

Proceedings of the Boston Society of Natural
History 1904 32(2): 23-42

ACADIA NATIONAL PARK
RESOURCE MANAGEMENT DIVISION

No. 2.—LIST OF SHELL-BEARING MOLLUSCA OF
FRENCHMAN'S BAY, MAINE.

BY DWIGHT BLANEY.

THE following one hundred and twenty-seven species and five varieties were collected during the summers of 1901, 1902, 1903, and 1904 by dredging and collecting on the shores. All species were found alive unless otherwise stated. Many species were also obtained by examination of the stomachs of haddock caught in the Bay. As many as thirty-eight species were found in one lot of ten stomachs in June, 1903.

The list has been arranged in the order given in Dall's Bulletin 37, U. S. national museum, and only such synonyms have been added as will suffice to identify the species to the student.

I am under obligation to Dr. W. H. Dall, Prof. A. E. Verrill, Miss Katherine J. Bush, Prof. Edward S. Morse, and Mr. C. W. Johnson for the identification of various species.

PELECYPODA.

Anomia simplex d'Orbigny.

Anomia ephippium, Gould, '70, p. 204.

Anomia electrica, Gould, '70, p. 205.

Anomia glabra, Verrill, '73, p. 696.

A few small specimens found inside dead shells of *Chrysodomus decemcostatus* Say.

Anomia aculeata Linné.

Found abundantly, attached to stones and shells, even on the brachiopod (*Terebratulina septentrionalis*), at all depths from 10 to 40 fathoms, hard bottom.

Pecten (Placopecten) magellanicus Gmelin.

Pecten tenuicostatus, Gould, '70, p. 196.

Chlamys (Placopecten) clintonius, Verrill, '97, p. 69.

Pecten (Placopecten) magellanicus, Dall, '98, p. 726.

Found commonly in colonies and of large size growing to over seven inches in diameter, 25 to 45 fathoms. Young specimens

dredged at station 17, full grown at station 11. This scallop is very good eating, and is much sought after by the natives. A. S. Packard ('67) in the Invertebrate fauna of Labrador, also mentions the edible quality of this species.

Pecten (Chlamys) islandicus (Müller).

Pecten islandicus, Gould, '70, p. 198.

Not found alive as yet by us, but abundant valves dredged at stations 10, 11, 17, 22,—25 to 45 fathoms, hard bottom.

Mytilus edulis Linné.

Found most abundantly in colonies on rocks in many places about the Bay, covering large areas, as at Calf Island, the Narrows, etc. The natives report finding pearls in this species and also in *Modiolus modiolus* Linné. The so called variety *pellucidus* Pennant, is also found everywhere with the *edulis* though it is not so numerous.

Modiolus modiolus (Linné).

Modiola modiolus, Gould, '70, p. 186.

Modiolus modiolus, Dall, '98, p. 790.

Found abundantly on hard bottom at all depths, also in tide pools firmly wedged in crevices. Used by fishermen as bait; grows to large size in deep water and is often brought up on trawls.

Modiolaria nigra (Gray).

Not common, dredged at station 9 — muddy bottom — though a few were dredged at station 23 on rather hard bottom. The young specimens are a chestnut brown color, becoming black in the adult.

Modiolaria corrugata Gould.

Not common, dredged at stations 6 and 12, hard bottom. A few found in haddock, June 7, 1903.

Modiolaria discors (Linné).

Common, usually found imbedded in branches of seaweed or around roots of *Laminaria*. Stations 17 and 23, hard bottom.

Crenella glandula (Totten).

Abundant on muddy bottoms, 10 to 20 fathoms, stations 1, 2, 7, 9, 13.

Crenella decussata (Montagu).

Found abundantly with the preceding species — same conditions.

Nucula tenuis (Montagu).

Common, dredged abundantly at stations 7, 8, 9, muddy bottom, 10 to 20 fathoms; also found abundant in haddock.

Nucula proxima Say.

Most abundant, everywhere on muddy bottom. Found in haddock, some fish having only this species in large numbers in stomach.

Nucula delphinodonta Mighels.

Very common, found usually in company with the preceding, as also in haddock.

Yoldia limatula (Say).

