

NEW ZEALAND
DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH

BULLETIN 139 (1)

Biological Results of The Chatham Islands 1954 Expedition

PART 1

Decapoda Brachyura by R. K. DELL

Cumacea by N. S. JONES

Decapoda Natantia by J. C. YALDWYN

New Zealand Oceanographic Institute

Memoir No. 4

1960

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Photo: D. Marshall

Sorting a trawl haul on the after deck

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FOREWORD

The Chatham Islands 1954 Expedition was organised and led by Prof. G. A. Knox of the Zoology Department of Canterbury University. The expedition was planned to explore the distribution of benthic and pelagic animals between the New Zealand coast and the Chatham Islands over the Chatham Rise, and to investigate the faunal affinities of the Chathams group, which lies in the Sub-tropical Convergence zone.

A substantial grant towards the cost of the expedition was made by the Council for Scientific and Industrial Research on the recommendation of the N.Z. Oceanographic Committee; further financial support was given by Canterbury University, Canterbury Museum, Dominion Museum and Canterbury and Southland Branches of the Royal Society of New Zealand. The expedition was carried out from the M.V. *Alert* under the command of her owner and master, Mr A. J. Black.

The scientific staff was drawn from the following organisations: Canterbury Museum (R. R. Forster); Canterbury University (G. A. Knox, E. W. Dawson, J. R. MacIntyre); Dominion Museum (R. K. Dell, J. M. Moreland); N.Z. Oceanographic Institute (D. M. Garner); Otago University (D. Marshall); Portobello Marine Biological Station (E. J. Batham); Victoria University of Wellington (J. C. Yaldwyn).

Prof. G. A. Knox has been responsible for organisation of the sorting and allocation of material. Type material from the expedition is deposited at Canterbury Museum. Preliminary technical editing of the resulting manuscripts has been carried out by Prof. Knox and Dr D. E. Hurley. Mr M. O'Connor (Information Bureau, D.S.I.R.) has been responsible for final editing.

Further results of the expedition will be published in this series as the examinations of other animal groups are completed.

J. W. BRODIE,
Director,
N.Z. Oceanographic Institute.

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The Cumacea of the Chatham Islands 1954 Expedition.

By N. S. JONES,

Marine Biological Station, Port Erin, Isle of Man

INTRODUCTION

Three species of Cumacea were present in the collections from five stations of the Chatham Islands Expedition. With so small a number of species it is not possible to discuss the affinities of the Cumacea of the area investigated. Moreover the cumacean fauna of New Zealand is at present only partially described while that of the neighbouring South-West Pacific outside Australia is completely unknown. Of the three species *Diastylis acuminata* sp.n. is previously undescribed, *Diastylis insularum* Calman has been recorded from shallow water at several localities on the New Zealand coast, and *Hemilamprops pellucida* Zimmer has hitherto been obtained only from moderate depths off the coast of South Africa.

The following were the stations at which Cumacea were collected:

- Sta. 5. 24/1/54. 300 fm. Fine green sand. Chatham Rise, 43°32'S., 178°38'E. Dredge.
Sta. 6. 24/1/54. 220 fm. Fine green muddy sand. Chatham Rise, 43°40'S., 179°28'E. Beam trawl.
Sta. 40. 3/2/54. 155 fm. Fine grey sand. S.E. of Pitt Is., 44°32'S., 176°05'W. Dredge.
Sta. 44. 7/2/54. 125 fm. Fine green muddy sand. N.30°E. of Kaingaroa, 43°35'S., 176°03.5'W. Otter trawl.
Sta. 59. 12/2/54. 290 fm. Fine green muddy sand. Chatham Rise, 43°38'S., 177°19'E. Beam trawl.

I am much indebted to Mr G. A. Knox of Canterbury University College for the opportunity to examine these collections and for information concerning them.

SYSTEMATICS

Family LAMPROPIDAE

Genus *Hemilamprops* G. O. Sars 1883

Hemilamprops pellucida Zimmer 1908
Zimmer, 1908, p. 171, fig. 53-59.
Stebbing, 1912, p. 144, pl. LII.

Occurrence

Sta. 44, 1 ovigerous ♀; Sta. 59, 1 ♀.

Previous records

South Africa, outside the Agulhas Bank, 564 m (308 fm) (Zimmer, 1908), and off Cape Point N.81°E. 32 miles (Stebbing, 1912).

Family DIASTYLIDAE

Genus *Diastylis* Say 1818

Diastylis insularum Calman 1908

Calman, 1908, p. 234, fig. 1-5A, as *Leptostylis* (?) *insularum*.

Occurrence

Sta. 5, 1 ♀; Sta. 40, 2 immature ♂♂, 3 ♀♀; Sta. 55, 77 immature ♂♂, 79 ♀♀.

Previous records

New Zealand—Bay of Islands, surface (Calman, 1908), Lyttelton Harbour, 1-5 fm. (Calman, 1911), Menzies Bay, Hawke's Bay (unpublished).

Diastylis acuminata sp.n. Fig. 1-6

Occurrence

Sta. 6, 1 ♀.

Female with developing marsupium

Carapace 5/9 of total length excluding telson and 1 2/3 as long as the pedigerous somites; length about twice greatest depth; somewhat vaulted dorsally and with many small spines interspersed with small hairs which are also present on the pedigerous somites; the body encrusted with sand grains; the pseudorostrum long and pointed, about 1/4 the length of the whole carapace; the ocular lobe longer than wide, lenses not apparent; the anterolateral margin slightly concave, with no trace of an antennal angle; the inferior margin with a few rather fragile teeth anteriorly. Pedigerous somites all distinct, 3rd and 4th not much produced backwards, 5th with hind end blunt. Pleon somites fairly smooth, with scattered hairs, 1-4 somewhat produced posteriorly at the sides. Telson about 3/4 the length of the peduncle of the uropods; preanal and postanal portions about equal in length; postanal portion with 9 hair-like spines on each side and 2 strong apical spines.

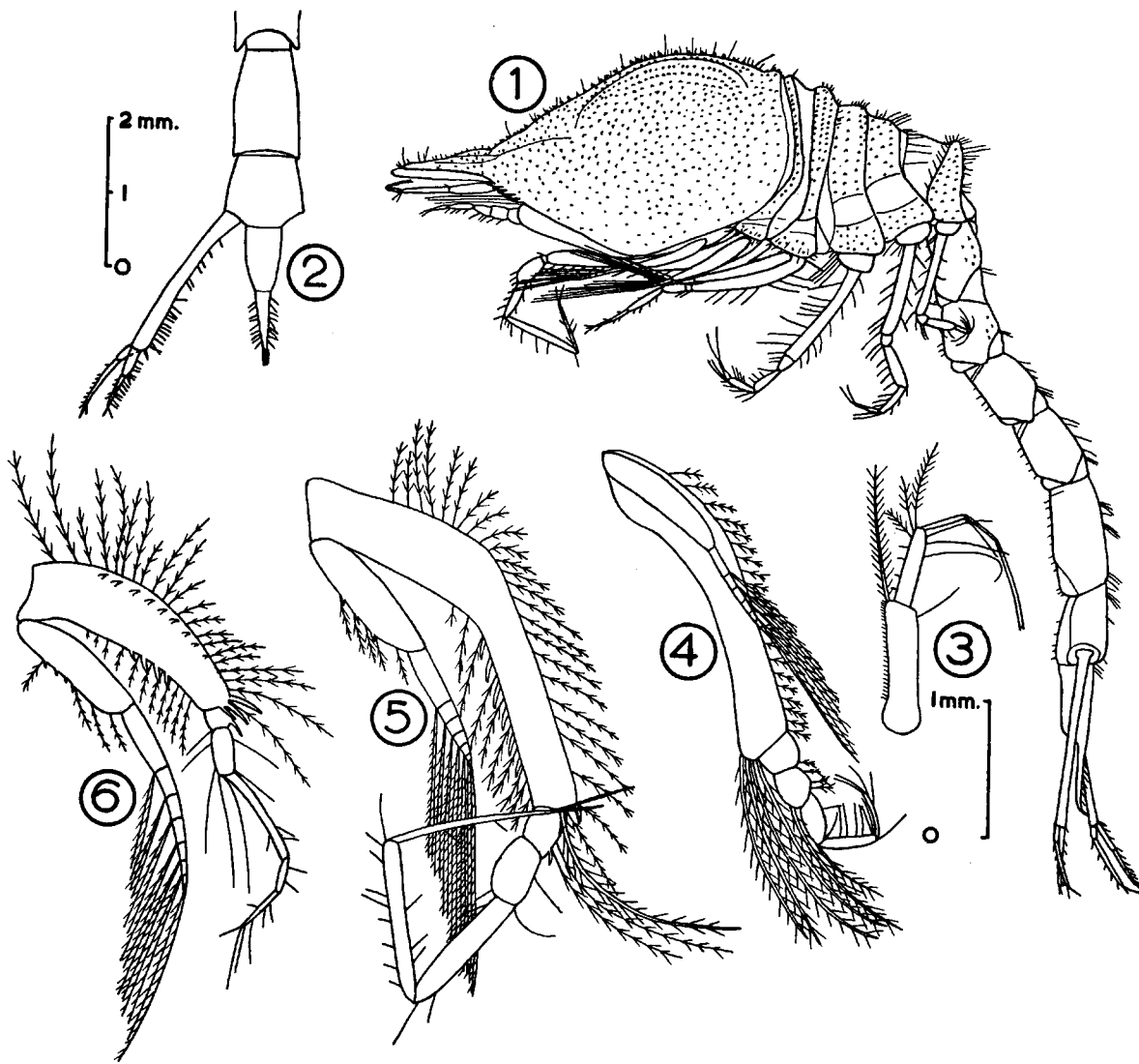
First antenna - first joint 1 2/3 length of second joint, which is 1 2/3 length of third joint; main flagellum 3-jointed, accessory flagellum 2 (3?)-jointed, about the length of the first joint of the main flagellum. Third maxilliped with basis about 1 1/2 as long as the remaining joints together and with no external lobe on the ischium. First pereopod with the basis about 3/4 the length of the remaining joints together; dactylus about as long as the propus and slightly longer than the carpus; basis with a strong spine on the outer end and a row of fragile spines on the inner side. Second pereopod with the basis slightly shorter than the remaining joints together; dactylus about 1 1/2 the length of the propus and about 1/2 the length of the carpus; basis with several stout but fragile spines at the outer end, with a row of slender spines on the inner edge and a row of blunt spines near the outer side. Third and fourth pereopods with no trace of exopodites. Inner ramus of the uropod 3-jointed, slightly shorter than the outer ramus and about 2/5 the length of the peduncle; peduncle with about 18 hair-like spines on the inner edge and a stouter end spine; inner ramus with 6:4:4 spines on the inner side and 1 end spine. Length excluding telson 14 mm.

