-teeth two, nearly parallel with hinge-margin, each divided into numerous transverse hook-like plates. Siphonal inflection distinct.

a. *Cartilage internal, triangular. Leda, Yoldia.* (See fig. 2.)

β. *Cartilage external, marginal. Solenella.*

17\*. *Modiolarcadae*. Gills four, thick, subtrigonal, truncated in front, narrow, produced and united together behind the foot. Lips four, moderate. Palpi obsolete. Siphonal apertures distinct, anal moderate; inhalant very large, inferior, simple-edged. Foot oblong, truncated, lanceolate, acute in front, with subposterior central hole for byssus. Shell equivalve. Hinge-teeth none

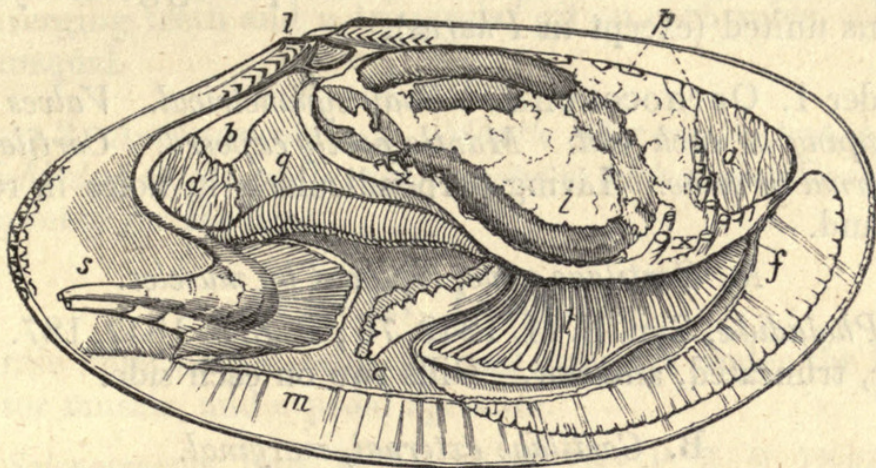


or rudimentary. Cartilage linear, external. Periostraca hard, polished. Living attached to floating seaweeds.

1. *Modiolarca*. *Modiola trapezium*, Lamk. This is the animal I described as *Crenellidæ*, Syn. B. M. 1841, 177; it is very distinct from *Crenella* or *Modiola*.

2. ?*Mytilimera*.

Fig. 2.



*Yoldia australis*.

The figure, from a drawing by Albany Hancock, Esq., represents the animal as seen through its transparent mantle, on the removal of the right valve.

*a, a*, adductor muscles; *p, p*, pedal muscles; *x, x*, lateral muscles of the foot; *f*, foot; *t, t*, labial palpi and appendages; *g*, gills; *s*, siphons; *m*, pallial line; *i*, a convolution of the alimentary canal, lying close to the right side, and producing an impression in the shell; *l*, ligament.

IV. *Foot elongate, slender, strap-like, byssiferous* (for anchoring the animal).

18. *Dreissenidæ*, Syn. B. M. 1842, 82; P. Z. S. 1847, 199. Foot conical, small; anterior adductor muscle small, on a transverse subumbonal internal plate. Mantle edge double. Valves sub-trigonal, keeled. Hinge toothless. Cartilage external, marginal. Fluvatile.

19. *Galeommidæ*, Syn. B. M. 1842, 78; P. Z. S. 1847, 192. Foot very small, ligulate, flattened beneath. Mantle edge double, outer more or less expanded and reflexed, covering (perhaps all) the shell, inner covering the gape of the shell. Gills two pair, dependent, united together behind the foot; lips elongate. Shell oblong, gaping beneath. Hinge toothless. Cartilage internal, in a triangular pit.

V. *Foot very small, rudimentary, byssiferous; hinder adductor muscle large, placed forward in the centre of the lower edge of the shell. Pedal opening small, in front near umbo; anal opening apparently behind and above the adductor muscle.*

20. *Tridacnidæ*, Syn. B. M. 1842, 82; P. Z. S. 1847, 198.



