NOTES ON THE NATURAL HISTORY OF FORT MACON, N. C., AND VICINITY. (No. 5.)

BY DRS. ELLIOTT COUES AND H. C. YARROW.

The present paper continues a series of articles which have appeared in these Proceedings, as follows:—

No. 1. By Dr. Coues, Vertebrates (except Fishes). 1871, pp. 12–49.

No. 2. By Dr. Coues, Invertebrates. 1871, pp. 120–148.

No. 3. By Dr. Yarrow, Fishes. 1877, pp. 203–218.

No. 4. By Drs. Coues and Yarrow, supplementary to No. 1, Vertebrates. 1878, pp. 21–28.

No. 5, herewith presented, may similarly be considered as supplementary to No. 2, Invertebrates, as it gives species either identified after No. 2 had been printed, or added by Dr. Yarrow after Dr. Coues had left Fort Macon.

Numerous specimens, notably sponges and ascidians, still remain undetermined, but there seems to be no immediate prospect of identifying them.

Our best thanks are due to Prof. A. E. Verrill, who has been kind enough to revise the present paper, making many additions. We are also indebted for the identification of various specimens to Prof. A. Agassiz, Prof. A. Hyatt, Mr. G. W. Tryon, Jr., and Prof. S. I. Smith.

The classification and nomenclature of this paper are substantially according to Verrill's "Report on the Invertebrates," etc., in the Ann. Rep. U. S. Comm. of Fish and Fisheries, 1873, pp. 293 *et seq.*

The Appendix, with which we are favored by Mr. J. S. Kingsley, will be found a valuable article, complete in itself, on the Decapod Crustacea of the Atlantic Coast, with special reference to those of Fort Macon.

CRUSTACEA.

BRACHYURA.

Heterocrypta granulata, Stimpson.

Was occasionally found in the small mesh gill-nets fished on outside or sea-beach.

MACROURA.

Eupagurus longicarpus, Stimp. (= *E. longipes*, in Dr. Coues's List, p. 124.)

Very abundant.

Alpheus heterochælis, Say.

Collected by Dr. Yarrow.

Alpheus minus, Say.

Not uncommon. Found in the cavities of sponges, etc.

Tozeuma carolinensis, Kingsley.

Obtained by Dr. Yarrow and Dr. A. S. Packard.

Crangon vulgaris, Fabricius.

Very numerous on outside beach, and individuals of large size were frequently found in pools left by the receding tide. Smaller ones abundant in the marshy creeks of the sounds.

Palæmonetes vulgaris, Stimpson.

Is abundant on the outer beach; found with preceding species.

NOTE.—In Dr. Stimpson's list of the Decapod Crustacea of Beaufort, N. C. (Amer. Journ. Sciences, Ser. II., vol. xxix. p. 444, 1860), the following species are enumerated, which are not included in this nor in Dr. Coues's previous list: *Pelia mutica*, *Leptopodia calcarata*, *Pinnotheres maculatus*, *Pinnixa cylindrica*, *P. Sayana*, *P. chætopterana*, *Lithadia cariosa*, *Calappa marmorata*, *Porcellana ocellata*, *P. sociata*, *Euceramus prælongus*, *Lepidops scutellata*, *Eupagurus annulipes*, *Calianassa major*, *Alpheus intermedius*, *Virbius pleuracanthus*, *Peneus constrictus*.

SQUILLOIDEA.

Squilla empusa, Say.

Abundant on sea-beach after storms, but is frequently taken in drag-nets. Incautiously handled it can give quite a severe wound with the spines of the large claw. It is possessed of considerable muscular power, and uses its spined caudal extremity quite forcibly to escape. Largest specimen seen was 10 inches long.

AMPHIPODA.

Talorchestia longicornis, Smith.

A few seen on sea-beach after extremely high tides; are readily distinguishable by the extreme length of the antennæ.

Gammarus mucronatus, Say.

