APGAR, A. C 1880

A Key to the Mollusca

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A KEY

to the

MOLLUSCA,

given in

VERRILL'S SYSTEMATIC CATALOGUE,

of the

INVERTEBRATES

of

SOUTHERN NEW ENGLAND,

and the

ADJACENT WATERS.

A. C. Apgar

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PREFACE

As far as the author knows this is the first key of any of the mollusks of the United States published.

He claims originality only in the key, [illegible] in the arrangement of that [illegible] the classification [illegible] the species [illegible] orders and families [illegible] He has made [illegible] in the wording of his descriptions,

He hopes [illegible] will [illegible] that [illegible]

The [illegible] are all [illegible] no pretensions.

The figures on page 8, the right hand page, [illegible] from [illegible] fisheries [illegible] of New England. Fig. 2 [illegible] from Binney's [illegible] of Mass. Fig. [illegible] first [illegible] Fig. [illegible] page [illegible]

CONTENTS,

The derivation of the names are given in parenthesis.

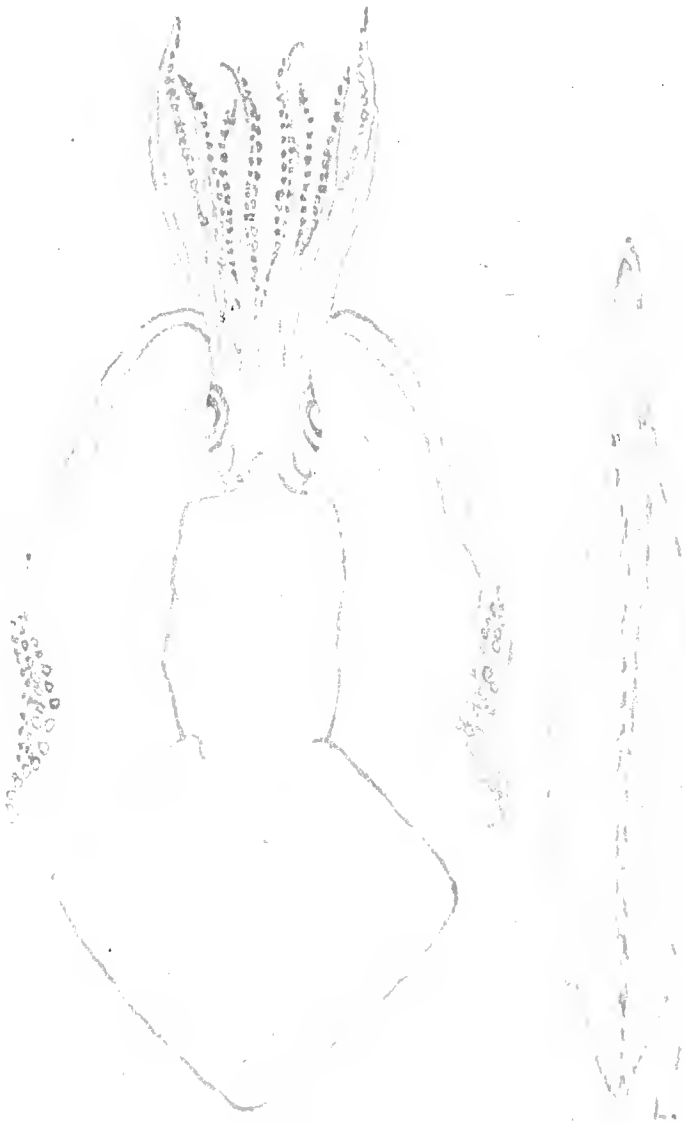
each individual and an accident, or for a distinct group of them, and without the power to project any part beyond the enveloping sac.

Class Tunicata, Order Ascidiida
Page

Compound fixed animals, each living in a cell of a plant like organism; cells not in communication; animals provided with a row of tentacles around mouth; the alimentary canal suspended in a double walled sack. The investing membrane is corneous or fleshy and usually highly charged with carbonate of lime.

Class Polyzoa.

CEPHALOPODA.



Loligo pallida ⅓ nat. size.

Pen of L. pallida ½ nat. size.

g

like revol

ribs; canal tender.

2/5 or mo

[illegible]

[illegible] with distinct growth

[illegible]

[illegible] length of the shell.

[illegible]

[illegible] and sharply defined, shallow

[illegible]

[illegible] a more oblique direction, a notch.

[illegible]

GASTEROPODA.

O.-O.F.

Rhipidoglossa

Trochidæ

3 Conical; ap. circular, pearly within. Umbilicus large and deep; wh. convex and rendered angular by a prominent revolving ridge; lip simple sharp; operculum horny nucleus central, 12, 9, 95, 5, 2/5.
Margarita obscura.

4 Globose or conical, thin; ap. semi-lunar; inner lip oblique; outer lip sharp flattened; umbilicus a lengthened groove along the pillar.

Ovate-conic; wh. encircled by 8 purplish brown bands and numerous minute undulating lines; sutures fine deeper; nearly orbicular; inner lip white, flattened and excavated by a smooth, crossing shapped groove terminating in an umbilicus 11, 8, 50, 5, 1/2. Lacuna vincta

Globular-ovate; ap. semi-lunar, oblique; umbilicus large and deep. 5, 6, 95, 1/2, 1/4.
Lacuna neritoidea.

5 Ap. 1/3 the length of the shell; ovate-conic; [illegible] at top; suture distinct; wh. 5-6; umbilical chink.

Usually coated with a dark green pigment or minute vegetable; animal blackish; thin; common on seaweed about high water mark
4, 2.5, 5, 5, 1/3. Litterorella minuta.

Wh. convex, covered with regular microscopic lines revolving around the shell; suture deep; light yellow horn color; ap. oblique, ovate, angular behind. 4, 1.7, 25, 6, 1/3. Rissoa aculeus.

Wh. convex; 3 revolving lines on upper whorl; ap. ovate; fuscous. 2.7, 12, 10, 5 1/3. Rissoa exarata.

6 Turrited shells, or more times the length of the ap.

Turritellidæ

--Wh. crossed by very distinct elevated ribs; ap. ovate, the margin entirely united; lip continuous, reflected; umbilicus none.

16-18 delicate ribs, not crossing the suture, no revolving lines between; white.
12, 5, 30, 8, 1/5. Scalaria lineata.

14-20 ribs, with the [illegible] between marked with numerous revolving lines; white. 12, 5, 30, 8, 1/5. Scalaria multistriata.

ubl

GASTEROPODA.

[illegible] straight, simple, [illegible]; aperture oblong, sub-quadrate [illegible]

A reversed wh. at the apex. G. Turbinilla. Wh. slightly convex; 25 ribs; 1/4 revolving lines looking like ; because [illegible] in pairs; suture well defined. 6, 25, 12, 9, 1/4. T. interpunctata. Wh. well rounded; suture rather deep; numerous ribs not so broad as the interspaces; about 5 revolving lines on the upper whorls, interrupted on the ribs. 5, 16, 21, 11, 1/4. T. elegantissima. Wh. moderately convex, flatted in middle; 25 ribs on lower wh. [illegible] lines on the upper whorl [illegible] cross the ribs; apical wh. minute; [illegible] obelisk shaped. 4, 15, 22, 9, 1/4. T. [illegible]. Large smooth reversed apical wh.; [illegible] slightly convex flattened; [illegible] ribs on lower wh.; revolving lines very minute; [illegible] lowe num [illegible] with [illegible] [illegible]. 4, 15, [illegible], 1/4. T. [illegible]. Reversed wh. minute; [illegible] 18 ribs on lower wh.; [illegible] nearly [illegible]. 4, 11, 10, 1/4. T. [illegible]. 20 ribs on body wh., interstices deeper; appearantly smooth; up. round-ovate. 4.5, 1.25, 13, 10, 1/4. T. equalis.

III. Apex acute; animal and [illegible]; suture inconspicuous; wh. flattened [illegible] with light brown transverse band; variable; shell white, shining; animal hyalin. 4, 15, 21, 12, 1/4. Lulima [illegible].

Shell discoidal; up. dilated; concave; umbilicated beneath; [illegible] the under side. 4, 15, 12, 4, 1/4. Shenea planorbis.

II Shell spiral; wh. together, sinistral, [illegible]; [illegible] reculated.

Turretted, granulated. 5, 12, 23, 12, 1/4. Triforis nigrocinctus.

Thin, transparent, ovate-globose, [illegible]

GASTEROPODA.

III Shell spiral; wh. separated operculated.

Shell conic tubular; unequal strie [illegible] the length of the tube; spiral portion 15 long, the rest continued indefinitely, sometimes 200 long; diameter of ap. 6.
Vermetus radicule

IV Shell tubular, merely curved, very minute; operculated.

About 25 strong encircling ribs. l. .25; dia. .6,
Cœcum pulchellum.
Ridged lengthwise of the shell. l. .25 dia. .6.
Cœcum cooperi.

V Shell not apparently spiral but flat or concave.

1 With an internal, usually horizontal partition or diaphragm.
Oblique-convex oval, partition [illegible] one side; apex prominent tapped to one side; convexity moderate but different according to the object on which it adheres; common, l. .35, w. .25. [illegible] of ap. Crepidula fornicata.
Shell flat; apex acute, terminal; diaphragm convex; found inside shells. l. .16, w. .12.
Crepidula plana.
Shell very convex; apex terminal, parallel from body of shell; diaphragm convex, less than ½ of ap.; inside brown or tetted edge of diaphragm. l. .11, w. .07. Crepidula convexa.
Small subconic, oval; apex central; numerous radiating lines; diaphragm triangular fastened by one side, the free point nearly corresponds with the inner apex of the shell. l. .12, w. [illegible] Crepidula [illegible]

2 Without internal partition.
Shell basin shaped, oblong, oval, thin; apex obtuse; surface finely checkered with

alveus

growth other

2.12 w.7.
Trachydermon ruber

127 68 6,3/4 Melampus bidentatus

oral ones short pellucid; tail pointed
6, 1. Tergipes despectus.
linear; branchiae large and 8-10 s.
ones on each side, the large ones very
much enlarged near the end, and with
the internal dark parts look like crosses.
Hermaea cruciata.

3 Branchiae simple unbranched, situated in double oblique cross lines on each side of body, club shaped.

lanceolate, widest ⅓ from head; drab color, back with a carmine line margined with silvery dots between tentacles and each tuft of branchiae; tail pointed, silvery; branchiae in 5-7 double rows on each side. 36, 4.
Montagua pilata.

lanceolate; dorsal tentacles longer than oral ones; light yellow tinged with pale orange; branchiae 5 double rows on each side about. 20, 3.
Montagua gentili

lanceolate tapering to a point; front rounded; oral tentacles longer than dorsal ones; branchiae about 6 double rows on each side, about 18 in each front double row. 12, 15.
Montagua vermifera.

4 Branchiae unbranched, situated in very many oblique rows, or in irregular clusters on each side.

triangular, broad in front; branchiae oblanceolate, 200-400 in number arranged in 18-24 oblique rows on each side; great variation in size and color from flesh-color to dark olive and brown much mottled. 10, 16.
Eolis papillosa.

lanceolate; watery white; branchiae clustered in 7 clusters of about 5 each on each side; lack exposed. 12, 2. Caryphella gymnota.

5 Branchiae branching bipinnate, arranged in a circle or crown in the centre of the back.

lanceolate-oblong, widest about ⅓ from head;

ISOPODA.

[illegible] appendages [illegible]
back tapering over each [illegible]
pieces with white and [illegible]
[illegible] positions of appendages [illegible]
[illegible]
[illegible] posterior [illegible]
[illegible] Glyptella [illegible]

PTEROPODA.

Free sea mollusks swimming by means of two fin like expansions developed from the head and fore extremity. Hermaphrodite. Head mostly rudimentary, expanded into a large muscular fin. Mouth small, sometimes tentaculate. Small active animals, ily colored and mostly provided with thin symmetrical shells and found in large numbers on the surface of the ocean at night.

A Animal without mantle or shell; head distinct; fins attached to the sides of the neck.

Foot distinct with a central and posterior lobe; head with tentacular projections.

Gelatinous, pellucid, pale blue; mouth and end of body scarlet out of water; wings somewhat triangular; tail acute; tentacles six, conical; length 3c; width including wings 2c.
Clione papilionacea

B Animal with an external shell; head indistinct; foot and tentacles rudimentary, mouth in a cavity formed by the locomotive organs.

1 Shell symmetrical, straight or curved, globular or needle shaped

Shell long, conical, slender, slightly curved towards the acute apex, polished, diaphanous; animal white; wings obovate and bear each a slender tooth near the middle of the ant. edge; length 1b, width 3. Styliola vitrea.

Shell long, straight, ant. end dilated, compressed on the sides and terminating

Gymnosomata.

Thecosomata.

LAMELLIBRANCHIATA

[illegible] Bivalves. Head [illegible] in a bivalve shell, [illegible] valves. Body [illegible] within mantle. [illegible] organs [illegible] of lamellibranch or filibranchous [illegible] distinct.

The shell though usually equivalve [illegible] inequivalve, but always inequilateral [illegible] usually two but sometimes one adductor muscle [illegible] the valves.

The shell [illegible] is open [illegible] ligament [illegible] cartilage [illegible] or both.