Foot small. Anterior adductor muscle very small. Mantle double-edged, inner edge expanded. Gills small, thick, pinnate, united behind.

## Order II. PHOLADACEA.

Mantle with two close, more or less elongate siphonal openings under the hinder adductor muscle. Gills two pair, produced into the inhalant or lower siphon. Pedal opening generally small. Siphons united (except in *Pharus*).

Suborder 1. ORTHOCONCHÆ. *Body symmetrical. Valves equal, gaping at each end. Mantle partly exposed. Cartilage external or none. Living perpendicularly in holes in rock or sand.*

### A. *Cartilage none, replaced by muscles.*

1. *Pholadidæ*, Syn. B. M. 1842, 76; P. Z. S. 1847, 187. Foot clavate, truncated, anterior. Gills two on each side.

### B. *Cartilage external, marginal.*

2. *Gastrochænadæ*, Syn. B. M. 1842, 77; P. Z. S. 1847, 188. Foot small, cylindrical, anterior, not byssiferous. Gills two on each side. Shell gaping in front. Cartilage small, weak. Living enclosed in or imbedded in a shell-case.

3. *Saxicavidæ*, Syn. B. M. 1842, 79; P. Z. S. 1847, 193. Foot small, cylindrical, inferior, byssiferous. Gills two on each side; lips small. Siphons moderate. Shell solid. Hinge-teeth rudimentary. Cartilage thick. 1. *Saxicava*. 2. *Cypricardia*.

4. *Pholadomyadæ*, P. Z. S. 1847, 194. Foot short, compressed, with a small bifurcate pedal appendage behind. Siphons united. Pedal opening small. Gills two on each side, thick, united behind the body. Shell oblong, gaping at each end. Hinge-teeth rudimentary or none. Cartilage exterior, marginal.

5. *Solenidæ*, Syn. B. M. 1842, 77; P. Z. S. 1847, 189. Foot very large, clavate or truncated in front, not byssiferous. Pedal opening anterior. Gills two on each side. Shell cylindrical or oblong, gaping at each end. Hinge-teeth distinct. Cartilage very large, on a distinct fulcrum. Living sunk in the sand.

Suborder 2. HETEROCONCHÆ. *Body not symmetrical. Valves unequal. Cartilage internal, in a pit; hinge simple. Pedal opening inferior. Living lying on the side in sand or mud.*

6. *Myadæ*, Syn. B. M. 1842, 78; P. Z. S. 1847, 190. Siphons elongate, united, covered with a horny periostraca. Gills two on each side, dependent; lips small. Shell porcellanous. Hinge toothless. Cartilage-pit in a hollow in one and a concavity in the umbonal surface of other valve.



7. *Corbulidæ*, Syn. B. M. 1842, 78; P. Z. S. 1847, 192. Siphons moderate. Foot small. Gills two on each side, dependent, separate, moderately prolonged; lips long. Shell porcellaneous. Hinge with a conical tooth and a cartilage-pit on each valve.

8. *Pandoridæ*, Syn. B. M. 1842, 78; P. Z. S. 1847, 192. Siphons large. Foot moderate. Gills subpinnate, one on each side, greatly prolonged; lips long. Shell pearly. Hinge with two diverging teeth and a triangular pit on each valve. Valves very unequal.

Subclass 2. ASIPHONOPHORA. *Mantle lobes mostly free, bearded behind or on the whole edge, sometimes with a separate siphonal opening for the vent.*

### Order III. LASIACEA.

Mantle lobes united, with an anal aperture under the hinder adductor muscle, and a pedal aperture.

1. *Solenomyadæ*, Syn. B. M. 1842, 78; P. Z. S. 1847, 192. Pedal opening anterior. Foot large, oblong, clavate, truncated at the end. Siphonal opening in a disc, surrounded with long beards. Gills pinnate, appearing only one on each side, broad, of separate threads. Palpi small, slender. Shell gaping, thin. Periostraca hard, polished, dilated beyond the shell; cartilage internal. Animal, leaps and swims about by suddenly drawing in the umbrella-shaped foot, at the same time the water is expressed from the hinder opening by the closing of the valves.

