

the next moult, the eggs remain in the ovaries but rudimentary brood sacs appear; the oöstegites are either unchanged or now fully developed. According to Jensen (1955) this depends on whether copulation has occurred in *Sphaeroma hookeri*, but Holdich (1968a) has observed otherwise in *Dynamene bidentata*. After a further moult, following copulation, the oöstegites are fully developed and the eggs have been transferred from the ovaries to the internal brood sacs, or to the marsupium in several genera, e.g., *Cymodocella*, *Cassidina* (Hansen 1905: 79, 81), presumably fertilised as they pass down the oviducts. The brood sacs are then distended by the eggs so that they occupy nearly all of the body cavity, packed around the gut and extending into the cephalon and pleon. The eggs or embryos are usu-

ally visible through the ventral body integument and oöstegites, so that gravid females are readily recognised.

#### POST-EMBRYONIC DEVELOPMENT

After embryonic development in the brood sacs the young squeeze out from the openings under the oöstegites and cling to the female for varying periods before finally swimming free. They are then fully formed except that the seventh pereonal segment is very small and overlapped by the sixth, and the seventh pereopods have not appeared (see also Kinne 1954; Holdich 1968a). The seventh pereopods appear as rudiments after the first moult and, together with the seventh segment, are fully developed after about the fourth moult.

#### ACKNOWLEDGMENTS

This paper forms part of a proposed revision of the Crustacea Isopoda of New Zealand.

During a visit to the United Kingdom in 1962-63 on a Nuffield Fellowship, D. E. Hurley was able to examine all the New Zealand isopod types in the British Museum (*Natural History*) and, equally important, all of the early New Zealand collections held there including especially the material described by Miers. Although some of this had long been dried and treated

as insect material, it was possible to identify all of it, establish its systematic position, and figure the material where appropriate. Through the good offices of Dr Isabella Gordon of the British Museum and the appropriate curators in the Paris Museum, it was also possible to see relevant Filhol specimens. Subsequently, New Zealand type and early material was borrowed from Canterbury Museum, and the basis was laid for examination and figuring of material in New Zealand collections.

