

ON THE SCYPHOMEDUSA *PORALIA* *RUFESCENS* VANHÖFFEN

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(Plate I and Text-figs. 1 and 2)

Vanhöffen (1902) described a new genus and species of scyphomedusa, *Poralia rufescens*, from one incomplete specimen. Subsequently ten specimens attributable to this species have been recorded (Bigelow, 1909, two; Vanhöffen, 1909, one; