

Fig. 3. Side view of the head with the skin laid back, showing the branches of the external jugular vein.

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|-------------|------------------------|
| n. Nasal. | t. Tympanic. |
| o. Orbital. | e.j. External jugular. |

Fig. 4. The arterial system of *Hyla aurea* (partly diagrammatic). (The dotted lines indicate the position of arteries that are hidden by muscles, &c. The carotid artery is made not to overlap the systemic arch, so to avoid confusing the diagram.)

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|---------------------------------|--------------------------|
| h. Heart. | cu. Cutaneous artery. |
| t. Truncus arteriosus. | c.m. Cœliaco-mesenteric. |
| z. Carotid arch. | d.a. Dorsal aorta. |
| ii. Systemic arch. | il. Iliac artery. |
| iii. Pulmo-cutaneous arch. | lm. Lumbar artery. |
| l. Lingual artery. | cœ. Cœliac artery. |
| c. Carotid artery. | m. Mesenteric artery. |
| s. Subclavian artery. | g. Gastric artery. |
| oc. Occipital artery. | r. Renal arteries. |
| o.c. Occipito-vertebral artery. | gl. Carotid gland. |
| pl. Pulmonary artery. | |

ART. XXX.—*Report of some Crustacea dredged off the Coast of Auckland.*

By CHARLES CHILTON, M.A., D.Sc., F.L.S., Professor of Biology, Canterbury College, New Zealand.

[Read before the Philosophical Institute of Canterbury, 6th December, 1905.]

SHORTLY after the Dunedin meeting of the Australasian Association for the Advancement of Science, some dredging was done off the coast of Auckland by Messrs. Hedley, Suter, and others. The small number of *Crustacea* that were taken were kindly handed over to me for identification by Mr. H. Suter, and the following report is the result. I have included one or two specimens sent to me later on by Mr. Suter, and some dredged early in 1905 off the Poor Knights Islands by Captain Bollons of the "Hinemoa." Most of the specimens were taken in the Hauraki Gulf at a depth of 25 fathoms, and there were only four taken outside Great Barrier Island in 120 fathoms—viz., a Callianassid, not identifiable; *Lyreidus tridentatus*, De Haan; *Cirrolana rossii*, Miers; and *Ampelisca chiltoni*, Stebbing.

None of the species given below are new, though one or two of the *Sphæromida*, which I am unable to identify satisfactorily at present, may prove to be new species. There are, however, one or two interesting additions to our knowledge of the distribution of species already known, the most important being that of *Lyreidus tridentatus*, De Haan, which is now recorded from New Zealand for the first time, and belongs to a group of the *Anomura*—the *Raminidea*—hitherto unrepresented in the New Zealand fauna.

BRACHYURA.

Paramithrax peronii, M.-Edwards. Miers, Cat. N.Z. Crust., p. 5; Index Faunæ N.Z., p. 247.

Several specimens from Channel Island, 25 fathoms, and one from 30 fathoms, appear to belong to this species, but they are very small, the largest having the carapace not more than 15 mm. long.

Pinnotheres pisum, Linnæus. Miers, Cat. N.Z. Crust., p. 48; Index Faunæ N.Z., p. 250.

One small male specimen from Channel Island, Hauraki Gulf, 30 fathoms, appears to agree well with the description. As is frequently the case with males, this specimen was found free and not in a bivalve shell.

It is perhaps worthy of note that Heller's "Novara" specimens, which he identified with the *P. pisum* of Europe, were from Auckland, found in *Mytilus*.

Ebalia lævis, Bell. Miers, Cat. N.Z. Crust., p. 56; Index Faunæ N.Z., p. 251.

Three specimens from Channel Island, 25 fathoms. I have also two specimens dredged off the Poor Knights Islands in 60 fathoms by Captain Bollons early in 1905.