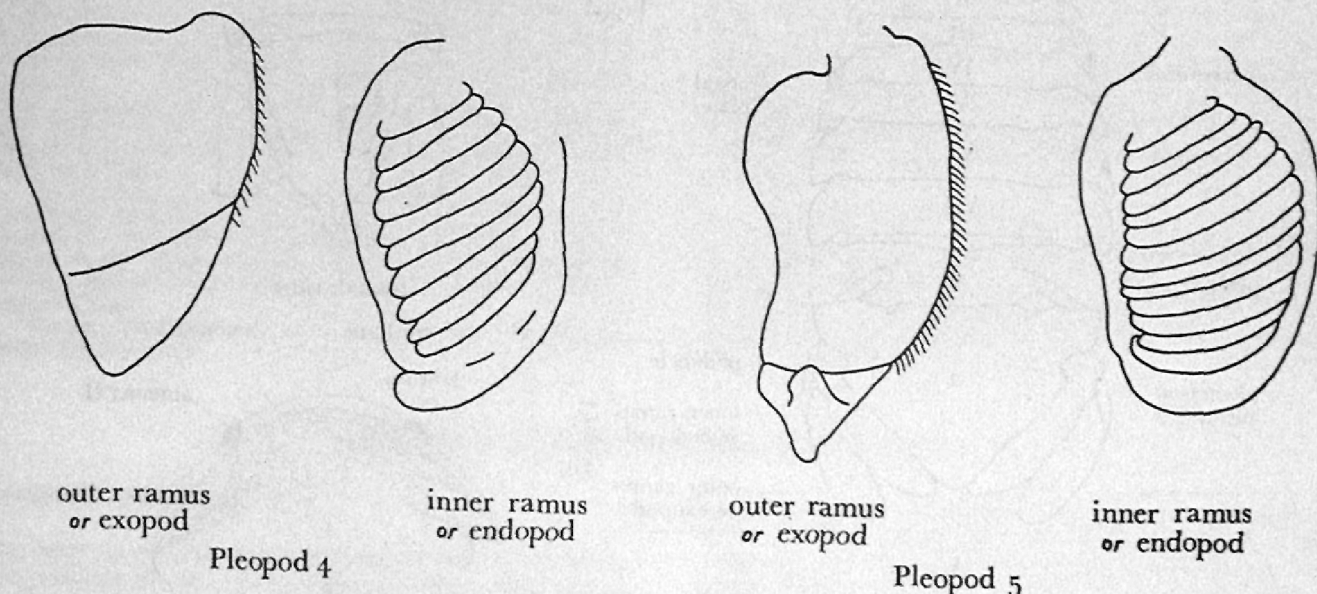


FIG. 2. Pleopods 4 and 5 of the hemibranchiate sphaeromatid *Sphaeroma quoyanum*, showing segmentation of outer rami and pleating of inner rami.

Much remained to be done when K. P. Jansen, having completed his doctoral thesis on the ecology of sphaeromatid isopods at Kaikoura, New Zealand, offered his collaboration. This has permitted completion of the work much sooner than was anticipated, and has brought a new perspective to it. Jansen's approach has been the pragmatic one of first examining all the material brought together from diverse sources, recognising species and, equally important, various life-forms which had sometimes been considered valid species in the past. As well as illustrating these and marrying the two sets of data, he prepared the first draft. Throughout, there has been constant discussion and collaboration, but his has been the larger share of the draft manuscript. The views expressed are, however, those of both authors.

The authors express their thanks to all who have helped in any way with this project and, in particular, to Dr Isabella Gordon and Dr R. M. Ingle of the

British Museum (Natural History), whose hospitality and help are in large part responsible for much clarification of the early New Zealand material; to the Curators of the Crustacea of the Museum National d'Histoire Naturelle of France for help with Filhol type material; and to Dr Richard Bott, Sektionär der Crustaceen-Sektion des Senckenberg-Museums, for assistance with Kohl-Larsen material.

In New Zealand, thanks are due to Dr R. K. Dell, Director of the National Museum, Wellington, and Mr J. M. Moreland of that institution for access to their crustacean collections; to the Director and Drs Marie Büchler and G. Tunnicliffe of the Canterbury Museum for assistance with and loan of Chilton Collection specimens; Professor R. L. C. Pilgrim of the Zoology Department, Canterbury University, for various and continued assistance over the years; the various collectors named in the station list; and Mrs Gillian Crook for assistance with drafting of figures.

### STATION DATA AND ABBREVIATIONS

N.Z. Oceanographic Institute Station Lists are in abbreviated form, particularly in field notes where records of individual occurrences of animals noted in the field but not relevant to this paper have been omitted. To assist in referring to material from other institutions, where station numbers are not available, a running sample number is given, distinguishable from station numbers by the absence of a letter prefix.

"Z" numbers used within the N.Z. Oceanographic Institute denote material from other sources or material collected by staff members before their association with the Institute but subsequently donated to the Institute.

Chatham Islands Expedition material is deposited at Canterbury Museum, Christchurch; Victoria University Zoology Department collections at the National Museum, Wellington; Edward Percival Marine Laboratory collections at that laboratory, Kaikoura.

Type material is deposited at the museum or institution owning the material. Canterbury University and Chatham Islands Expedition material is held at Canterbury Museum.

#### ABBREVIATIONS FOR EQUIPMENT

- DC—cone dredge;
- DCMB—cone dredge with cylindrical steel wire mesh bag with canvas bag as inner lining;
- DD—Devonport dredge (modified naturalist's dredge, rectangular with steel wire mesh bag);
- GHO—Hayward orange-peel grab (with metal plates added);
- GLP—large Petersen grab;
- GP—Petersen grab;
- GOP—orange-peel grab;
- TAL—Agassiz trawl with 6' netting bag;
- TAM—Agassiz trawl with 4' netting bag;
- TAS—Agassiz trawl with 3' netting bag;
- TM—modified Menzies trawl ('isopod dredge').