This species, having, according to Verrill, *loc. cit.*, "the poste-

rior margin of each of the anterior segments of the abdomen produced into a slender spiniform dorsal tooth," is very common near the mouths of fresh water streams emptying into the sounds. Is particularly numerous in eel-grass.

ISOPODA.

Sphæroma quadridentata, Say.

Called "Pill bug" by residents; and is common on the rocky artificial breakwaters of the sea-beach.

Idotea cæca, Say.

Common on sand flats.

Of the Siphonostoma two species have been observed, one a parasite of the drum fish (*Pogonias chromis*), filiform, with a stellate head, the other oval in shape, and attached to the sting-ray (*Trygon centrura*).

CIRRIPEDIA.

Balanus galeatus, Darwin.

Common on *Leptogorgia virgulata.*

Balanus eburneus, Gould.

Common.

Balanus balanoides, Stimpson.

Abundant on stakes and piles of wharves.

Lepas anatifera, Linné.

The only specimens secured were found attached to pieces of wreck and drift wood, which had probably floated from far to the southward. These were living when found.

ANNELIDA.

POLYCHÆTA.

Nereis limbata, Ehlers

Is tolerably common under rocks and stones at extreme low water-mark. Is considered excellent bait for small fishes.

Diopatra cuprea, Claparède.

This beautiful and characteristic species is tolerably abundant on the muddy sand flats. A number were taken on Bird Shoal opposite Fort Macon.

Arabella opalina, Verrill (= *Lumbriconereis opalina*, Verrill, in Report).

In sand at low water.

Rhynchobolus americanus, Verrill.

Collected on the flats by Dr. Yarrow.

Anthostoma robustum, Verrill.

Collected on the sand flats by Dr. Yarrow.

Sabellaria vulgaris, Verrill.

Common on shells, etc.

Cistenides Gouldii, Verrill.

A few specimens obtained by Dr. Yarrow.

Sabella microphthalma, Verrill.

Common on piles in the interstices of ascidians, etc.

Hydroides dianthus, Verrill (= *Serpula dianthus*, Verrill, in Report).

Common on dead shells.

But little attention was devoted to the smaller crustacea and annelids, and numerous other species undoubtedly occur.

SCOLECIDA.

PHARYNGOPNEUSTA.

Balanoglossus aurantiacus, Verrill.

The original *aurantiacus* of Girard was from South Carolina (Verrill).

This species is extremely common in the vicinity of Fort Macon, and its resorts may readily be discovered, owing to peculiar coils of sand which it expels from the orifice of the holes in which it lives. These holes are lined with a coating, apparently of mucus, excreted by the animal. Largest specimens seen were six inches long.

NEMERTINA.

Cerebratulus ingens, Verrill (= *Meckelia ingens*, Leidy).

This curious species is quite abundant in the shallow waters of the salt marshes; it is also found on the sea-beach. Its appearance is so peculiar when quiescent that the closest observation only could determine it a living organism. Some specimens seen at least eight feet in length.

MOLLUSCA.

CEPHALOPODA.

Dibranchiata.

Ommastrephes Bartramii, Lesueur.

Two or three specimens of this comparatively rare species were found in Bogue Sound, not far from Harkers Island, having been taken in nets.

Loligo brevis, Blainville (= *L. brevipinna*, in Dr. Coues's List.)

Mr. G. W. Tryon, Jr., of Philadelphia, has identified this species from Bogue Sound, Fort Macon. A few specimens only taken.

GASTROPODA.

Pectinibranchiata.

Acus concavus (Say, sp.).

One specimen was obtained by Dr. Yarrow.

Anachis similis, Verrill.

Common on sea-beach; a few dredged on Bird Shoal at high water.

Columbella mercatoria, Linn.

Is tolerably abundant on Bird Shoal, from which locality it was dredged.

Cerithiopsis terebralis, Adams.

This species is the one alluded to by Dr. Coues in Proc. Acad. Nat. Sci., 1871, p. 141, as *Cerithium*, sp. It is not abundant.

