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Some Jellyfish from Macquarie Island and
Heard Island

By

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SOME JELLYFISH FROM MACQUARIE ISLAND
AND HEARD ISLAND.

by

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A ctenophore and some medusae belonging to three species were forwarded to me by the Australian National Antarctic Research Expedition. They were collected on the coasts of Macquarie Island and Heard Island, and as some of them present certain points of systematical and zoogeographic interest, I have found it worth while to publish a short note on them. Both islands are in the neighbourhood of the Antarctic Convergence, Macquarie Island a little north, Heard Island somewhat south of this zoogeographical line of demarcation, where the antarctic surface water sinks below the warmer and lighter subantarctic water.

MACQUARIE ISLAND

Beroë cucumis Fabricius.

One very large specimen, about 18 cm. in length, was taken on 20 October, 1951 in Hasselborough Bay, 1000 yards offshore in the vicinity of Anchor Rock. In morphological respect it does not differ from the typical appearance of this cosmopolitan species, but the collector has given the following information of the colour of the living specimen: "This specimen, when taken from the water, was a bright pink. As I handled it into the large jar my hands became covered with a bright red fluid". I have seen many similar specimens in the waters west of Greenland (Kramp 1942), where specimens with the usual pale pinkish or lilac hue were frequently taken together with others, in which the colour was more or less intensely red, sometimes even a deep claret red. I found that the colour was independent of the depth in which the specimens had been caught, whereas a correlation to the temperature of the water was indicated, the claret-red specimens being particularly met with in the coldest tracts.

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Periphylla periphylla (Péron & Lesueur).

One large specimen was found washed up on the beach near the Isthmus on 31 July, 1951. It was dead and badly damaged, but the determination is beyond doubt.

On a previous occasion I have discussed the specific name of this medusa, which is generally referred to as *Periphylla hyacinthina* with Steenstrup (1837) as the author; this name was, however, never published by Steenstrup, but was only written on the labels of the specimens

and in the hand-written catalogue of the Zoological Museum of Copenhagen until it appeared in print for the first time in Haeckel's monograph in 1880. I found that the species had been described by Péron and Lesueur in 1809 as *Carybdea periphylla*, and I decided to accept this specific name.

Periphylla periphylla has an almost cosmopolitan distribution in the deep parts of all the oceans, except in the Arctic. It is mainly bathypelagic, but in the colder areas it may be met with in the upper strata. It is quite common in the subantarctic region and has occasionally been found in the immediate neighbourhood of the Antarctic Continent, so that it is not astonishing to find it at Macquarie Island.

HEARD ISLAND

Cosmetirella davis (Browne).

Tiaropsis davis Browne 1902 p. 281.

Cosmetirella simplex Browne 1910 p. 34, Pl. 1 figs. 6-8.

Phialella falklandica Vanhöffen 1911 p. 223, Pl. 22 fig. 10.

Cosmetirella kerguelensis + *simplex* Vanhöffen 1912 p. 368, Pl. 24 fig. 6.

Cosmetirella davis Kramp 1932 p. 359, text figs. 4, 34, 46.

Cosmetirella davis Browne & Kramp 1939 p. 293, Pl. 17 fig. 1.

Cosmetirella davis Kramp 1949 p. 3.

This leptomedusa was taken in surface hauls near Heard Island during January-April, 1951 at temperatures between 3° and 1° C. Three specimens were given to me by E. H. M. Ealey, A.N.A.R.E. biologist. They are all females and have the following dimensions:

diam. of umbrella 15 mm., length of gonads 4 mm., 64 fully developed and 21 young tentacles.

diam. of umbrella 15 mm., length of gonads 4 mm., about same number of tentacles, part of margin lacking.

diam. of umbrella 17 mm., length of gonads 5 mm., almost all tentacles lacking.

In previous papers, quoted above, I have found that specimens of this medusa taken in subantarctic regions generally attain a larger number of tentacles than specimens of corresponding sizes from true antarctic areas. In this respect the present specimens apparently agree with those from subantarctic regions.

This species has been recorded from several localities in the antarctic and subantarctic regions and seems to have a circumpolar distribution (See Map, fig. 2, in Kramp 1949).

Desmonema chierchiana Vanhöffen.

Desmonema chierchiana Vanhöffen 1888 p. 18, Pl. I fig. 4.

Desmonema chierchiana Vanhöffen 1908 p. 41, Pl. II figs. 2, 3, text figs. 5-9.

Desmonema chierchiana Browne 1908 p. 244.

Desmonema chierchiana Stiasny 1934 p. 390, text fig. 11.

Desmonema chierchiana Stiasny & van der Maaden 1943 pp. 260-264.

This large and beautiful medusa was repeatedly washed ashore on the beach of Heard Island. The specimens examined by me were taken on the following dates: 5 August, 1949, 4 specimens, diameter about 20-22 cm.; 4 September, 1951, one specimen, diam. 35 cm.; 1951 (date not given), one specimen, diam. about 25 cm.; 29 January, 1952, one specimen, diam. 33 cm.

Moreover one specimen, 23 cm. wide, was taken with a dip-net on 30 December, 1951 in Perseverance Harbour, Campbell Island, by the Danish "Galathea" Expedition.

One other species of *Desmonema* has been described, *D. gaudichaudi* (Lesson), which is very common in antarctic regions. It has been doubted whether the two species can be kept apart. Mayer (1910 p. 593) was inclined to think that they were only varieties of one species. Browne, who has seen both of them (1908 p. 242, 1910 p. 49), came to the conclusion that they are distinct species. Stiasny (1934) is likewise inclined to keep them separate. The question was further discussed by Stiasny and van der Maaden (1943), who called attention to some incongruities in Vanhöffen's descriptions of the two species and emphasized the following distinguishing characters: *D. chierchiana* has many long and thin tentacles in each of the eight bundles, and they are placed in several rows; the canals in the marginal lappets are numerous, narrow, and bilaterally branched; *D. gaudichaudi* has few tentacles (5-6 in each bundle), very thick and placed in one row; the canals are few and broad, the lateral ones in each lappet unilaterally branched.