LIST OF STATIONS

New Zealand Oceanographic Institute (NZOI)

- A444e** 41°18.7'S, 174°30.2'E. Recovery of ironsand by special dredge (A444 × 5). Depth 256 m.  
*Cymodoce australis*
- B176** (9 Oct. 1959) 50°29'S, 166°30.5'E. TAS.  
Broken shell, bryozoan, much sponge. Depth 84 m.  
*Cymodoce allegra*, *Exosphaeroma gigas*
- B177** (9 Oct. 1959) 50°30.8'S, 166°20.5'E. DC.  
Brown and red seaweed, little else, tiny rock fragment. Depth 38 m.  
*Cymodoce australis*
- B190** (14 Oct. 1959) Campbell I. Shore collection.  
Algal holdfast with sandhoppers, some limpets. Near old house remains.  
*Exosphaeroma obtusum*
- B191** (15 Oct. 1959) Campbell I. Shore collection.  
Between old and new camps in bay.  
*Exosphaeroma obtusum*
- B247** (26 May 1960) 46°30'S, 168°02.5'E. GLO.  
Shelly with gravel and pebbles. Depth 36 m.  
*Cilicæa caniculata*
- B260** (27 May 1960) 46°45.4'S, 168°39'E. DIS.  
Algae, sponge, bryozoa, isopods, *Pentagonaster*, serpulids. Depth 25 m.  
*Cymodoce allegra*, *Exosphaeroma gigas*
- B262** (27 May 1960) 46°52'S, 168°31.3'E. DIS.  
Dead shell, polychaete, bryozoa.  
GLO. Shelly golden and darker sands. Bryozoa. Depth 70 m.  
*Cassidina typa*
- B275** (11 Oct. 1962) 47°20'S, 169°08'E. DCM.  
Finer broken shell and polyzoa. Crinoids, worm tubes, sponge. Depth 143 m.  
*Cilicæa caniculata*
- B582** (11 Oct. 1962) 48°00'S, 167°38'E. DCM.  
Bryozoa, brachiopods, *Panope*, isopod, etc. Depth 143 m.  
*Cymodoce allegra*, *Exosphaeroma gigas*
- B660** (24 Oct. 1962) 38°40'S, 174°12'E. TAL.  
No sediment sample. Hermit crabs, sponge, etc. Depth 71 m.  
*Cymodoce iocosa*
- B664** (25 Oct. 1962) 38°01.8'S, 174°25.3'E. TAL.  
Sponge, etc. Depth 75 m.  
*Cymodoce hodgsoni*
- B669** (25 Oct. 1962) 37°18.7'S, 174°06.2'E. TAL.  
Mud, *Lyreidus*, prawn killers, etc. Depth 130 m.  
*Cymodoce iocosa*
- B686** (28 Oct. 1962) 40°16'S, 172°32.3'E. TAL.  
Shell, worm tubes, solitary corals, etc.; much old shell. Depth 126 m.  
*Cilicæa tasmanensis*, *Cymodoce iocosa*
- C171** (4 Sep. 1959) 39°40'S, 172°52.5'E. TAS.  
Depth 163 m.  
*Cymodoce iocosa*
- C186** (7 Sep. 1959) 40°40'S, 173°03'E. TAS.  
Depth 37 m.  
*Cymodoce iocosa*
- C291** (23 Oct. 1959) 38°01.2'S, 174°25.2'E. GP.  
Small sample: some mud, sand, ironsand, ground-up shell. Isopod (white). Depth 68 m.  
*Cassidina typa*
- C344** (26 Oct. 1959) 37°58.6'S, 174°34.4'E. DD.  
Half mile SE Gannet I. Hermit crabs, few worms, starfish, shrimps, grey isopods, quill worms. Depth 55 m.  
*Cassidina typa*
- C395** (2 May 1960) 40°43'S, 174°16'E. N70 (light).  
Cumaceans, amphipods, giant ostracods. Depth 11 m.  
*Scutuloidea maculata*
- C672** (16 Jun. 1961) 42°43.6'S, 173°30.6'E. Rock dredge.  
S end Bushett Rocks. Angular to subangular bored boulders of sandstone coated with dead bryozoa. Depth 64 m.  
*Cymodoce iocosa*
- C752** (17 Feb. 1962) 35°19'S, 172°57.5'E. GLO.  
Grey shelly medium muddy sand. Depth 131 m.  
*Cilicæa tasmanensis*
- C758** (17 Feb. 1962) 34°40'S, 172°14.5'E. TAL.  
Medium grey muddy sand. *Flabellum*, sponge, 3 pebbles. Depth 205 m.  
*Pseudosphaeroma callidum*
- C814** (25 Feb. 1962) 37°40'S, 178°56.4'E. Off East Cape. GLO.  
Soft grey mud.  
TAL. Chiefly fossil concretions, mainly elongated and rounded in section with a hole through middle. Isopod. Depth 194 m.  
*Cilicæa tasmanensis*
- C921** (10 Feb. 1963) 41°04.9'S, 173°57.3'E. Tawero Pt., Pelorus Sound; tide race. GHO.  
Mud with many shells. Live horse mussels, brachiopods, *Chlamys*, *Amphidesma*, oyster, barnacles, hydroids, bryozoa, hermit crabs, sponges, starfish, polychaetes  
*Cassidina typa*
- D2** (15 Apr. 1963) 52°33.8'S, 160°09'E. Shore collection, Campbell I.  
Collections of *Paphirus*, etc. at Camp Cove.  
*Exosphaeroma obtusum*
- D15** (22 Apr. 1963) 54°29.5'S, 158°58'E. Shore collection, Buckle Bay, Macquarie I.  
*Exosphaeroma gigas*
- D39** (7 May 1963) 50°58'S, 165°45'E. DCMB.  
Coral, rocks, alcyonaria with small ophiuroids and pycnogonids entwined, many small molluscs. Depth 549 m.  
*Cymodopsis torminosa*
- D45** (8 May 1963) 50°49.9'S, 166°05.0'E to 50°49.35'S, 166°05.2'E. DCMB.  
Muddy shelly fine sand with *Nectocarcinus* and odd *Tawera* valves. Depth 22 m.  
50°48.7'S, 166°05.35'E to 50°49.3'S, 166°05.38'E. TAM.
- Mass of seaweed around the wire and shackle. Tubular sponges. Depth 22 m.  
*Cymodoce australis*
- D52** (9 May 1963) 50°40.09'S, 166°13.4'E. DCMB.  
Muddy medium fine sand, much dead shell. Depth 68 m.  
50°41.85'S, 166°14.75'E. TAM.  
Broken and encrusted shell, sponges, hydroids, red algae, ascidians, alcyonarians, etc. Depth 73 m.  
*Cymodoce allegra*, *Exosphaeroma gigas*

