

C.S.
Report on the Marine Invertebrata of Mount Desert, ME.
1880. Charles W. Townsend

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Description: Champlain Society report on the marine Invertebrata of Mount Desert

C.S. June 1881
To Mr. C. Eliot, president of the
Champlain Society.

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Month of August 1880.

Charles H. Foronfield

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As investigated by me during the

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My plan of operations was as follows: First: to study the forms of nivertehale life found between high & low water mark, or the tide fauna. Second: those forms which live on the surface of the water, or the pelagie fauna. Third: those prus living in shallow water below low water mark, my Jelan was to keep all Specimens that could be preserved by duying and the make drawings of some of the im for tant ones, and also to make draw

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I all those that could not be preserved by drying. In this way I hoped to obtain a good knowledge of the forms, and also to he able to identify them afterwards. Iny work was almost sutilly macroscopie, as the microscope I had was of very low former. First as regards the tide fauna: this Istudied chiefly at Some's found near the Camp. Here the shore is rocky in Sound. In the following account I will take up the groups in natural order, beginning with the lowest. Among the Collenterates in the class Hydrogoa, I found how Species very Common, viz: Sertularia pumila and Obelia Commisuralis

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Lertulania pumila and Obelia commisuralis.

Both of these resemble seaweeds, and are found attached usually to the Common rock-weed (Ficus vessiculosus). These and allied species, together with Briagours, are pequently fressed and preserved as sea wirds by collectors. The Hydrogon produce fee Swimming mediese, or jelly Jishes, which are very minute, and these are probably some of the chief from which occassion the "phosphorescence" in the water at night, which I will Speak of later. The Echinoderus Common along the so I will defe them till later mark The Sub-Kingdom Vennes is very will represented in the tide gone, but

Both of these resemble seaweeds, and are found attached usually to the common rock-weed (Fucus vessiculosus). Thes and allied species, together with the Briazoans, are frequently pressed and preserved as seaweeds by collectors. The Hydrozoa produce free swimming medusae, or jelly fishes, which are very minute, and these are probably some of the chief forms which occasion the 'phosphorescence' in the water at night, which I will speak of later.

The Echinoderms common along the so I will defer them till later shore-occur ^ chiefly below low water mark.

The sub-Kingdom Venues is very well represented in the tide zone, but

twing to the difficulty of steedying them, & To the few writings on the subject, I ac-Complished but little in this group. The most common from of worm in the class annulata is the class worm, hereis virens, living in the Sandy mud In Some places they are very mumerous, and here a great many of the clams are the To salled "mind clams" i.E. Clams which have been Eaten by this comm, & the The clam born is from six & ten in clas long, and with Each of the body segments provided with short approages. In Certain lights it looks greenish, hence its specific grame of virens. Its

owing to the difficulty of studying them, + to the few writings on the subject, I accomplished but little in this group. The most common form of worm in the class annulata is the clam worm, Nereis virens, living in the sandy mud In some places they are very numerous, and here a great many of the clams are the so called 'mud clams,' i.e. clams which have been eaten by this worm, + the space between the valves filled with mud. The clam worm is from six to ten inches long, and with each of the body segments provided with short appendages. In certain lights it looks greenish, hence its specific name of virens. Its

pharynx is provided with two stout black. Welth and can be wested by the worm So as to siege its frey. The some lives chiefly in the and but can be fruid in numbers under stones shortly after the tide goes out. On lefting the stone the womens glide into their burrows. They are Imstuis frund at night swimming on the Surface of the Exter. another annelid worm abundant at + below low water mark is Cisterides granulatus, which lives in they pretty hom-shaped tubes made by gling to getter grains of sand by a substance Snoty, are found way where in the

pharynx is provided with two stout black teeth, and can be erected by the worm so as to seize its prey. The worm lives chiefly in the mud, but can ^often be found in numbers under stones shortly after the tide goes out. On lifting the stone the worms glide into their burrows. They are sometimes found at night swimming on the surface of the water.

Another Annelid worm abundant at + below low-water mark is Asterides granulatus, which lives in any very pretty horn-shaped tubes made by gluing together grains of sand by a substance secreted by them. These tubes, mostly empty, are found everywhere in the

prols left by the tide near Invester line, There are numerous other annelid unn, besides on any planarian & nematite James which life in this zone + can be found under Every Itome. If the mollusca I found many Species, of which I will only on sution a few. The most about dant and most useful In suba of this sub-Ringdom found there, in the class of Lamellehanchs is is the common Clam mia arenaria, It inhabits almost Suticly the lide gone, Estending but a little way below low water mark. They are as cule rather Small and with thick dark shell

pools left by the tide near low-water lines.