The present specimens decidedly belong to *D. chierchiana*. Specimens which are sufficiently preserved to allow an examination, show a number of canals in each marginal lappet of about 15, and they are branched in accordance with the descriptions and figures given by Browne and Stiasny. In most of the specimens the tentacles could not be counted; in one of them, 33 cm. wide, some of the octants have only 9-10 tentacles, but several tentacles evidently have been broken off, and in one or two octants a larger number has been retained. A specimen 22 cm. wide has about 24 tentacles in each octant, and in the largest specimen, 35 cm. wide, the number amounts to 30-35 per octant. In the specimen from Campbell Island most of the tentacles are lost.

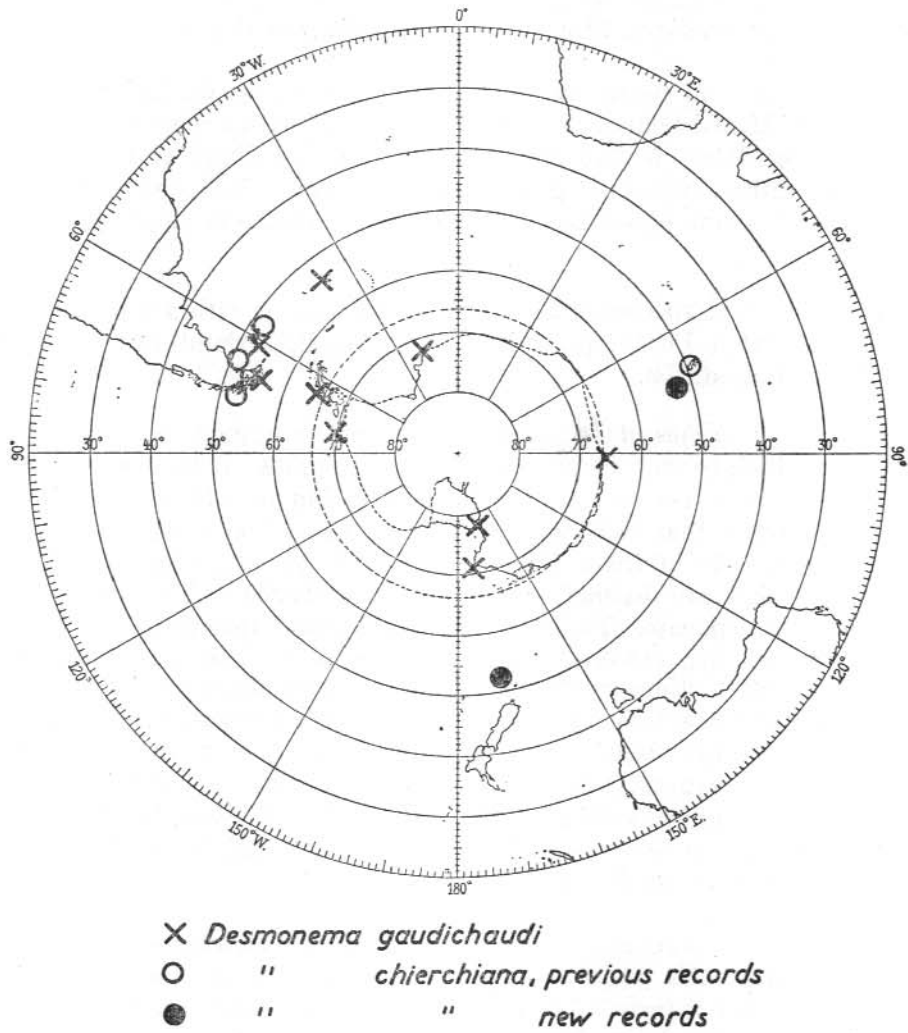


Fig. 1.—Distribution of *Desmonema gaudichaudi* and *Desmonema chierchiana*

In one respect I do not agree with Stiasny. The tentacles are not placed in several rows! In the two specimens in which the tentacles are retained, it is distinctly seen that they are placed in one row only, large and small ones approximately alternating, and owing to lack of space they become more or less displaced in a zigzag-like manner which may give the impression that they issue in more than one row.

Since none of these specimens show any sign of transition to the characteristics of *D. gaudichaudi*, it may be justifiable to say that this species is distinct from *D. chierchiana*.

According to Browne (1910) *Desmonema gaudichaudi* is an antarctic species occurring south of 60° S., whereas *D. chierchiana* is subantarctic, occurring north of 60° S. The accompanying map (fig. 1) shows the distribution of both species. They occur together in the surroundings of Tierra del Fuego and the Falkland Islands. *D. gaudichaudi* has also been found at South Georgia and in several localities in close vicinity to the Antarctic Continent.

D. chierchiana has never been found in the Antarctic proper. It is true that it was recorded from the "Gauss-Station", 66° S. 89° E., by Vanhöffen (1908), but the specimens found there were juvenile stages which may as well have belonged to the other species. Heard Island is not a new locality for *D. chierchiana*, as it was recorded from there and from Kerguelen Island by Vanhöffen (1908). Campbell Island, where it was taken by the "Galathea", is, however, far removed from the localities known up to now, and the record from here indicates that this species has a circumpolar distribution within the subantarctic belt. It is a decidedly neritic species. It has been taken at very different seasons: April (Stiasny 1934), June and August (Vanhöffen 1908), November (Vanhöffen 1888), January (Browne 1908), August, September, December and January (the present specimens).

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