- D53** (9 May 1963) 50°41.6'S, 166°24'E. DCMB.  
Mass of sponges with encrusted flat rocks, shell fragments, bryozoa. Depth 81 m.  
*Cymodoce allegra*, *Exosphaeroma gigas*
- D54** (9 May 1963) 50°43.8'S, 166°15.1'E. DCMB.  
Muddy shelly fine grey sand with molluscan valves and fragments. Depth 99 m.  
50°43.8'S, 166°15.1'E to 50°43.9'S, 166°17.1'E.  
TAM.  
*Nectocarcinus*, galatheids, brown algae, amphipods, sponges. Depth 97 m.  
*Cymodoce perversa*, *Exosphaeroma gigas*
- D57** (9 May 1963) 50°36.7'S, 166°15.7'E. to 50°36.5'S, 166°15.9'E. DCMB.  
Broken shell and red algae, spider crabs, etc. Depth 44 m.  
*Cymodoce australis*
- D60** (9 May 1963) 50°36.1'S, 166°15.3'E. TAM.  
Mass of dead encrusted shell and small sponges, etc. Depth 49 m.  
*Cymodoce allegra*, *Exosphaeroma gigas*
- D65** (10 May 1963) 50°32.6'S, 166°13.3'E. TAS.  
Great mass of red algae and fine sand, etc. Depth 20 m.  
DCMB. Fine sand with fine shell fragments. Depth 20 m.  
*Cymodoce allegra*, *C. australis*, *Exosphaeroma gigas*
- D71** (11 May 1963) 50°30.8'S, 166°21.1-5'E. DCMB.  
Boulders heavily encrusted with red algae etc. Depth 46 m.  
50°31.1'S, 166°21.6'E to 50°30.8'S, 166°21.8'E.  
TAM.  
Net torn on rough bottom, mass of red algae and some sponge. Depth 44 m.  
*Cymodoce allegra*, *Exosphaeroma gigas*
- D83** (13 May 1963) 49°53'S, 167°09'E. DCMB.  
Brachiopods, sponges, bryozoans, bright yellow 'tentacled' sponges, fragmentary dead shell and echinoids. Depth 150 m.  
TAM. Mass of many spp. of sponges (including yellow 'tentacled'), etc. Depth 150 m.  
*Cymodoce perversa*
- D127** (7 Jan. 1964) 46°42'S, 168°17.3'E. DCMB.  
Dead shell, brittle stars, many dead oysters, some live. Depth 29 m.  
TAM. Shell sand with echinoderms, sponges, etc. Small live oysters common. Depth 29 m.  
*Cilicsea caniculata*
- D132** (12 Jan. 1964) 48°06.0'S, 167°36.5'E. DCMB.  
Bryozoan sand with echinoderm, mollusc, and brachiopod fragments. Depth 134 m.  
TAM. Bryozoan slabs and cobbles with sponges and hydroids. Anemones and coarse broken shell, etc. Depth 134 m.  
*Cilicsea caniculata*, *Cymodoce allegra*, *Exosphaeroma gigas*
- D134** (12 Jan. 1964) 48°16'S, 168°45.3'E. DCMB.  
A few small rocks, barnacles, echinoids. Depth 677 m.  
DCMB. Fine sand, pebbles, molluscs, fossils. Depth 677 m.  
TAM. Rat-tail fish, gastropods, hermit crabs, cidarids, asteroids, holothurian. Depth 677 m.  
*Cymodopsis impudica*
- D144** (14 Jan. 1964) 48°31'S, 167°17'E. DCMB.  
Bryozoan sand with shells. Depth 132 m.  
TAM. Bryozoan sand with starfish. Depth 132 m.  