There are numerous other annelid worms besides many planarian + nematode worms, which live in this zone + can be found under every stone.

Of the Mollusca I found many species, of which I will only mention a few. The most abundant and most useful member of this sub-Kingdom found there, in the class of Lamellibranchs, is is the common clam, Mia arenaria. It inhabits almost entirely the tide zone, extending but a little way below low water mark. They are as rule rather small and with thick dark shells

owing to the coarse gravelly med in which they live. another law Ellihanch perhaps Equally common with the fregoing, is the Common blue mussel. Inetilus Edulis. In Europe the Same species is used as an article of food, but is larely if Ever Used as such here. among the Gasteropods there are many familiar forms, commonly called cockles and whelks, Purpura lapillus, Buc-Cincim undation Etc. These are very fond of priching themselves on a nues sel or clam and bring a bound Clean cut hole, through one of their valva and then sucking out the animal within

owing to the coarse gravelly mud in which they live.

Another lamellibranch, perhaps equally common with the foregoing, is the common blue mussel, Mytilus edulis. In Europe the same species is used as an article of food, but it is rarely if ever used as such here.

Among the Gastropods there are many familiar forms, commonly called cockles and whelks, Purpura lapillus, Buccineum undatum etc. These are very fond of perching themselves on a mussel or clam and boring a round clean cut hole, through one of their valves, and then sucking out the animal within.

This bring is done by the teeth of the lingual ribbon. The common of should suppose, Cockle owes, the gentle name, Purpusa, I the fact that it possesses a purple pigment in its body, with which Every one is familiar volo has used this animal for bait, as it diges the firgus a very framansut purple. Prehips it belongs to the same family as the Shell fish used by the Typicas to Batract the famous Typian Juple. among the arthropods, the Common form is the little shrimp like animal that Squirms away on one side so awkwardly + in such rumbers, when a mass of sea weed is lifted up, and

This boring is done by the teeth of the lingual ribbon. The common Cockle owes, its genetic name, Purpura, to the fact that it possesses a purple pigment in its body, with which every one is familiar who has used this animal for bait, as it dyes the finreddish gers a very permanent purple. Perhaps it belongs to the same family as the shellfish used by the Tyrians to extract the famous Tyrian purple.

Among the arthropods, the common form is the little shrimp like animal that squirms away on one side so awkwardly + in such numbers, when a mass of seaweed is lifted up, and

which darts so quickly through the genter. This the amphipre Gammanis matus. I now come to the Second farmer - the Surface or belagic frama. This and but little investigated by me, as I had no towing nets. The only species I found the the common red jelly- fish Cyansa arctica, & a little hownish red lives under the shelter of its disc. Ins facticularly struck by the Rarity of Jelly fishes, which are So Common in hassachusetts buy in Rugust. One day when becalmed near the

which darts so quickly through the water. This the amphipod Gammarus ornatus.

I now come to the second fauna —the surface or pelagic fauna. This was but little investigated by me, as I had no towing nets. The only species I found were the common red jellyfish Cyanea arctica, + a little brownish red crustacean, a species of Hyperia, that lives under the shelter of its the disc of the jellyfish. I was particularly struck by the rarity of jelly fishes, which are so common in Massachusetts bay in August. One day when becalmed near the

mouth of Somes found, the water sermed Covered with small transparent bodies looking like crustacea, but lifeless. I Ins puzzled & discover what they werent the time, but have since satisfied myself that they were the cast skins of the soft parts of the Common lock barnacle, Bulanes balance I might speak here of the to called phosphorescence, which is familian to Every one who has been on the water after dark. Every stroke of the our Causes an intense glow of light in the dark water, & the drops which full from the our look likegold, while behind the boat is left a path of fine This light is Caused by the presence of immunorable forms

mouth of Somes Sound, the water seemed covered with small transparent bodies looking like crustacea, but lifeless. I was puzzled to discover what they were at the time, but have since satisfied myself that they were the cast skins of soft parts of the common rock barnacle, Balanus balanoides.