Locomotion is very important in the [illegible] states; many are permanently fixed either by their shells, or by a peculiar secretion [illegible] form of which is known as the byssus, or they bury themselves in the sand, or bore into timber or rocks.

Note.—[illegible] right valve; [illegible] anterior, posterior, [illegible] dental teeth. Numbers [illegible] distances are all in m.m. At the end of the descriptions they are for length in front of beak, length behind beak, height (distance across from hinge to the other edge), breadth (distance from outside of one valve to outside of other), and, if the fifth be [illegible] is [illegible] the angle formed by line joining the beak and the edges of the shell.

I Shell gaping more or less at the ends.

A Without hinge or ligament often with accessory valves. Animal club shaped or worm like, with short truncate foot; siphons long united to near their tips.

LAMELLIBRANCHIATA.

1 Valves equal, largely open at both ends, forming a ring placed at the larger extremity of a shelly tube open at both ends and furnished with pallets.

posterior auricle extends down $\frac{2}{3}$; the ant. triangle $\frac{1}{3}$; pallets emarginate at tip, convex on one side and plain on the other; shell about as long as the blade (common ship-worm boring in timber).

Valves 5, 5, 5; pallets 5, 1.4; beak $\frac{2}{3}$ of valve.
Teredo navalis.

1 Ant. auricle extends a little higher than beak and separated by a narrow notch and extends down $\frac{2}{3}$; ant. triangle $\frac{1}{2}$ with 20-30 radiating grooves; pallets small ovate rounded or slightly emarginate; shell pointed. 6, 6, 6; $\frac{1}{4}$, 1.6; $\frac{1}{3}$.
Teredo megotara.

Post. au. and ant. tri. both extend down $\frac{1}{3}$; post. au. does not extend up quite as high as beak; pallets battledore like 6, 3, 3; — 1, ; — Teredo thomsonii.

Post. au. rounded not extending above beak but down $\frac{2}{3}$; ant. tri. $\frac{1}{2}$; pallets small angular obovate blunt.
10, 9, 8; — 6, 2.4; — $\frac{1}{2}$ Teredo dilatata.

Post. au. rounded does not extend upward but extend downward $\frac{2}{3}$; ant. tri. $\frac{1}{2}$; pallets ear shaped, blade oblong feathered serrated.
6, 6, 6; — 12, 2; — $\frac{1}{2}$ Xylotrua Tiemoiai.

2 Shell gaping equally at ends; a rib like process or tooth arises from the back and shoots nearly across the shell; shell large, more than 4" long; (found in wood, clay and stones which they have perforated.
Shell very large oblong-ovate, white, covered with radiating toothed ribs, the teeth formed by the lines of growth.

FAM. LITHOPHYCHIDÆ.

[illegible]

B [illegible] elongated [illegible] long as high, [illegible] more or less [illegible] ends, [illegible]

with external ligament

1 [illegible] shaped, [illegible] as long as high, [illegible] each terminal yellow [illegible] green epidermis.

Off [illegible], 5, 20, [illegible] [illegible] oval-elliptical, [illegible], [illegible] light yellow-green epidermis, [illegible] with lamellæ [illegible] manner as to form [illegible] distinct [illegible] of [illegible] [illegible] shell. [illegible]

2 Beak nearly central, sides nearly parallel, more or less [illegible] and nearly [illegible] rounded [illegible] anterior, post. end [illegible] each obtuse and slightly [illegible] surface

LAMELLIBRANCHIATA.

Coarsely wrinkled by the stages of growth and covered by a dense and strong epidermis which is yellowish in color and folds over the edge, pallial line with sinus which passes beyond beaks.
50 t42, 31, 25, 155, Tagelus gibbus.

Oblong-oval arcuated; surface smooth in the central region, wrinkled at the ends, with a band of reddish purple passing from the beaks across the shell growing wider and fainter in its progress, this is visible within and covered by a faint rib like thickening; epidermis straw color.
10 t16, 10, 8, 170 Tagelus divisus.

3 Very irregular, about toothless; ligament long and strong; pallial sinus narrow and deep; right valve a little larger than the left; epidermis thin dingy yellow; muscular impressions obscure; foot of animal bright orange yellow; an exceedingly variable rough shell found adhering to almost all kinds of marine objects. 10 t15, 14, 10, 100, [illegible]

4 Long-oval, more than twice as long as wide, chalky white with radiating ribs some of them with toothed scales.
Ant. end covered with elevated toothed radiating lines; post. end marked with finer radiating lines, 2 small teeth in each valve; distinct crate lunule.
[illegible] t 3, 100, Petricola pholadiformis.