*Cilicsea caniculata*
- D148** (14 Jan. 1964) 49°48'S, 167°02.5'E. DCMB.  
Coarse shell sand, some brachiopods, small molluscs. Depth 146 m.  
TAM. Mass of flat-lying gelatinous sponge. Depth 145 m.  
*Cymodoce australis*
- D176** (21 Jan. 1964) 51°06'S, 167°48.5'E. DCMB.  
Medium shelly sand with cobbles and pebbles, worms, molluscs, brachiopods. Depth 582 m.  
TAM. Rocks, etc. Depth 582 m.  
*Cymodoce australis*
- D179** (22 Jan. 1964) 51°25.5'S, 167°21'E. DCMB.  
Globigerina ooze. Depth 611 m.  
TAM. Mainly *Pyrosoma*, etc. Depth 629 m.  
*Cymodoce australis*
- D182** (22 Jan. 1964) Auckland Is, Carnley Harbour. DCMB.  
Dark brown mud. Depth 64 m.  
TAM. Trawl full of cockles and mussels. *Munida* and *Nectocarcinus* in vast numbers. Depth 64 m.  
*Cymodoce australis*
- D185** (22 Jan. 1964) Auckland Is, Carnley Harbour. DCMB.  
Sponge, etc., no mud. Depth 64 m.  
TAM. Sponge. Depth 64 m.  
*Cymodoce australis*
- D186** (22 Jan. 1964) Auckland Is, Camp Cove, Carnley Harbour. Shore collection. Intertidal.  
*Exosphaeroma obtusum*
- D188** (22 Jan. 1964) Auckland Is, Figure of Eight I., Carnley Harbour. Shore collection. Intertidal.  
*Exosphaeroma obtusum*
- D190** (22 Jan. 1964) Auckland Is, Masked I., Carnley Harbour. Shore collection. Intertidal, habitat ranging from rocky to stones bedded in fine gravel.  
*Exosphaeroma obtusum*, *Pseudosphaeroma campbellensis*
- D191** (22 Jan. 1964) Auckland Is., Adams I., Carnley Harbour. Shore collection.  
From rocks at water's edge to NW of boat shed. Intertidal.  
*Exosphaeroma obtusum*
- D194** (22 Jan. 1964) 50°44'S, 166°21'E. DCMB.  
Coarse shell and bryozoan debris. Depth 95 m.  
TAM. Mass of shell and bryozoans, sponge, brachiopods, etc. Depth 75 m.  
*Cymodoce australis*
- D211** (26 Jan. 1964) 48°53'S, 172°17.5'E. DCMB.  
Globigerina ooze and salps. Depth 519 m.  
TAM. Rich haul, many species. Depth 519 m.  
*Cymodoce australis*
- D595** (29 Jan. 1967) Chatham Is. Shore collection from between Durham Pt and Waitangi Wharf between high and low tide marks.  
*Exosphaeroma chilensis*
- E105** (11 Oct. 1964) 43°58.6'S, 176°37'W. Shore collections.  
Intertidal rock platforms south of Cape Wishart, near Heaphy Shoal, Chatham Is.  
*Amphoroidea media*, *Dynamenopsis varicolor*
- E132** (16 Oct. 1964) 44°16.2'S, 176°14.2'W. Waihere Bay, Pitt I. Shore collections.  
*Isocladus armatus*
- E161** (19 Oct. 1964) 43°57.1'S, 176°33.2'W. Waitangi. Chatham Is. Shore collections from intertidal rocks to south of Waitangi Wharf.  
*Exosphaeroma chilensis*, *Isocladus armatus*