I might speak here of the so called 'phosphorescence,' which is familiar to every one who has been out on the water after dark. Every stroke of the oar causes an intense glow of light in the dark water, and the drops which fall from the oar look like gold, while behind the boat is left a path of fire. This light is caused by the presence of innumerable forms

I life, mostly minute, protogon, medusac ste. The actual cause of the light is unknown, but it is not die to phosphorus, but is found to be connected in some way with Druseula action. In rainy nights it is feeble the animals avoiding the peste Surface Water Lastly the shallow water found I moestigated by means of a small diedge. Among the actinozoa, thered Era ausurus, Instridium marginating is very about dant, living in great clusters on the locks & stones below low water mark. The Echinoderus are very well represented, in Some Some Some I. I diedged up two

of life, mostly minute, protozoa, medusae etc. The actual cause of the light is unknown, but it is not due to phosphorus, but is found to be connected in some way with muscular action. On rainy nights it is feeble the animals avoiding the fresh surface water.

Lastly the shallow water fauna I investigated by means of a small dredge.

Among the Actinozoa, the red sea anemone, Metridium marginatum, is very abundant, living in great clusters on the rocks and stones below low water mark.

The Echinoderms are very well represented in Somes Sound. I dredged up two

Rieds of Ophimans or hate stars. The Two Species of Statuoid, astracauthin foreglines and a fullidus abounded, Especially at a point on the west side of the Sound where there was a very strong current to punish food vain In the group of Edinoids the Common DEa. urchin, Strongylocantrotus Diolachiansis, in Some places literally covered the bottom, So that they became a great misance in the dging. At one hand her. Dairs? and I counted 205 of them in the heady Oucumber, Prutacta frondsa, is found & very abundantly in spots below low water

kinds of Ophiurans or brittle stars. The two species of Asteroid, Astracanthian berylinus and A. pullidus abounded, some of them growing to a large size, especially at a point on the west side of the Sound where there was a very strong current to furnish food and air. In the group of Echinoids the common seaurchin, Strongylocentrotus dröbachiensis, in some places literally covered the bottom, so that they became a great nuisance in dredging. At one haul Mr. Davis and I counted 205 of them in the dredge. In the class of Holothurians, the seacucumber, Pentactafrondosa, is found very abundantly in spots below low water

mark, and very seldom are they improudent Snough & allow themselves to be left high and dry by the tide. They are very intersting animals to study. The adults from their habit of creeping always on me Si de have the lows of ambulacial Suckey on the upper side for The most part aborter and useless, While the love lows remain developed. But I found two quite young cucumber, which ristead of being Ja hown color were prikish white, and Which had all five ambulacial rows nearly Equally will developed. In a still springer Specimen, about quarter of an inch long, only the large ral tentacles were present, the others

mark, and very seldom are they imprudent enough to allow themselves to be left high and dry by the tide. They are very interesting animals to study. The adults, from their habit of creeping always on one side, have the rows of ambulacral suckers on the upper side for the most part aborted and useless, while the lower rows remain developed. But I found two quite young cucumbers, which instead of being of a brown color, were pinkish white, and which had all five ambulacral rows nearly equally well developed. In a still younger specimen, about quarter of an inch long, only the large oral tentacles were present, the others

forming afterwards. Our sea cucum-ber is a near relative of the Repong of Clima, will known as an article of good , & I have heard that our species, when will cooked, is lather good Eating. In the Sub Ringdom Mollusca Suil An every mention the limbet, Botina testulin-alis which sticks so tightly to the works usually below tide mark which grows there to a very large size, and the Sobtained tur species.
In the Sub-Kingdom arthropoda y class Crustacea, besides the Common Shrimp, rangon vulgaris and the surprising

forming afterwards. Our sea cucumber is a near relative of the Trepang of China, well known as an article of food + I have heard that our species, when well cooked, is rather good eating.

In the sub-Kingdom Mollusca I will merely mention the limpet, Tectura testudinalis, which sticks so tightly to the rocks usually below low tide mark, which grows one measuring 1 ½ x 1 3/16 inches. there to a very large size ^, And the pretty little nudibranch mollusks, of which I obtained two species.

In the sub-Kingdom Arthropoda + class

In the sub-Kingdom Arthropoda + class Crustacea, besides the common shrimp, Crangon vulgaris, and the isopod,

Idolia provata, the later of which I frund very abundant in the Est grass at Lullion a minute form a Species of Caprella was Bly Commonly found on Sea weed. This Capiella moves from place to place in a singular manner, like an inch wome. The lobster Homanis americanus abounded in Somes Sound, as many as nine being taken in one hand in In de Windt's lobster- prt. The hermit craby Eupaginus, so interesting & writch, live in numbers just below low tide mark I diedged up me nimber of the Class arach. nida, viz: Phonehilidum maxillare, he Szamite or Spider.