Through the kindness of Mr. F. E. Grant I have been able to compare this species with specimens of *E. tuberculosa* (Milne-Edwards) taken off Sydney at the depth of 300 fathoms; from these *E. lævis* may be distinguished by the smoother carapace, and by having the posterior margin produced so as to give the appearance of three obtuse teeth. Mr. G. M. Thomson has recorded *E. tuberculosa* from Dusky Sound, 40 fathoms. It was taken by the "Challenger" at station 167, about a hundred and fifty miles west of New Plymouth, in 150 fathoms.*

ANOMURA.

Lyreidus tridentatus, De Haan. Haswell, Cat. Aust. Crust., p. 144; and Henderson, "Challenger," Anomura, p. 33.

One specimen was taken outside Great Barrier Island in 120 fathoms. This agrees well with the description given by Haswell. The prominent dorsal elevations on the 3rd and 4th abdominal segments are present as described by Henderson, except that the one on the 3rd is almost acute, though much smaller than the one on the 4th.

The species was originally described from Japan, and was taken by the "Challenger" off Port Jackson and also near the Fiji Islands, but it has not been previously recorded from New Zealand.

* Annals and Mag. Nat. Hist., 7, x, p. 462.

Eupagurus edwardsi, Filhol. G. M. Thomson, Trans. N.Z. Inst., xxxi, p. 182; Index Faunæ N.Z., p. 251.

Two specimens, from Channel Island, Hauraki Gulf, 25 fathoms. These agree very well with the descriptions given by Thomson and Filhol. One is a fairly large specimen, with carapace about 15 mm. long; the other has the carapace not more than 10 mm. long. In the latter the propodos of the right chelipede bears few tubercles on its outer surface, and those present are small and somewhat spiny.

In some points this species shows a marked resemblance to *E. spinulimanus*, Miers, and I should not be surprised if the two prove to be identical. I have two or three small specimens from Auckland, collected by Dr. Cockayne in 1905, which also belong to this species, and are almost more like *E. spinulimanus*.

Stratiotes setosus, Filhol. G. M. Thomson, Trans. N.Z. Inst., xxxi, p. 185; Index Faunæ N.Z., p. 252.

Several specimens from Channel Island, 25 fathoms. These are much smaller than the specimen in the Canterbury Museum that was examined and named as above by Mr. Thomson, but they agree closely with his description.

Petrolisthes novæ-zealandiæ, Filhol. Thomson, Trans. N.Z. Inst., xxxi, p. 190; Index Faunæ N.Z., p. 252.

Two small specimens from Channel Islands, 25 fathoms, appear to belong to this species, but they are too young for certain identification.

Galathea pusilla, Henderson. Thomson, Trans. N.Z. Inst., xxxi, p. 193; Index Faunæ N.Z., p. 252.

Two specimens from Channel Islands, 25 fathoms. This species was previously known in New Zealand from Cook Strait, Wanganui, and Paterson's Inlet, and was obtained by the "Challenger" off the south-east of Australia.

AMPHIPODA.

Amaryllis macrophthalmus, Haswell. *Amaryllis macrophthalmus*, Haswell, Proc. Linn. Soc. N.S.W., iv, p. 253; Cat. Aust. Crust., p. 227. *Amaryllis brevicornis*, Haswell, l.c., p. 254; Cat. Aust. Crust., p. 228. *Glycerina affinis*, Chilton, l.c., ix, p. 2, pl. xlvii, fig. 1, a and b. *Amaryllis macrophthalmus*, Stebbing, "Challenger," Amphipoda, p. 706, pl. xxix. *Amaryllis macrophthalmus*, Thomson, Annals and Mag. Nat. Hist., 7, x, p. 463; Index Faunæ N.Z., p. 258.

A single specimen, a female with eggs, from Channel Islands, 25 fathoms, undoubtedly belongs to this species. The species is a widely distributed one. Haswell records it from Tasmania,

Port Jackson and other localities on the east coast of Australia; while the "Challenger" specimen was obtained off Cape Virgins, Patagonia, at a depth of 55 fathoms. *Glycerina affinis*, Chilton, which was described under a misapprehension as to its generic position, is a synonym of this species.

Mr. G. M. Thomson has recorded this species from Moko-hinau and from Lyttelton.