- E181** (19 Jan. 1965) 72°18.17'S, 179°16.52'E. Moubray Bay. DCMB. Rough stony bottom. Depth 44 m.  
*Cymodoce tubicauda*
- E182** (19 Jan. 1965) 72°18.17'S, 170°16.15'E. DCMB. Depth 37 m.  
*Cymodoce tubicauda*
- E186** (20 Jan. 1965) 72°17.07'S, 170°13.01'E. DCMB. Rock bottom with small pebbles. Depth 245–218 m.  
*Cymodoce tubicauda*
- E230** (24 Feb. 1965) 54°33.2'S, 158°56.7'E. Macquarie I., Sandy Bay. Shore collection. On tidal flats and reef at N end of bay.  
*Exosphaeroma gigas*
- E231** (25 Feb. 1965) 54°32.4'S, 158°54.1'E. Macquarie I., Bauer Bay. Shore collection. Rocky reef with sandy patches.  
*Exosphaeroma gigas*
- E232** (26 Feb. 1965) 54°29'S, 158°58.2'E. Macquarie I., Garden Cove. Shore collections.  
*Exosphaeroma gigas*
- E262** (6 Apr. 1965) 34°35'S, 172°20'E. DD. Grey-green muddy fine sand. Depth 123 m.  
*Cymodoce egregia*
- E312** (10 Apr. 1965) 34°00'S, 171°47.5'E. DC. No sample in main dredge, bryozoan debris (coarse sand grade) in pipe attachment. Depth 119 m. DCMB. Bryozoan debris (very few molluscs), sponges, and corals with rock fragments. Depth 119 m.  
*Cilicæa dolorosa*
- E401** (7 Oct. 1965) 46°00'S, 171°12'E. TAM. Globigerina ooze and sand. Gastropods, octopus, pycnogonids, rat-tail. Depth 914–823 m.  
*Cymodopsis impudica*
- E416** (13 Oct. 1965) 45°21'S, 171°57'E. TM. Sandy globigerina ooze. Depth 1 225 m.  
*Cymodopsis impudica*, *C. torminosa*
- E417** (13 Oct. 1965) 45°12'S, 171°49'E. TM. Shelly sandy mud with forams. Depth 860 m.  
*Cymodopsis impudica*
- E422** (15 Oct. 1965) 44°15'S, 175°00'E. TAM. Fine sandy mud. Depth 615 m.  
*Cymodoce allegra*, *Exosphaeroma gigas*
- E433** (18 Oct. 1965) 43°43'S, 174°30'E. TAM. Muddy sand. Depth 571 m.  
*Cymodoce australis*
- E820** (23 Oct. 1967) 46°35'S, 165°58'E. TAM. Bryozoa, worm tubes, live and dead shell. Depth 270 m.  
*Cymodoce allegra*, *Exosphaeroma gigas*
- E834** (26 Oct. 1967) 46°54'S, 168°07.7'E. Stewart I., Halfmoon Bay. Shore collection.  
*Exosphaeroma obtusum*
- E948** (20 Oct. 1968) Whale Bay, Raglan. Shore collection. Intertidal. Exposed boulder shore—rock, stones, gravel, scrubby *Corallina officinalis*. Coll. K. P. Jansen.  
*Dynamenella condita*, *Pseudosphaeroma campbellensis*
- E949** (21 Oct. 1968) Bethell's Beach, N of Manukau Harbour. Shore collection. Intertidal. Exposed rocky shore, very steep. *Durvillea antarctica*, *Corallina*, dense mussel beds. Coll. K. P. Jansen.  
*Dynamenella cordiforaminalis*, *D. huttoni*, *Dynamenella* spp.
- E950** (21 Oct. 1968) Bethell's Beach. Shore collection. Intertidal. Sheltered sandy shore with pools. Coll. K. P. Jansen.  
*Isocladus armatus*, *Exosphaeroma obtusum*