Eulima conoidea, Kurtz and Stimpson

Not observed by the authors, but is given upon the authority of Kurtz and Stimpson, Proc. Bost. Soc. Nat. Hist., vol. iv., p. 115, 1851.

Strombus alatus, Gmelin.

Tolerably common on the sea-beach near Fort Macon, numerous near Cape Lookout.

Mitra granulosa, Lamarck.

A single specimen was found on the beach near Cape Lookout. Is appparently uncommon.

Marginella guttata, Dillwyn.

Marginella roscida, Redfield.

Both species dredged on Bird Shoal. Uncommon.

Porcellana exanthema (*Cypræa exanthema*, Linn.).

A single specimen secured.

Scalaria turbinata, Conrad.

Less abundant than *S. lineata*.

Crepidula aculeata, Gmelin.

Collected by Dr. Yarrow.

Littorina dilatata, d'Orbigny.

A few dead shells dredged on Bird Shoal. Uncommon.

Volva uniplicata, Sowerby.

A few individuals of this species were found as parasites of *Leptogorgia virgulata*, near the wharves of Beaufort, N. C.

TECTIBRANCHIATA.

Utriculus canaliculatus, Stimpson.

Abundant on Bird Shoal, numbers having been dredged there.

PTEROPODA.

Thecosomata.

Styliola acicula, Lesueur.

We are informed by Prof. Verrill that he has discovered this species in the cells of some sponges sent to him from Fort Macon.

LAMELLIBRANCHIATA.

Dimyaria.

Teredo dilatata, Stimpson.

Tolerably common in floating drift wood near Fort Macon. Is hardly to be distinguished from *T. megotara*, Hanley, an allied form which is more northern. Prof. Verrill states, *loc. cit.*, "I have not met with this species south of Cape Cod."

Zirphæa crispata, Mörch

Uncommon. A few found near the rocky breakwaters on the sea-beach.

Donax idoneus, Conrad (fossil).

This species, described by Mr. T. A. Conrad, Proc. Acad. Nat. Sci., 1872, p. 216, was discovered by Dr. Yarrow in 1871, on the sea beach near Fort Macon, a single specimen only being secured. Mr. Conrad says "is probably from a miocene bed under the sea."

Glycimeris (Panopæa) bitruncata, Conrad.

A single valve only of this species was discovered by Dr. Yarrow, which Mr. Conrad deems recent, from the presence of the unaltered ligament and polish. Mr. G. W. Tryon, Jr., however, judges it to be from a submarine fossil deposit. It was found on the sea-beach six miles above Fort Macon.

Mya arenaria, Linn.

Common in the marshy creeks near Fort Macon.

Saxicava distorta, Say.

Among ascidians, etc.

Tottenia manhattensis, Verrill.

A few specimens found on the sea-beach. Prof. Verrill is not certain that this species is distinct from *T. gemma*, Perkins.

Chione grata (Say).

One fresh valve.

Lucina crenulata, Conrad.

Abundant in Dr. Yarrow's collection; but perhaps not recent.

Argina pexata, Gray.

Common in the muddy, sandy portion of Bird Shoal, where it was dredged.

Heteromyaria.

Modiolaria lateralis (Say).

Found in the interstices of ascidians from piles.

Modiola hamatus, Verrill

Common in marshy creeks.

Pinna muricata, Linn.

Abundant on sea-beach, less so, however, than *P. seminuda.*

Crassatella undulata, Emmons (fossil).

Very abundant in the post-pliocene deposits on the main land near Fort Macon.

TUNICATA.

Saccobranchia.

Molgula pellucida, Verrill.

A few specimens of this beautiful species were dredged on Bird Shoal by Dr. Yarrow. This species has been figured by Mr. Binney, who called it *M. producta*, Stimpson, which is quite a distinct sand-covered species, and not smooth like *M. pellucida.*

Cynthia partita, Stimpson.