Rather rare, found occasionally in haddock; a few valves of large size dredged in Calf Island Bay. Found common and of large size in Somes Sound, Mount Desert Island, by Mr. Harold S. Colton. We have dug a rich yellow colored form from mud off Soward's Island, at just below low water mark, during low spring tides. Some specimens were over two inches in length.

Yoldia sapotilla (Gould).

Very common, dredged in large numbers on soft bottom at stations 1, 2, 7, 9, 10, 12, in 15 to 35 fathoms. Also found common in haddock. Specimens dredged at station 13 ovulating on August 21st. The eggs were of a delicate pink tint.

Yoldia myalis (Couthouy).

A few specimens dredged near station 18.

Yoldia thraciaeformis (Storer).

A few found of large size in sticky mud at station 9. Young specimens very common in August at station 12. Many young found in haddock.

Leda tenuisulcata (Couthouy).

Not common, dredged at stations 3, 7, 8, 10, rather muddy bottom. Also found in haddock.

Venericardia (Cyclocardia) borealis (Conrad).

Cardita borealis, Gould, '70, p. 146.

Abundant, large specimens dredged on hard bottom at stations 7, 8, 9, 10. The adult specimens were much more elevated in shape than the young.

Venericardia (Cyclocardia) novangliae (Morse).

Cyclocardia novangliae Morse, '69, p. 76.

Not as common as the preceding with which it is found and from which it is readily distinguished by its much finer sculpture and character of hinge margins.

Astarte castanea (Say).

Rather rare, a few specimens dredged at station 17.

Astarte undata Gould.

Astarte sulcata, Gould (not DaCosta), '70, p. 119.

Astarte undata Gould, '70, p. 121.

Very common, though of small size, at station 7. Full grown specimens common in deeper water at station 17. Quantities of dead shells of large size at station 11.

Astarte undata var. *latisulca* (Hanley).

Astarte undata var. *latisulca*, Dall, :03, p. 938.

Common with the preceding.

Astarte subaequilatera Sowerby.

Astarte crebricostata, Gould, '70, p. 126.

Astarte lens, Dall, :03, p. 939.

Rather common, hard bottom, stations 17, 22.

Astarte borealis Schumacher.

Astarte semisulcata, Gould, '70, p. 121.

Rare, only valves dredged at station 17.

NOTE.—This and the following species are placed in section Tridonta Schum. by Dall. This species is the type.

Astarte banksii Leach.

Rare, only valves dredged, station 24. This is an Arctic American species.

Turtonia minuta (Fabricius).

A few found in crevices of piles between tides. Also found abundant in mud about stones, on rough beaches between tides.

Thyasira gouldii (Philippi).

Cryptodon gouldii, Gould, '70, p. 100.

Very abundant on rather soft bottom, 20 to 40 fathoms. Found in haddock.

Thyasira plana (Verrill and Bush).

Cryptodon planus Verrill and Bush, '98, p. 788.

A few of this species were identified by Professor Verrill and Miss Bush from among a number of *T. gouldii* sent to the Yale museum.

Axinopsis orbiculata Sars.

Rare; a few dredged 100 yards west of Ryefield Point, Ironbound Island, in 1904, at 15 fathoms.

Axinopsis orbiculata var. **inequalis** Verrill and Bush.

Rare; dredged in same locality as above.

Cardium (Cerastoderma) pinnulatum Conrad.

Very common, found almost everywhere, 20 to 30 fathoms. The largest specimens in haddock.

Cardium (Cerastoderma) ciliatum Fabricius.

Cardium islandicum, Gould, '70, p. 139.

Not rare, dredged at stations 10, 17, 18, and 22, on hard bottom, 20 to 30 fathoms. All specimens, even large ones, with the epidermis.

Serripes groenlandicus (Gmelin).

Aphrodite groenlandica, Gould, '70, p. 144.

A few large valves dredged at station 6, and a few young live specimens with the pretty red zig-zag markings dredged at station 7.

Cyclas islandica (Linné).

Cyprina islandica, Gould, '70, p. 129.

Common though of small size at station 7. Full grown specimens dredged by Mr. H. S. Colton at Southwest Harbor, Mt. Desert.

Venus mercenaria Linné.