2. *Lasiadæ*, Syn. B. M. 1842, 78; P. Z. S. 1847, 192. Pedal opening inferior, moderate, front edge sometimes produced into a hood (or united and forming an anterior aperture for an inhalant siphon?). Gills two, laminar, dependent, unequal, oblong, on each side; lips cylindrical, outer pair small, inner very broad. Foot compressed, with a central inferior groove, byssiferous. Mantle double-edged, inner dilatile.

### Order IV. UNIONACEA.

Mantle lobes free, slightly united behind, forming a separate anal siphonal opening placed under the hinder adductor muscle.

Suborder 1. LUCINACEA. *Foot cylindrical, elongate, inferior; anterior adductor muscle generally elongate.*

1. *Lucinidæ*, Syn. B. M. 1842, 80; P. Z. S. 1847, 195. Anal siphons elongate, cylindrical, retractile into the mantle-cavity. Pedal opening inferior, moderate. Gills lamellar, only one on each side the body, oblong, broad, united behind the base



of the foot. Foot cylindrical, elongate, inferior, not byssiferous ; lips none. Mantle doubled-edged, inner dilatile.

a. Normal. \**Lucina*, *Thyasira*, *Fimbria*. \*\**Codakia*, *Loripes*.

b. *Gills two on each side, lips moderate.* ?*Ungulina*.

Suborder 2. SUBMYTILACEA. *Foot large, compressed, anterior adductor muscle nearly as large as the hinder.*

A. *Shell free. Periostraca brown, hairy. Marine.*

2. *Carditidæ*, Syn. B. M. 1842, 79 ; P. Z. S. 1847, 193. Foot compressed, conical, rather angulated behind. Cartilage external, marginal. Hinge-teeth diverging, very oblique. Gills two pairs, free, behind the body.

3. *Crassatellidæ*, Syn. B. M. 1840, 141 ; 1842, 91 ; P. Z. S. 1847, 194. Gills two pair, dependent, produced, acute, and united behind the base of the foot. Lips four, rhombic. Foot short, compressed, triangular, with a deep groove. Mantle lobes free, hinder end bearded, anal opening separate. Cartilage internal, in a triangular pit. Hinge-teeth diverging.

B. *Shell free. Periostraca hard, smooth. Fluvatile.*

4. *Unionidæ*, Syn. B. M. 1842, 80 ; P. Z. S. 1847, 196. Foot compressed, subquadrate, angulated behind. Mantle edge smooth, generally bearded behind. Gills two pair, large, dependent. Shell pearly within ; hinge variable, toothed or toothless. Periostraca hard, polished.

a. *Unionina.* Foot moderate.

b. *Mycetopedina.* Foot elongate, enlarged at the end. Shell gaping at each end. *Mycetopidæ*, Syn. B. M. 1842, 81 ; P. Z. S. 1847, 197.

C. *Shell attached by the outer surface of one valve. Fluvatile.*

5. *Etheriadæ*, Syn. B. M. 1842, 79 ; P. Z. S. 1847, 193. Mantle edge bearded. Gills large, two pair. Foot moderate, anterior adductor muscle small, linear. Gills two pair, dependent. Shell pearly and blistered within. Hinge toothless. Cartilage sub-internal, curved. Young shell free, like *Unio* ?

Suborder 3. MYTILACEA. *Foot small, ligulate, byssiferous ; anterior adductor muscle small.*

6. *Mytiladæ*, Syn. B. M. 1842, 82 ; P. Z. S. 1847, 198. Anus simple. Gills two on each side, dependent.



*α. Mytilina.* Hinder part of mantle only slightly produced ; anterior muscle small.

*β. Crenellina.* Hinder part of mantle produced, forming false siphons. Crenellidæ, *Syn. B. M.* 1842, 82.

*γ. Lithodomina.* Hinder part of mantle more or less produced ; anterior muscle moderate-sized.

7. *Pinnadæ*, *Syn. B. M.* 1842, 83 ; *P. Z. S.* 1847, 199. Anus furnished with a long ligulate valve.

#### Order V. PECTINACEA.

Mantle leaves free all round, without any separate opening for the outgoing current and vent.