Very common in the sounds in the vicinity of Fort Macon.

Amarœcium stellatum, Verrill.

Very abundant on rocks and stones near Beaufort, and on the piles of the wharf at Fort Macon. The species attains a large size, and the rapidity of its growth is surprising; new clean piles used to repair a wharf were, in less than four months, well covered with large clusters of this ascidian.

POLYZOA.

The following species have been identified by Professor Verrill. Many other species doubtless occur.

Crisia eburnea, Lamx.

Small colonies were found attached to *Aglaophenia.*

Amathia alternata, Lamx.

One fine specimen about two inches high was obtained.

Amathia, sp. undetermined.

Grows in branching tuffs three inches high, with the branches appearing as if twisted in a spiral, owing to the cells being arranged in a continuous spiral along one side of the branches. The spiral is more rapidly ascending than in *A. spiralis*, Lamx. (Verrill.)

Vesicularia armata, Verrill.

Creeping over the preceding species.

Ætea anguina, Lamx. (?)

Found creeping over ascidians (*Cynthia partita*), taken from the breakwater.

Bugula turrita, Verrill.

Attached to shells and hydroids.

Acamarchis neritina, Lamx.

Common, growing in large brownish clusters attached to gorgoniæ, ascidians, etc.

Membranipora lineata, Busk.

Two characteristic specimens were found on dead shells.

M. catenularia, Smitt.

One specimen of the unarmed variety on a dead shell.

? Cupularia umbellata (Manz.), Smitt.

One specimen. Too much worn for accurate identification.

Biflustra denticulata, Smitt, Florida Bryozoa, p. 18, pl. iv. figs. 89–91.

Common on shells.

Hippothoa hyalina, Smitt.

Common on algæ, etc.

H. biaperta, Smitt, Florida Bryozoa.

Several specimens on dead shells, one with the oœciæ.

H. variabilis, Verrill (*Escharella variabilis,* V., in Report).

Is tolerably common as calcareous incrustations on shells, etc. In thickened masses much resembles true coral.

Cellepora avicularis, Hincks.

One cylindrical colony attached to the stem of *Aglaophenia*, others on algæ, etc.

Lepralia Americana, Verrill.

On dead shells; not uncommon.

Discopora nitida, Verrill.

Common on dead shells.

RADIATA.

The following list contains all the species that have been identified up to this time:—

ECHINODERMATA.

Holothurioidea.

Thyone briareus, Selenka.

An extremely abundant and characteristic species, great numbers being found among masses of sea-weed on the beach near Fort Macon. Many hundreds have been noticed during a walk of less than a mile, particularly after an easterly storm. This species is noticeable and remarkable for a peculiar habit it possesses of ejecting the entire viscera if exposed long to the rays of the sun, or kept for a length of time in the collector's basket.

Pentamera pulcherrima, Ayres.

Lighter in color than the preceding species, and has the ambulatory suckers arranged in five bands. Numerous on sea-beach after storms.

Thyonella gemmata, Verrill.

Tolerably abundant.

A walk of a few miles up the sea-beach at Fort Macon, after an easterly blow, will reveal to the observer a number of pinkish translucent formless lumps of semi-cartilaginous appearance; these masses, varying in coloration from light pink to vivid red, are occasionally met with of a light blue or green tint. This undetermined organism is, perhaps, the one named above. Placed in a salt-water vivarium after a short time the tentacles begin to be extended, resembling clusters of the most beautiful algæ. The entire surface of the animal is covered at intervals with indented specks, darker than the surrounding tissue, these are probably analogous to the warts of *Synapta tenuis*, Ayers (*Leptosynapta Girardii*, Verrill).

?Leptosynapta Girardii, Verrill.

We find in our notes taken in June, 1871, this species as having been identified, with the following remarks: "This curious holothurian is particularly noticeable on account of its transparency. They are found at low-water in the sandy marshes abundantly." As Prof. Verrill considers it a northern form, we prefer to mark it as doubtful.