Ampelisca chiltoni, Stebbing. Index Faunæ N.Z., p. 260, and Report "Challenger," Amphipoda, p. 1042.

One imperfect specimen dredged off Great Barrier Island, at a depth of 120 fathoms, appears to belong to this species. I have also two specimens dredged off the Poor Knights Islands, in 60 fathoms, and two others collected in Kaipara Harbour by Dr. Cockayne, that certainly belong to it.

The "Challenger" specimens were collected at station 167, to the west of New Plymouth, in 150 fathoms.

Ampelisca acinaces, Stebbing. Index Faunæ N.Z., p. 260; Thomson, Annals and Mag. Nat. Hist., 7, x, p. 464.

Some specimens from Bay of Islands, 4 fathoms, given me by Dr. Cockayne, belong, I think, to this species. They can be distinguished from *A. chiltoni* most readily by the dorsal compression, which is continued along the whole length of the body, whereas in *A. chiltoni* it is not at all well marked, and is limited to the head. Many minute points of difference are given by Mr. Stebbing, but if my identifications are correct some of these will not hold: e.g., the inferior posterior angles of the 3rd segment of the pleon are produced into an acute slightly upturned point, just as in *A. chiltoni*, while Mr. Stebbing describes and figures the lower margin as nearly straight, and making a right angle with the hind margin; and again, in my specimens the lower antennæ are considerably less than the length of the body and shorter than in *A. chiltoni*, while Mr. Stebbing gives them about equal to the length of the body in *A. acinaces*, and his figure of *A. chiltoni* shows them considerably less than that of the body, although in his description of the species he says, "antennæ nearly as in *Ampelisca acinaces*."

The "Challenger" specimens were taken off Port Jackson in 35 fathoms. According to Mr. Thomson, this species is not infrequently washed up on Ocean Beach, Dunedin, in considerable numbers.

Leucothoë tridens, Stebbing. "Challenger" Reports, xxix, p. 777; Index Faunæ N.Z., p. 258.

Two imperfect specimens, Channel Islands, 25 fathoms, appear to belong to this species.

ISOPODA.

Cirolana rossii, Miers. Cat. N.Z. Crust., p. 109; Index Faunæ N.Z., p. 263.

One small specimen, dredged off Great Barrier Island, appears to belong to this common species, but it is immature, and the eyes very indistinct, so that the identification is not free from doubt.

Among the *Isopoda* were two or perhaps three species of *Sphæromida*, one apparently belonging to the genus *Cilicæa*, and new to New Zealand. But I cannot identify these with existing species, and do not care to venture on the description of new species of this difficult family pending the appearance of Dr. H. J. Hansen's work on the genera of the group.

ART. XXXI.—*List of Crustacea from the Chatham Islands.*

By CHARLES CHILTON, M.A., D.Sc., F.L.S., Professor of Biology, Canterbury College, New Zealand.

[Read before the Philosophical Institute of Canterbury, 6th December, 1905.]

IN connection with the origin of the fauna of New Zealand that of the outlying islands is of especial importance, and I am therefore giving here a list of some *Crustacea* from Chatham Islands, a group situated about 450 miles east from Lyttelton Harbour. It will be seen that the list is a very short one, and this must necessarily be the case, for no systematic collection of the *Crustacea* has been so far made, and I have only a few specimens that have been gathered at odd times by Mr. A. Shand, Miss S. D. Shand, Professor Kirk, and Dr. Dendy. The list, indeed, would be hardly worth while publishing of itself, but I hope that it will be the means of causing others who may have the opportunity of doing so to pay special attention to the fauna and flora of these and other outlying islands of New Zealand. The terrestrial and fresh-water faunas are of the greatest value in this connection, and it is of extreme importance that they should be studied, and if possible preserved, before it is too late.

BRACHYURA.

Paramithrax latreillei, Miers. Index Faunæ N.Z., p. 247
Numerous specimens from Te Whakuru (*Miss Shand*).

Platyonichus bipustulatus, M.-Edwards. Index Faunæ N.Z.,
p. 249.
From Te Whakuru (*Miss Shand*).