D. acuminata differs in several respects from the three species of *Diastylis* known previously from New Zealand waters. The telson is longer in proportion to the peduncle of the uropods - about 1/2 the length of the peduncle in *D. neozealanica* G. M. Thomson (Thomson, 1892), *D. insularum* Calman (Calman, 1908), and *D. krameri* Zimmer (Zimmer, 1920). The first antenna has the second joint longer than the third, in contrast to these three species and to most of the northern species of the genus. The species bears some resemblance to *D. koreana* Calman (Calman, 1911) but it differs among other respects in the length of the pseudorostrum which is longer still in *D. koreana* and which also has the second joint of the first antenna shorter than the third joint.

The type will be deposited in the Canterbury Museum, Christchurch.

REFERENCES

- CALMAN, W. T. 1908: Notes on a small collection of plankton from New Zealand. I. Crustacea. *Ann. nat. Hist.* (8) 1: 232-40.
— 1911: On new or rare Crustacea of the Order Cumacea from the collection of the Copenhagen Museum, Pt. II. *Trans. zool. Soc. London*, 18: 341-98.
STEBBING, T. R. R. 1912: The Symphoda. *Ann. S. Afr. Mus.* 10: 129-76.
THOMSON, G. M. 1892: On the occurrence of two species of Cumacea in New Zealand. *J. Linn. Soc. London, Zool.* 24: 263-71.
ZIMMER, C. 1908. Die Cumaceen der Deutschen Tiefsee-Expedition. *Erg. Dtsch. Tiefsee-Exp.* 8: 155-96.
— 1920. Mitteilung über die Cumaceen des Berliner Zoologischen Museums. *Mitt. Zool. Mus. Berlin*, 10: 117-49.



Diastylis acuminata sp.n. Fig. 1. Holotype female, lateral view. Fig. 2. Telson and left uropod dorsally. Fig. 3. First antenna. Fig. 4. Third maxilliped. Fig. 5. First peraeopod. Fig. 6. Second peraeopod.

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1. 1955: Bibliography of New Zealand Oceanography 1949–1953 by N.Z. Oceanographic Committee (published as *N.Z.D.S.I.R. Geophys. Mem.*, 4).
2. 1957: General account of the Chatham Islands 1954 Expedition by G. A. Knox (published as *N.Z.D.S.I.R. Bull.* 122).
3. 1959: Contributions to Marine Microbiology. Compiled by T. M. Skerman.
4. 1960: Biological Results of the Chatham Islands 1954 Expedition, Part I—Decapoda Brachyura by R. K. Dell, Cumacea by N. S. Jones, Decapoda Natantia by J. C. Yaldwyn.
5. 1960: Biological Results of the Chatham Islands 1954 Expedition, Part II—Archibenthal and Littoral Echinoderms by H. Barraclough Fell.
6. 1960: Biological Results of the Chatham Islands 1954 Expedition, Part III—Polychaeta Errantia by G. A. Knox.
7. 1960: Biological Results of the Chatham Islands 1954 Expedition, Part IV—Mollusca by R. K. Dell; Sipunculoidea by S. J. Edmonds.
8. 1960: Hydrology of New Zealand Coastal Waters 1955, by D. M. Garner.