One valve dredged at station 4.

Gemma gemma (Totten).

Gemma gemma, Dall, :02a, p. 378.

One valve of this small species, still tinted with purple, dredged off western shore of Ironbound Island, 150 yards west of Ryefield Point, 15 fathoms, mud and gravel.

Liocyma fluctuosa (Gould).

Tapes fluctuosa, Gould, '70, p. 136.

Lyocyma fluctuosa, Dall, :02a, p. 378.

Rare, a few valves dredged at station 10.

Macoma balthica (Linné).

Macoma fusca, Gould, '70, p. 94.

Macoma balthica, Dall, :00, p. 298.

Very abundant in shallow water. The shells vary greatly in solidity, some being thin and tinged with pink or yellow.

Macoma calcarea (Gmelin).

Macoma proxima, Gould, '70, p. 95.

Macoma calcarea, Dall, :00, p. 299.

Common, dredged in 10 to 15 fathoms, stations 1, 2, 4, 8, and 13.

Spisula (Hemimactra) polynyma (Stimpson).

Mactra ovalis, Gould, '70, p. 75.

Only valves dredged as yet, station 18, though it is reported alive on Stave Island bar.

Thracia conradi Couthouy.

Rare, valves of large size dredged at stations 6 and 16. Young alive, small, station 7.

Thracia myopsis Beck.

Frequent, dredged at stations 2, 4, 12.

Thracia truncata Mighels and Adams.

Frequent, only valves dredged, stations 22, 24, and 27.

Periploma fragilis (Totten).

Anatina papyracea, Gould, '70, p. 66.

Frequent, dredged at stations 4, 12, and 13. Also found in had-dock.

Lyonsia hyalina (Conrad).

Common, dredged at stations 1, 2, and 4.

Lyonsia arenosa (Möller.)

Rare, only one specimen, dredged at station 2.

Cuspidaria sp.

One defective specimen, dead. Suggested by Dr. W. H. Dall as probably the *C. glacialis* Sars, '78, p. 88, pl. 6, fig. 8. Dredged 100 yards south of Egg Rock light, 25 fathoms, mud and gravel.

Pandora (Clidiophora) gouldiana Dall.

Pandora trilineata Gould, (not Say), '70, p. 62.

Pandora (Clidiophora) gouldiana Dall, :02, p. 511.

Only valves dredged by us at stations 22 and 23. It is probably found alive in shallow water up the Bay. Found alive and common by Mr. H. S. Colton at Southwest Harbor, Mt. Desert.

Mya arenaria Linné.

Abundant, found in large colonies in many places about the Bay, as at Stave Island Harbor, and Yellow Island, etc., also on Iron-bound Island on the northeast shore among the rocks, where very distorted specimens were found. The young dredged in deep water, 20 to 40 fathoms, are quite different in shape from those grown in soft mud, and have angulated form. Immense deposits of shells in the many Indian shellheaps about the Bay.

Mya truncata Linné.

Only valves dredged at stations 17, 19, 22, deep water. They show great variation.

Panomya norvegica (Spengler).

Panopaea arctica, Gould, '70, p. 51.

Panomya norvegica, Dall, '98, p. 832.

Only valves of this interesting arctic species found at stations 17,

22. Verrill ('74) reports dredging it in 115 fathoms off Casco Bay, Maine, in 1873.

Saxicava arctica (Linné).

Saxicava rugosa, Gould, '70, p. 87.

Very abundant, wedged in rock crevices in tide pools. Very large specimens found in pool on Yellow Island.

Cyrtodaria siliqua (Daudin).

Glycimeris siliqua, Gould, '70, p. 53.

Cyrtodaria siliqua, Dall, '98, p. 835.

Rare, only valves dredged, station 14.

Ensis directus (Conrad).

Solen directus, Conrad, '43, p. 325.

Solen ensis Linné, var. *americanus* Gould, '70, p. 42.

Ensis directus, Dall, '99a, p. 108.

Common in colonies in a few places about the Bay, as in Hammond's Cove, just below low water. Called "razor fish" by the natives.

Zirfaea crispata (Linné).

One valve about $\frac{1}{2}$ inch in length in dredgings off Yellow Island, Aug., 1904, 10 fathoms, muddy.