- E951** (21 Oct. 1968) Bethell's Beach. Shore collection. Intertidal. Freshwater stream, rock to about mid-tide. *Ulva*, etc. Coll. K. P. Jansen.  
*Pseudosphaeroma campbellensis*
- E952** (22 Oct. 1968) Maunganui Bluff, N of Dargaville. Shore collection. Intertidal. Exposed boulder shore, sandy, dense mussel beds. Coll. K. P. Jansen.  
*Dynamenella huttoni*, *Dynamenoides decima*, *Isocladus reconditus*
- E953** (23 Oct. 1968) Ocean Beach, outside Whangarei Heads. Shore collection. Intertidal. Exposed rocky shore, thick mixed algal cover. Coll. K. P. Jansen.  
*Amphoroidea longipes*, *A. media*, *Dynamenella huttoni*, *Dynamenella* sp., *Dynamenopsis varicolor*, *Isocladus reconditus*, *Scutuloidea maculata*
- E954** (23 Oct. 1968) Urquhart's Beach, inside Whangarei Heads. Shore collection. Intertidal. Sheltered stony shore. Coll. K. P. Jansen.  
*Exosphaeroma obtusum*
- E955** (23 Oct. 1968) Inside Whangarei Heads. Shore collection. Intertidal. Extensive silt flats, scattered stones, fair fresh water runoff. Coll. K. P. Jansen.  
*Exosphaeroma planulum*
- E956** (24 Oct. 1968) Leigh. Shore collection. Intertidal. Moderately exposed, rock platform about mid-tide level falling to below low water level, weed sparse above, more abundant below. Coll. K. P. Jansen.  
*Amphoroidea longipes*, *A. media*, *Cassidinopsis admirabilis*, *Cilicæa dolorosa*, *Dynamenoides decima*, *D. vulcanata*, *Isocladus dulciculus*
- E957** (23 Oct. 1968) Leigh. Shore collection. Intertidal. Sand, stones, pools, upper littoral. Coll. K. P. Jansen.  
*Amphoroidea media*, *Cilicæa dolorosa*, *Dynamenella huttoni*, *Dynamenopsis varicolor*, *Isocladus armatus*, *I. dulciculus*
- E958** (25 Oct. 1968) Mount Maunganui. Shore collection. Intertidal. Moderately sheltered, stones, boulders in sandy pools. Coll. K. P. Jansen.  
*Isocladus armatus*, *I. reconditus*
- E959** (25 Oct. 1968) Mount Maunganui. Shore collection. Intertidal. Fairly exposed rocky shore, good mixed algal cover. Coll. K. P. Jansen.  
*Amphoroidea media*, *Cilicæa dolorosa*, *Cymodopsis montis*, *Dynamenella huttoni*, *Dynamenoides decima*, *Exosphaeroma obtusum*, *Isocladus reconditus*, *I. dulciculus*, *Scutuloidea maculata*
- E960** (25 Oct. 1968) Mount Maunganui. Shore collection. Intertidal. Inside harbour, sheltered stony-sandy beach, about mid-tide level. Coll. K. P. Jansen.  
*Isocladus armatus*, *I. dulciculus*
- E961** (26 Oct. 1968) Mahia Beach, Mahia Peninsula. Shore collection. Intertidal. Sandy shore, flat sandstone outcropping, very exposed. Coll. K. P. Jansen.  
*Isocladus armatus*
- E962** (26 Oct. 1968) Mahia Beach, Mahia Peninsula. Shore collection. Intertidal. Rocky shore, flat, sparse algae, exposed. Coll. K. P. Jansen.  
*Isocladus armatus*