Echinoidea.

Arbacia punctulata, Gray (*Echinocidaris punctulatus*, in Coues's List).

Tolerably abundant on sea beach and inlet beach after storms. It has long stout purple spines, and the anal region is composed of four large plates.

Toxopneustes variegatus, A. Agassiz (*Lytechinus variegatus*,? in Coues's List).

Common.

Mellita pentapora, Lütken (*Melita quinquefora*, in Coues's List).

Very common on sandy bottoms.

Moira atropos,[1] A. Agassiz (*Schizaster lachesis*, in Coues's List).

Very common.

Asterioidea.

Asterias Forbesii (Desor.), Verrill (*A. arenicola*, in Coues's List).

Common.

[1] A. Agassiz has changed this genus to "*Moira*."—V.

Astropecten articulatus (Say), Lütken.

Common.

Luidia clathrata (Say), Lütken.

Not uncommon on sandy bottoms.

Ophiuroidea.

Ophiura olivacea, Lyman.

Very numerous on shoals in Beaufort Harbor.

Ophiophragmus Wurdemanii, Lyman. Verrill, Amer. Journ. Sci. and Arts, vol. ii. p. 133, 1871.

Common in sand at low water. Dr. Coues.

Ophiothrix angulata, Ayres.

"Common in the cavities of sponges." (Verrill.)

ACALEPHÆ.

Discophoræ.

Pelagia cyanella, Peron and Lesueur.

Occasionally found in the inlet creeks.

HYDROIDÆ.

Thecaphora.

Campanularia carolinensis, Verrill, sp. nov.

A small species, creeping over the stems of *Aglaophenia*, remarkable for the unusually large goblet-shaped hydrothecæ, which are supported on short and slender pedicles. Root-stalks slender, translucent, wrinkled, but not regularly annulated, giving off at short intervals the slender pedicles which are shorter than the cups, mostly having only four or five somewhat irregular and imperfect oblique annulations. Hydrothecæ deep cup-shaped or goblet-shaped, with a smooth, thin, slightly everted rim. These cups are nearly twice as deep as wide, and about twice as long as the pedicles. They taper toward the narrow base with a gradual curvature; the basal portion is considerably thickened internally, with a small septum very near the bottom. Gonothecæ unknown.

Height of hydrothecæ, 1 mm.; diameter, .60 mm.; length of pedicles, .45 mm.

Collected by Dr. Yarrow.

Owing to the absence of gonothecæ the reference of this species to *Campanularia* is only provisional. (A. E. V.)

Lafoea calcarata, A Agassiz.

Found creeping over *Sertularia cornicina.*

Sertularia (Desmoscyphus) Achilleæ, Verrill, sp. nov.

Stem alternately pinnate, articulated, each segment bearing first a branch, and then about three hydrothecæ arranged alternately; branches somewhat elongated, simple on our specimen, distinctly articulated near the base, below the first hydrotheca; beyond this the articulations are rather indistinct and irregular; the internodes usually appearing to bear two, three, or more pairs of opposite secund hydrothecæ, which are adnate to the branch and to each other, and so placed on the upper side of the branch as to have both their apertures turned upward and outward; the hydrothecæ are stout, swollen in the middle, with the upper free portion bent abruptly outward, nearly at a right angle, and tapering rapidly to the aperture, which is distinctly bilobed, the lobes rounded. The intervals between the hydrothecæ about equal them in length. On the main stem the hydrothecæ have nearly the same form, but are alternate and distant from each other, though still somewhat secund.

Height of the specimen (probably young), 33 mm.; length of longest branches, 5 mm. Gonothecæ unknown.

This peculiar species would belong to the genus *Desmoscyphus*, of Allman, but it unites that group still more closely to the true *Sertulariæ.* Collected by Dr. Yarrow. (A. E. V.)