Teredo megotara Hanley.

Many specimens found in a piece of driftwood cast up on the beach in Jacob's Cove, Ironbound Island, after a hard southerly storm, Sept. 10, 1902. We also found specimens of the *Lepas anatifera* and *L. pectinata* attached to wood at the same time.

SCAPHOPODA.

Dentalium entalis (Linné).

Entalis striolata, Gould, '70, p. 266.

Dentalium entalis, Pilsbry, '97, p. 42.

Very common in a few places, as at stations 17 and 22.

Dentalium occidentale Stimpson.

Dentalium dentale, Gould, '70, p. 266.

A few specimens, dead, dredged at station 4.

GASTROPODA.

Retusa gouldii (Couthouy).

Utriculus gouldii, Gould, '70, p. 217.

Cylichna gouldii, Verrill, '81, p. 383.

Retusa gouldii, Pilsbry, '93, p. 217.

Rare, a few found in company with the following species.

NOTE.—Formerly in *Utriculus*, now in subgenus.

Retusa pertenuis (Mighels).

Utriculus pertenuis, Gould, '70, p. 218.

Retusa pertenuis, Pilsbry, '93, p. 216.

Very common, dredged at stations 12 and 13.

Cylichna alba (Brown).

Very common, dredged at stations from 10 to 30 fathoms, mud, sand, and gravel; Flander's Bay, Stave Island Bay, etc. The largest specimens off Ironbound Island, station 17.

Amphisphyra pellucida (Brown).

Diaphana debilis, Gould, '70, p. 216.

Amphisphyra pellucida, Verrill, '81, p. 382.

Uncommon, dredged at stations 7 and 12. The best specimens dredged in Calf Island Bay.

Bela incisula Verrill.

Bela impressa Verrill (not Mörch), '81, p. 365.

Bela incisula Verrill, '82, p. 461.

This is the most common of the Belas found in the Bay. We have dredged it on almost all kinds of bottom from soft to hard. Abundant at stations 1, 4, 7, 8, and 10.

Bela gouldii Verrill.

Bela virgulata Verrill (not Reeve), '81, p. 365.

Bela gouldii Verrill, '82, p. 465.

Only one dead specimen dredged at station 17.

Bela mitrula (Lovén).

Bela mitrula, Verrill, '84, p. 249.

Rare, dredged at stations 1 and 2.

Bela mitrula var. **concinnum** (Verrill).

Bela concinnum Verrill, '82, p. 468.

Bela exarata Verrill (pars), '82, p. 467.

Bela mitrula var. *concinnum* Verrill, '84, p. 266.

Rather rare, dredged at stations 2 and 4.

Bela nobilis (Möller).

Defrancia nobilis Möller, '42, p. 85.

Bela scalaris, Verrill, '82, p. 471.

Bela turricula, Gould (not Montagu), '70, p. 351.

Very common at many stations, as stations 4, 7, 10, 11, and 17. The typical *B. scalaris* has a more acute spire and larger canal than this species.

Bela harpularia (Couthouy).

Rather common, dredged at stations 8, 10, and 11.

Bela cancellata (Mighels and Adams).

A few specimens dredged $\frac{1}{2}$ mile south of Egg Rock light, 25 fathoms, rocky. They were the slender form.

Bela pleurotomaria (Couthouy).

Not rare, dredged at stations 4, 10, and 11.

Bela decussata (Couthouy).

Rather rare, dredged at stations 1, 2, and 4.

Bela bicarinata (Couthouy).

Pleurotoma bicarinata, Gould, '70, p. 349.

Bela bicarinata, Verrill, '82, p. 481.

Rare, dredged at station 10.

Bela bicarinata var. **violacea** (Mighels and Adams).

Bela violacea, Gould, '70, p. 353.

Bela bicarinata var. *violacea*, Verrill, '82, p. 483.

Not rare, dredged at stations 4, 8, and 10.

Admete couthouyi (Jay).

Admete viridula, Gould, '70, p. 391.

Rare, a few dredged at station 17. Also a few found in haddock.

Buccinum undatum Linné.

Very abundant; in tide pools, also dredged in shallow water on hard bottom in many places.