Suborder 1. ARCACEA. *Shell oblong or roundish, the anterior and posterior adductor muscles subequal. Mantles bearded behind. Hinge-teeth deeply grooved or divided into transverse interlocking plates.*

*a. Foot lanceolate, subulate, angulated (for leaping).*

1. *Trigoniadæ*, *Syn. B. M.* 1842, 81 ; *P. Z. S.* 1847, 197. Shell pearly within. Hinge-teeth two, diverging, deeply cross-grooved.

*b. Foot truncated or dilatile at the end, often byssiferous (for anchoring).*

2. *Arcadæ*, *Syn. B. M.* 1842, 81 ; *P. Z. S.* 1847, 197. Foot rather compressed, truncated, often secreting a laminal byssus. Gills subpinnate. Shell subquadrate or roundish. Hinge-teeth two, each divided into numerous transverse interlocking teeth. Gills formed of fibres.

*α. Arcaina.* Foot byssiferous. Gills subpinnate, separate from each other behind. Hinge-teeth straight, even with the hinge-margin. Cartilage in small marginal pits.

*β. Pectunculina.* Foot securiform, simple, not byssiferous ; gills dependent. Cartilage in small marginal pits.

*γ. Nuculina.* Foot compressed, end of disc bearded. Gills pinnate ; lips broad, triangular, large, striated internally. Cartilage in a small, central, internal pit.

Suborder 2. MALLEACEA. *Shell subtrigonal ; anterior adductor muscle small, rudimentary, hinder large, subcentral ; gills laminar.*

3. *Pteriadæ*, *P. Z. S.* 1847. Aviculidæ, *Syn. B. M.* 1842, 83. *Ann. & Mag. N. Hist. Ser. 2. Vol. xiii.* 27



Foot slender, cylindrical, grooved in front. Shell internally pearly; hinge toothless or nearly so.

*α. Pteriacna.* Foot byssiferous. Mantle lobes fringed. Shell eared, with a byssal notch in front. Cardinal teeth rudimentary, horny, attached by byssus.

*β. Crenatulina.* Foot not byssiferous; mantle fringed behind. Shell not eared, without any anterior byssal groove; hinge toothless. Living in sponges.

Suborder 3. OSTRACEA. *Shell suborbicular; anterior adductor muscle obliterated, hinder large, central. Cartilage internal. Mantle often bearded on the whole edge.*

A. Pectinina. *Foot distinct, small, byssiferous or appendaged. Gills disunited medially. Tentacles separate from gills.*

4. *Spondylidæ*, Syn. B. M. 1842, 83; P. Z. S. 1847, 201. Foot short, thick, end with an enlarged truncate radiating disc, with a central pedicelled ovate body; lips foliaceous, pinnately lobed. Mantle with bright ocelli. Hinge with two large interlocking teeth.

5. *Pectenidæ*, Syn. B. M. 1842, 83; P. Z. S. 1847, 200. Foot long, cylindrical, often byssiferous at the base. Mantle with bright ocelli. Hinge of shell not, or only obscurely toothed.

6. *Limadæ*. *Pectenidæ*, Syn. B. M. 1842, 38; P. Z. S. 1847, 200. Foot compressed, not byssiferous. Mantle without any ocelli on the edge. Shell gaping; hinge toothless.

B. Ostreina. *Foot none. Tentacles separate from the gills.*

7. *Ostreidæ*, Syn. B. M. 1842, 84; P. Z. S. 1847, 201. Shell attached by the outer surface of one valve. Hinge toothless. Tentacula short.

8. *Placentadæ*, P. Z. S. 1847, 201. *Placunidæ*, Syn. B. M. 1842, 81. Shell free when adult. Hinge with two diverging teeth. Animal —?

C. Anomiaina. *Foot small, cylindrical, truncate at the end, forming a laminal horny or strong byssus. Tentacles very long, not distinct from the gills.*

9. *Anomiadæ*, Syn. B. M. 1842, 81; P. Z. S. 1847, 201. Foot passing out through a slit in one of the valves and permanently attaching the animal to marine bodies. Shell with two or three subcentral scars.





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