Sertularia carolinensis, Verrill. Am. Journ. Sci. iii. 1872–4, p. 37.

A new species, discovered near Beaufort, N. C., by Dr. Yarrow. Uncommon.

Sertularia cornicina, Verrill.

Tolerably common.

Diphasia, sp.

A single specimen was secured, which may, perhaps, have been *D. rosacea*, Agassiz.

Aglaophenia trifida, Agassiz.

Very common.

Aglaophenia rigida, Allman. ?

Several fine specimens, six to eight inches high, with a few long, slender branches arising singly. In other respects it agrees closely with the above species recently described by Allman from off Cape Fear. (A. E. V.)

Athecata.

Margelis carolinensis, Agassiz.

This beautiful and delicate jelly-fish is tolerably abundant.

Eudendrium tenue, A. Agassiz. ?

A single female colony was found on *Cynthia partita*. This species has rather slender, much branched, simple, light yellowish brown stems, rather irregularly annulated throughout. The branches diverge widely at first, and then bend upward and are more or less crooked. The female gonopheres are pedicelled, and form thick clusters around the blastostyles. (A. E. V.)

Parypha crocea, Agassiz.

This species is considered by Prof. Verrill to be probably not distinct from *P. cristata*, Agassiz. It is quite common near Fort Macon.

Hydractinia polyclina, Agassiz.

Common at Fort Macon in clusters on stones and shells.

Porpitæ.

Physalia pelagica, Lamarck.

Dr. Coues in a former paper (Proc. Acad. Nat. Sci. 1871, p. 148) mentions the occurrence of a *Physalia* in the locality under discussion, which has been since recognized as *P. pelagica*. In March, 1871, large numbers were noticed in and beyond the surf and on the sea-beach after a severe storm from the southward. A number of specimens were secured, among them one which had a small dead fish entangled in its long tentacular hydroid appendages. Most of those upon the beach were dead, and could be handled with impunity, but when living the stinging produced by touching the hydroid tentacles is very apparent and painful. Dr. Yarrow on one occasion was consulted by a fisherman, who, seeing the animal floating on the water, reached out and grasped it, but paid dearly for his temerity, as when seen the entire arm to the shoulder was very red, much swollen, and exquisitely painful. The irritation lasted several days, and was allayed by a saturated solution of bi-carbonate of soda. The *Physalia* may be handled without danger if seized by the corrugated crest of the bladder-like portion. It is supposed by many that this animal is a virulent poison, and that fish eating it also become poisonous. Mons.

P. Labat in his *Book of Voyages* mentions that several persons eating of a fish that devours the *Physalia* became dangerously ill, but this sickness may have been produced by other causes. However this may be, Dr. Yarrow saw a case in which a small terrier dog died in a very short time after eating a piece of the hydroids of this species. Upon making a post-mortem the stomach was found entirely empty) with the exception of the piece of the animal eaten) and greatly congested. Mons. Ricord Madiana made a series of experiments to test the poisonous qualities of *Physalia*, and arrived at the conclusion that it is not poisonous apart from the stinging property. Specimens secured at Fort Macon were about six inches wide on the bladder portion, with hydroids five or six feet long. They were of a beautifully iridescent purplish color.

Porpita, sp.

A single specimen of this genus was found stranded on the sea-beach, which Prof. A. Agassiz informs us was possibly *P. pacifica*, or *P. Linnæana*, of Lesson, but, unlike the latter, the hydroid appendages were bright yellow in color.

Vellela mutica, Lamarck.

Occasionally noticed.

POLYPI or ANTHOZOA.

Alcyonaria.

Renilla reniformis, Cuvier.

Common on the sand flats at low water.

Leptogorgia carolinensis, Verrill.

This new species, described by Prof. Verrill, *Am. Journ. Sci.*, iii. 1872, p. 432, was discovered near Beaufort, N. C., by Lt. C. S. Smith, U. S. A., and was subsequently taken in same locality by Dr. A. S. Packard and the authors. It is of a bright brick-red color, and is found attached to oyster shells near Beaufort wharf. Quite common. Largest specimen seen was twelve inches in height.