Buccinum cyaneum (Bruguière).

Buccinum grönladicum, G. O. Sars, '78, p. 259.

Buccinum cyaneum, Verrill, '82, p. 492.

One immature specimen, with protoconch, dredged, 10 fathoms, station 16, Sept. 1, 1902.

Chrysodomus decemcostatus (Say).

Fusus decemcostatus, Gould, '70, p. 375.

Very common, dredged in many places about the Bay, usually hard bottom. Fine large specimens of this and the following species were taken by baiting a net with refuse fish and sinking over night at station 15.

Sipho stimpsoni Mörch.

Fusus islindicus, Gould (not Linné), '70, p. 371.

Very common on hard bottom near shore, very rarely dredged fully grown as it lives on such rough bottom.

Sipho pygmaeus (Stimpson).

Fusus pygmaeus, Gould, '70, p. 372.

Very common, dredged almost everywhere on hard bottom.

Nassa (Tritia) trivittata Say.

Nassa trivittata, Gould, '70, p. 364.

Very abundant; found everywhere on soft bottom. Does not grow to such large size as farther south.

Columbella (Astyris) rosacea (Gould).

Columbella rosacea, Gould, '70, p. 357.

Not rare, dredged at stations 6, 8, and 10.

Trophon clathratus (Linné).

Not rare, dredged at stations 10 and 11. Our specimens agree perfectly with the drawing given by Sars ('78) as *Trophon truncatus* Strom.

Purpura lapillus (Linné).

Most abundant on the outer rocks everywhere. A most variable species; series from different islands show great variations in size, color, and proportion. The sharply ridged form, *P. imbricata* of Lamarek, is found in the tide pools on Shag Point at Ironbound Island; and at Yellow Island a bright yellow form predominates over the duller colored individuals. The yellowish and reddish rocks give the name to the island. In sheltered places it grows to large size. We have found specimens $1\frac{3}{4}$ inches long.

Scala groenlandica (Perry).

Scalaria groenlandica, Gould, '70, p. 314.

Rather common at stations 4, 8, 10, and 17. Portions of the live animal on removal from the shell are of a most beautiful purple color. The shells here are pure white and the operculum black.

Turbonilla sp.

Only one dead and very worn specimen found which suggests "*Turbonilla nivea*" Stimpson, dredged at station 24.

Menestho albula Möller.

Rather common, dredged at stations 17, 19, and 22.

Odostomia modesta (Stimpson).

Rare, a few dredged at station 6.

Odostomia producta (Adams).

Only one dead and worn specimen dredged at station 6.

Trichotropis borealis Sowerby.

Common at stations 10, 11, and 17.

Mesalia acicula (Stimpson).

Turritella acicula, Gould, '70, p. 319.

Not rare though of small size. Dredged at stations 5 and 12.

Mesalia erosa (Couthouy).

Turritella erosa, Gould, '70, p. 317.

Rare, only one dead and eroded specimen, dredged at station 21, but fine large live specimens dredged in 15 fathoms, mud, 500 yards south of Egg Rock light.

Littorina littorea (Linné).

Littorina littorea, Gould, '70, p. 308.

Very abundant on rocky shores between tides, growing very large in favorable localities. Specimens found 1½ inches long.

Littorina rudis (Donovan).

Littorina tenebrosa, Gould, '70, p. 306.

Very abundant with the preceding; shows considerable variation in coloring.

Littorina palliata (Say).

Very abundant with the preceding.

Lacuna vincta (Montagu).

Found abundantly on Laminaria.

Jeffreysia eburnea (Stimpson).

Rissoella ? eburnea, Gould, '70, p. 297.

Not rare, dredged at station 6.

Cingula minuta (Totten).

Rissoa minuta, Gould, '70, p. 298.

A few dredged in Calf Island Bay in shallow water, muddy bottom, also station 12.

Cingula aculeus Gould.

Rissoa aculeus, Gould, '70, p. 299.

Very common in tide pools, under stones.

Cingula castanea (Möller).

Rissoa castanea Möller, '42-'43, p. 82.

Cingula castanea Sars, '78, p. 174, pl. 10, figs. 1a, 1b.

Not rare, dredged at stations 1, 2, and 6.