Idotea inorata, the later of which I found very abundant in the eel grass at Sullivan. A minute form, a species of Caprella, was very commonly found on seaweed. This Caprella moves from place to place in a singular manner, like an inch worm. The lobster, Homarus americanus, abounded in Somes Sound, as many as nine being taken in one haul in Mr. de Windt's lobster-pot. The hermit crabs, Eupagurus, so interesting to watch, live in numbers just below low tide mark. I dredged up one member of the class Arachnida, viz: Phonichilidium maxillare,

the sea mite or spider.

Partial list of Spreies of marine 15 moutehata observed at Int. Dreat Les Hydrozoa

Olas Hydrozoa

Olas Hydrozoa

Olas Aydrozoa

Sertularia pumila ahm on Pacus

Obelia Commisuralis ""

Dubularia. One diedzel in 304 Fath

Clava leptostyla. Common on Facus.

Ode 2 Discophora Cyanea actica. Ethe Common Class actinozoa Ada Zoantharia Instrudium marginatum abuntant Sub. Ringdom Echinoderne ata. 1 Ophimordea Ophimordea Ophimordea 2 astavidea 2 Astavordea
Astavordea

Astavordea

A. pallidus. Stongsforcentrotus Diobachinsia abunta

4 Holothenridea

Frintaeta francosa abundant

Partial list of species of Marine Invertebrata observed at Mt. Desert.

Sub. Kingdom. Coelenterata

Class Hydrozoa Order Hydroidea

Sertularia pumula abun. on Fucus

Obelia commisuralis

Tubularia one dredged in 3 or 4 Fath

Clava leptostyla common on Fucus

Order 2 Discophora

Cyanea arctica rather common

Class Actinozoa

order Loantheria

Metridurium marginatium abundant

? ?

Sub Kingdom Echinodermata.

1. Opluroidea

Ophiophilis (bellis)? rather common

??

2 Asteroidea

Asteracanthion berylinus abundant.

A. pallidus.

3 Echinoidea

Strongylocentrotus Drobachiensis abundant

4 Holothuridea

Pentaeta frondosa abundant

cen annulata Cisterides granulatus. Comma 1 ? 2 ? ? ? ? ? Sub King. Inollus ca Class Lamellihanchiata. mia arenaria. alum. : astarte Sulcata. one in 4 fatt. Saxicava rugora Common mytilus Idulis alum. Buccinem undalin. abun. Protientestudinales, alem. Pusus de comeratatus. one in Prassa trivittata. Comma Indianshell herps margareta obscura, abun Lunatia heros. common. Lacuna vineta far atbul. Litorina litora, lathu " Dendronotus estrasseus com Purpua lepillus "Dois hlamellata" one prud. Sub King arthropoda. Amarus americanus. Common.
Idotea irrorata; "Especiat Silliam Caprella Common.
Nyperia "unda dise of Cyanea.
Ikumarus ornatus abundant. Caugn bulgaris Enkaguns Ballanges balanvides "
Class arachida Phorichili dium maxilare. one Spec-

Class Annulata

Cistenides granulatus. Common

Nereis virens

Sub King. Mollusca

Class Lamellibranchiata.

Mia arenaria. Abun. Astarte sulcate. One in 4 fath Sanicava rugose common Mytilus edulis Abun.

Class Gasteropoda

Buccinum undatum. Abun Fusus decruscostatus. One in

Indian shell heap

Lunatia heros. Common. Litorina litorea, rather " L. palliate, abun.

Purpura lapillus "

Tectura testudinalis, abun Nassa trivittata. Common Margarita obscuar. Abun

at Sullivan.

Lacuna vincta? few at Sul. Dendronotus arborescens, com Doris bilamellata 9?) one found

Sub King. <u>Arthropoda.</u> Class crustacean

Homanus americanus. Common

Idotea inorata, 11 espec at Sullivan

Caprella Common.

Hyperia " under disc of Cyanea.

Gammarus ornatus abundant.

Crangon vulgaris
Eupagurus
Ballanus balanoides
""

Class Arachinida

Phonichilidium maxilare. One spec-Dredged in 3 or 4 faths.

Anno Domini 1881

Carolina Condothevondo.

Carbonaqua Cristosa..

Carathes Cosboneridos.

Crandisteris Conderes

Cravo Crivocatosus

Rondobora Francolosa.

Rondifera Brinchinza.