Leptogorgia setacea, Verrill. Am. Journ. Sci. iii. 1872, p. 433.

A very interesting and beautiful species, of peculiar form. Color purple-yellow, axis black. One specimen was fifty-six inches long (fid. Verrill). Is quite abundant; attached to shells

within sounds and inlets, but more were seen on or near the sea-beach.

Leptogorgia virgulata, Milne Edwards.

Quite common in same localities, with preceding species. Varies exceedingly in color.

Anthopodium rubens, Verrill. Am. Journ. Sci., iii. 1872, p. 435.

This interesting new species was discovered by Prof. Edw. S. Morse at Fort Macon, encrusting the dead axis of *Leptogorgia*. Color light red. Is not common.

Titanideum suberosum, Verrill.

Was first discovered in North Carolina by the lamented Stimpson. Is abundant.

Telesto fructiculosa, Dana.

Common near Beaufort, N. C.

Actinaria.

Sagartia leucolena, Verrill.

Abundant; found attached to the under sides of rocks and stones.

Paractis rapiformis, Milne Edwards.

This curious species, called *Actinia rapiformis* by Lesueur, who took it in New Jersey, in 1817, after which time it was long lost sight of, was discovered by Dr. Yarrow on the sea-beach at Fort Macon, where it occurred in great numbers after a hard northeast gale. It then resembles a water-soaked peeled pear or onion, with whitish striæ. Very abundant.

Halocampa producta (Stimpson MSS.), Verrill.

Tolerably common in sandy and muddy places inside of Beaufort inlet, living beneath the surface with the tentacles extruded, when undisturbed. Is capable of great expansion and contraction. Some specimens seen were twelve inches in length.

Calliactis sol, Verrill.

Very numerous at Fort Macon; found adhering to eel-grass, stones, and to shells occupied by the hermit crab (*Eupagurus pollicaris*). Is one of the most beautiful of the anemones of the locality.

Aulactinia capitata, Verrill.

A very common species.

Cladactis cavernata, Verrill.

Common on rocky breakwaters of sea-beach. It is so firmly attached that considerable force is required to dislodge it.

Cerianthus americanus, Verrill.

Abundant in muddy marshes.

Ilyanthus chloropsis (Agassiz MSS.), Verrill.

Although Prof. Verrill states in his paper (*Rev. Polyps. East Coast, U. S.*, 1864) that this species is thought to be very rare, it is believed to have been discovered by the authors at Fort Macon, as at least two dozen individuals answering the description in the paper quoted were taken on the sea-beach after severe storms from the northward.

Paranthea pallida, Verrill.

It is believed this species has been recognized, a few specimens having been collected on the sea-beach in the summer of 1871.

Some few specimens of an undetermined species were taken on the beach after a severe gale. May be readily recognized by the six white radiating lines across the disc from the mouth.

Madreporaria.

Astrangia Danæ, Agassiz.

Common on sea-beach after storms.

Oculina arbuscula, Verrill.

Oculina implicata, Verrill.

Both species are common.

PORIFERA OR SPONGES.

SILICEA.

Microciona prolifera, Verrill.

Abundant; found on stones and dead shells, forming an incrustation.

Chalina arbuscula, Verrill.

Occurs on the coast of North Carolina, but was not recognized by the authors.

Cliona sulphurea, Verrill.

A common and well marked species.

KERATOSA.

Hircina campana, Nardo.

One specimen, collected by Dr. Yarrow.

Spongia vermiculata, *var. vermiculatiformis,* Hyatt.

This interesting form is not uncommon; several large specimens, both dry and in alcohol, having been collected by Dr. Yarrow.

Spongelia dubia, *var. foraminosa,* Hyatt.

Collected by Dr. Yarrow.

Spongelia spinosa, Hyatt.