Cingula carinata Mighels and Adams.

Very abundant in 15 fathoms at station 6, in sandy mud. This is the only place where we have dredged this species.

Cingula arenaria Mighels and Adams.

Rissoa mighelsii, Gould, '70, p. 301.

Rissoa exarata, Gould, '70, p. 301.

Common at station 6.

Cingula areolata (Stimpson).

Turritella areolata Stimpson, '51, p. 35.

Cingula areolata Verrill, '82, p. 524.

Not common, found with the preceding.

Cingula multilineata (Stimpson).

Rissoa multilineata, Gould, '70, p. 300.

Only one dead specimen, dredged at station 5.

Aporrhais occidentalis (Beck).

Rare, dead specimens and fragments dredged at stations 4 and 10. Dredged alive in sandy mud, May, 1904, between stations 4 and 6, 15 fathoms. No specimens fully matured, all being without lip. The animals seemed very hardy, as they were kept alive for study for three weeks. One live specimen, full grown, dredged 500 yards south of Egg Rock light, in August, 1904.

Skenea planorbis (Fabricius).

Very common in tide pools.

Crucibulum striatum (Say).

Not rare, dredged at stations 3, 4, and 6, attached to stones.

Natica clausa Broderip and Sowerby.

Rather rare, dredged at stations 17 and 22.

Lunatia heros (Say).

Common in shallow water, muddy bottom, in the upper part of Bay, as off Soward's Island, and Shelldrake Island in Flander's Bay. Called "hoss winkles" by the natives!

Lunatia heros var. **triseriata** (Say).

Lunatia triseriata, Gould, '70, p. 340.

Very common; in deeper water than the preceding. Dredged about everywhere in the Bay.

Lunatia groenlandica (Möller).

Rare, a few specimens dredged at station 10.

Lunatia immaculata (Totten).

Mamma ? immaculata, Gould, '70, p. 344.

Very common, dredged at stations 10, 11, 17, and 22.

Velutina laevigata (Linné).

Velutina haliotoidea, Gould, '70, p. 334.

Very common, dredged at stations 4, 10, 11, and 17.

Velutina zonata Gould.

Only one dead specimen dredged at station 17. Five fresh specimens found in haddock.

Marsenina glabra (Couthouy).

Lamellaria perspicua, Gould, '70, p. 337.

Only one dead specimen dredged at station 22.

Acmaea testudinalis (Müller).

Tectura testudinalis, Gould, '70, p. 267.

Very abundant on rocks between tides everywhere. Grows to over 1½ inches long in favorable localities.

Acmaea alveus (Conrad).

Tectura alveus, Gould, '70, p. 269.

Acmaea testudinalis var. *alveus*, Pilsbry, '91, p. 11.

A few found under beach stones; reported common on eel grass.

Lepeta caeca (Müller).

Common at stations 17 and 22 only. Live specimens attached to stones and dead shells.

Calliostoma occidentale (Mighels and Adams).

Trochus occidentale, Gould, '70, p. 286.

Only one broken specimen taken from haddock.

Solariella obscura (Couthouy).

Margarita obscura, Gould, '70, p. 283.

Machaeroplax obscura, Verrill, '82, p. 531.

Rather common, dredged on hard bottom at stations 4, 6, 10, and 23. A few specimens of a two-keeled form have also been dredged with the typical specimens.

Margarita helicina (Phippe).

Turbo helicina Phippe, Voyage toward the north pole, 1774, p. 198.

Not rare, found in tide pools and under beach stones at low tide mark. Also dredged on Laminaria at station 16. The *Margarita campanulata* Morse, first described in Packard's Invertebrate fauna of Labrador ('67) is now held by Morse, himself, to be the male of the *M. helicina*. There is considerable difference between sexes in the shape, and 75 percent of the specimens found are males.

Margarita groenlandica (Gmelin).

Margarita undulata, Gould, '70, p. 280.

Rather common, in company with the *M. obscura*.

Margarita cinerea (Couthouy).

Rather common with the preceding at stations 4, 6, 17, and 20. A few found in haddock.

Margarita argentata Gould.

Rare, a few dredged at station 17. Most of the specimens taken from haddock.

Molleria costulata (Möller).