5 Smooth shining thin more or less iridescent with very fine concentric striae; ant. dorsal margin straight or slightly concave; post. end slope, rapidly and is sub-truncate at end; ventral margin nearly parallel with ant. dorsal, color pink, light straw or white often banded concentrically. 5 t5, 1, 3, 130. Angulus tenellus

[illegible] ELEPHANTIASIS.

[illegible] and a little more pointed; tiny, white covered by a dirty brown epidermis; [illegible] process extending from the cell valve into the right; very common [illegible] 50 [illegible]60. Nya [illegible]

[illegible]

[illegible]

D) Hinged, equi-[illegible] minutes; tooth on the [illegible] for the cartilage [illegible] cavity [illegible] within and without; [illegible] in each valve; nearly closed; [illegible] hinging [illegible] thin low-ribbed epidermis [illegible] with [illegible] marked faintly with

BALANIDÆ.

Small, white, not very thin, hinge callosity not spoon shaped, ovate-triangular, beaks post. ant. dorsal margin nearly parallel with ventral. 12,16, 12, 7, 130. Interior clear white. Thracia truncata.

Shell equivalve and very slightly [illegible] impressions [illegible] from whit dark epi[illegible] 10, 12, 17, 9, 135 Mytilus fragilis.

fusca

[illegible]

yellow with a purplish blotch at the [illegible] and epidermis thin and of a darker color. 8, 13, 20, 16, 110.

Lasiocardium morbusi.

Cardinal teeth small, numerous, disposed in a line along the hinge margin. Unionoidea or Kidney shaped, pointed in front broad and truncate behind gaping at both ends; a rib like

45°. 23+34, 35, 25,
See* page 43

A

1 curving

2 No lunule; car. t. epider

n

[illegible]

[illegible] leaves, no lumule, [illegible] diverging
[illegible] in each valve, no sinus.

Corbicula in place of lunule, [illegible]
[illegible] dark shining brown color [illegible]
shading white, [illegible] purple
[illegible] Upper [illegible]

[illegible] medium

trie r
v r
ong narrow

1 c.t. in r.v., 1 in l.v. 12 + 18, 25.
Astarte undata

LAMELLIBRANCHIATA.

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FAMILIBRANCHIATA.

2 Without lunule; c.t. less than 6 in each valve; minute nearly orbicular.

Three c.t. in l.v., middle one conical triangular, two in r.v.; sinus narrow, ant. end more rounded; ant. end and most of the base white tinged with rose color, post. and upper portion reddish purple; within white except post. which has the purple of the outside; common. 1¼ t 2, 3, 106, 110. Tottenia gemma.

Post. more rounded; shell somewhat triangular; rather solid; shining straw color; no purple; sinus very small. 1¼ t 1½, 3, 106, 95. Tottenia manhattensis.

3. Small to minute; a series of eight or more c.t. in each valve; no sinus; a spoon shaped pit for the cartilage.

Minute, somewhat triangular oblique globose; 3 ant. t. and 7 post. t. in each valve; epidermis olivaceous; coarse unequal lines of growth.
3 t 1, 3½, 3, 90. See t t page 43.

Trapezoidal, thin, 8 ant. t. and 4 5 post. t., post. ones long and slender, interior silvery white but not pearly; epidermis grass green; beaks prominent; no radiating lines
6 t 1½, 6, 4, 110 See t page 44.

Oblique ovate-triangular; ant. end short, 12 ant. and 18 post. teeth, some very small near spoon shaped pit, the series of teeth nearly at right angles to each other; interior pearly; epidermis light olive color, with darker zones.
2 t 8, 8, 6, 85. See t page 43.

LAMELLIBRANCHIATA.

hering;
large narrow gradually widening from hinge end; (the oyster)
Ostrea virginiana.

2 Orbicular; more or less inequivalve; hinge line straight

Lower valve nearly flat and nearly smooth; upper valve without ribs; diameters about 150, breadth 35. Pecten tenuicostatus.

With 50–100 radiating ribs; length 75, height 85, breadth 25.
Pecten Islandicus.

About 20 radiating ribs, l. 65, h. 62, b. 30. Pecten irradians

3 Orbicular, irregularly foliated, very inequivalve, under valve nearly flat, perforated near the beak for passage of muscle by which it adheres

Surface rugged, scaly, variously wrinkled; aperture ovate; beak not quite reaching margin; pearly; usually 25in diameter
Anomia glabra.

Beak reaching margin; upper valve with fine prickly radiating lines; lower valve smooth; aperture circular; color yellowish white; diameter 12. Anomia aculeata.