One or two specimens obtained by Dr. Yarrow.

Dysidea fragilis, Johnston (?)

Specimens, referred doubtfully to this species by Prof. Hyatt, are in the collection.

It is greatly to be regretted that the identifications of many of the sponges forwarded from Fort Macon have not been made.

INSECTS.

It might be supposed from the paucity of vegetation near Fort Macon that this class would be but poorly represented, such is not the case, as during the sojourn of the authors of this paper at that place hundreds of different specimens were collected and forwarded to competent specialists for examination. Unfortunately, names only for the Coleoptera and Orthoptera have been received, for the former from Dr. G. W. Horn, of Philadelphia, for the latter from Dr. P. R. Uhler, of Baltimore, to whom our hearty thanks are due for their favors. We regret particularly being unable to furnish the names of more of the Lepidoptera, as the collection was large, being particularly rich in moths.

COLEOPTERA.

Of the following species, all are more or less common in the vicinity of Fort Macon:—

Tetracha virginica, Linn.

Cicindela punctulata, Fab.

Discœtus purpuratus, Bon.

Harpalus compar, Lec.

Harpalus pennsylvanicus, Lec.

Harpalus stigmosis, H'bs't.
Harpalus caliginosus, Say.
Anisodactylus mysticus, De Geer.
Staphylinus maculosus, Gran.
Trox punctatus, Fab.
Canthon lævis, Fab.
Canthon chalcitæs, Hald.
Euryomia sepulchratus, Lac.
Allorhina nitida, Lac.
Cyclocephala immaculata, Burm.
Sigynus gibbosa, De Geer.
Passalus cornutus, Fab.
Corynetis rufipes, Fab.
Chalcophora virginica, Linn.
Alaus myope, Esch.
Alaus oculatus, Esch.
Chauliognathus marginatus, Hy.
Collops eximius, Er.
Macendes melanura, Fab.
Oxacis dorsalis, Say.
Mallodon dasytemus, Hald.
Prionus laurgatus, Harris.
Clytus capræa, Say.
Leptura nidens, Forst.
Monohammus dentator, Fab.
Hylotrupes sagalus, Fab.
Elaptendion atomarium, De Geer.
Charynopha cribraria, Fab.
Hippodamia convergens, Guer.
Coccinella novem-notata, Hust.
Coccinella munda, Say.
Epilactura borealis, Fab.

ORTHOPTERA.

All the species noted are abundant.

Mantis carolina, Burm.
Acheta abbreviata, Serv.
Xiphidium fasciatum, De Geer.
Orchelimum agile, De Geer.
Conocephalus crepitans, Scudd.
Phaneroptera curvicauda, Harris.
Oedipoda sincerata, Harris.

Acridium americanum, Drury.
Acridium obtusum, Burm.
Oxya claviger, Sew.
Caloptenus femur-rubrum, De Geer.
Stenobothrus maculipennis, Scudd.
Opsomala bivitata, Lew.

HYMENOPTERA.

Vespa crabio, Linn.
Polistes pallipes, Lacip.

LEPIDOPTERA.

Papilio asterias, Drury.
Colias philodice, Godart.
Sphynx carolina?

The last named species is very rare, but two individuals having been seen.

Utetheisa bella, Drury.

Very numerous in July and August.

Spilosoma acrœa, Drury.
Tertrix, sp.

DIPTERA.

Tabanus lineola, Fab.
Tabanus atratus, Fab.
Musca domestica, Linn.
Musca cæsar, Linn.
Musca vomitoria, Linn.

All the preceding species of Diptera are much too common for comfort at Fort Macon.

In addition to the list of Insects, others of the following genera have been found:—

Blatta, sp.
Membracis, sp.
Correus, sp.
Cimex, sp.
Forficula, sp.
Ixodes, sp.
Lithobius, sp.

Unless, within a reasonable period, further determination of specimens are received, this paper may be considered as the concluding one of the series.