Adeorbis costulata, Gould, '70, p. 278.

Common at station 17. Also dredged dead at stations 22 and 24 among broken shells.

Puncturella noachina (Linné).

Cemoria noachina, Gould, '70, p. 276.

Very common; at stations 17 and 22 attached to stones and dead shells. A few specimens dredged with the others resemble the much elevated form described by Mighels as *Cemoria princeps*.

POLYPLACOPHORA.

Hanleyia mendicaria (Mighels and Adams).

Chiton mendicarius, Gould, '70, p. 263.

Rare. This is a deep water species, though Professor Verrill ('74) in Explorations of Casco Bay, 1873, records specimens dredged in 30 fathoms. Only one specimen dredged at station 17, in 25 to 30 fathoms.

Trachydermon ruber (Linné).

Chiton ruber, Gould, '70, p. 260.

Very common; in tide pools and dredged on hard bottom to 50 fathoms. One abnormal specimen of this species having only six valves was found in 1902 in a tide pool at Shag Point, Ironbound Island. This is of very rare occurrence. The only other six-valved specimen I can find recorded was from California and is mentioned in vol. 15, no. 5, p. 53, of the "Nautilus."

Trachydermon albus (Linné).

Chiton albus, Gould, '70, p. 263.

Common, dredged at stations 4 and 6, hard bottom. Also found in haddock.

Tonicella marmorea (Fabricius).

Chiton marmoreus, Gould, '70, p. 261.

Common in tide pools and dredged at stations 10 and 11. Not found over half an inch long.

Amicula vestita (Broderip and Sowerby).

Amicula emersonii, Gould, '70, p. 264.

Amicula vestita, Pilsbry, '93, p. 43.

Only one specimen, taken from a haddock.

LITERATURE.

Conrad, T. A.

- '43. Descriptions of nineteen species of Tertiary fossils of Virginia and North Carolina. *Proc. acad. nat. sci. Philadelphia*, vol. 1, p. 323-329.

Dall, W. H.

- '89. A preliminary catalogue of the shell-bearing marine mollusks and brachiopods of the southeastern coast of the United States. *Bull. 37, U. S. nat. mus.*, (reprint 1903), 221 pp., 74 pls.

- '94. Synopsis of the Mactridae of North America. *Nautilus*, vol. 8, p. 25-28.

- '98. Contributions to the Tertiary fauna of Florida, etc. *Trans. Wagner free inst. sci.*, vol. 3, pt. 1-5, p. 1-1218, pl. 1-47.

- '99. Synopsis of the recent and Tertiary Leptonacea of North America and the West Indies. *Proc. U. S. nat. mus.*, vol. 21, p. 873-897, pl. 87-88.

- '99a. Synopsis of the Solenidae of North America and the Antilles. *Proc. U. S. nat. mus.*, vol. 22, p. 107-112.

- :00. Synopsis of the family Tellinidae and of the North American species. *Proc. U. S. nat. mus.*, vol. 23, p. 285-326, pl. 2-4.

- :00a. Synopsis of the family Cardiidae and of the North American species. *Proc. U. S. nat. mus.*, vol. 23, p. 381-392.

- :01. Synopsis of the Lucinacea and of the American species. *Proc. U. S. nat. mus.*, vol. 23, p. 779-833, pl. 39-42.

- :02. Illustrations and descriptions of new, unfigured, or imperfectly known shells, chiefly American, in the U. S. national museum. *Proc. U. S. nat. mus.*, vol. 24, p. 499-566, pl. 27-40.

- :02a. Synopsis of the family Veneridae and of the North American recent species. *Proc. U. S. nat. mus.*, vol. 26, p. 335-412, pl. 12-16.

- :03. Synopsis of the family Astartidae, with a review of the American species. *Proc. U. S. nat. mus.*, vol. 26, p. 933-951, pl. 62-63.

Gould, A. A.

- '70. Report on the Invertebrata of Massachusetts. Boston, 2d ed.: 524 pp., 12 pls., illus.

Möller, H. P. C.

- '42-'43. Index Molluscorum Groenlandiae. *Kroyer's Naturhist. tidsskr.*, vol. 4, p. 76-97.

Morse, E. S.

- '69. Appendix to report on Mollusca. First ann. rep. Peabody acad. sci., p. 76-77, figs.

Packard, A. S.

- '67. Observations on the glacial phenomena of Labrador and Maine, with a view of the recent invertebrate fauna of Labrador. *Mem. Boston soc. nat. hist.*, vol. 1, p. 210-303, pl. 7-8.

Pilsbry, H. A.

- '91. Manual of conchology, vol. 13, 195 pp., 74 pls.
- '93. Manual of conchology, vol. 15, 436 pp., 61 pls.
- '97. Manual of conchology, vol. 17, xxxii + 348 pp., 4 pls.

Sars, G. O.

- '78. Bidrag til kundskaben om Norges arktiske fauna. 1. Mollusca regionis arcticae Norvegiae. Universitetsprogram f. foerste halvaar, Christiania, 1878, xvi + 466 pp., 52 pls., map.

Stimpson, Wm.

- '51. Shells of New England. A revision of the synonymy of the testaceous mollusks of New England, etc. Boston: 56 pp., illus.

Verrill, A. E.

- '73. Report upon the invertebrate animals of Vineyard Sound, and the adjacent waters, with an account of the physical characters of the region. Rept. U. S. comm. of fish and fisheries for 1871-1872. p. 295-778, pl. 1-38.
- '74. Explorations of Casco Bay by the U. S. fish commission, in 1873. Proc. Amer. assn. adv. sci., Portland meeting, 1873. p. 340-395, pl. 1-6.
- '81. Notice of recent additions to the marine Invertebrata of the north-eastern coast of America, etc. Proc. U. S. nat. mus. for 1880, vol. 3, p. 356-405.
- '82. Catalogue of marine Mollusca added to the fauna of the New England region during the past ten years. Trans. Conn. acad. arts and sci., vol. 5, p. 447-587, pl. 42-58.
- '84. Second catalogue of Mollusca recently added to the fauna of the New England coast and the adjacent parts of the Atlantic, consisting mostly of deep sea species, with notes on others previously recorded. Trans. Conn. acad. arts and sci., vol. 6, p. 139-294, pl. 28-32.
- '97. A study of the family Pectinidae, with a revision of the genera and subgenera. Trans. Conn. acad. arts and sci., vol. 10, p. 41-96, pl. 16-21.

Verrill, A. E., and Bush, K. J.

- '98. Revision of the deep water Mollusca of the Atlantic coast of North America, with descriptions of new genera and species. Proc. U. S. nat. mus., vol. 20, p. 775-901, pl. 71-97.

Printed November, 1904.

BLANEY.—Mollusca of Frenchman's Bay.

EXPLANATION OF PLATE.

The depth of water and character of bottom of the twenty-four stations shown on the map are as follows.

(Note.—These represent exactly 100 hauls of the dredge.)

- Station 1. { Between these two stations the depth was from 10 to 12 fathoms —
" 2. { soft, with gravel.
" 3. 10 to 12 fathoms — hard. This is the dumping ground for Bar Harbor refuse.
" 4. 10 fathoms — hard.
" 5. 5 " — rocky in channel, becoming fine black sand nearer shore.
" 6. 6 to 8 fathoms — hard.
" 7. 16 fathoms — soft, with occasional rocks.
" 8. 15 " — hard.
" 9. 28 " — very soft sticky mud.
" 10. 35 " — hard, though with occasional patches of mud and gravel.
" 11. 40 to 50 fathoms — hard, with worn lumps of hard green clay.
" 12. 10 fathoms — soft, with gravel.
" 13. 4 to 6 fathoms — soft.
" 14. 5 fathoms — all broken shells.
" 15. 10 " — hard, rocky.
" 16. 5 to 10 fathoms — hard.
" 17. 25 to 30 " — " (Brachiopods at this station.)
" 18. 10 to 15 " — hard and rocky.
" 19. 20 fathoms — hard.
" 20. 15 to 20 fathoms — hard and rocky.
" 21. 7 fathoms — hard, with patches of broken shells.
" 22. 25 " — " (Brachiopods at this station.)
" 23. 15 to 20 fathoms — hard.
" 24. 20 fathoms — mud and broken shells.

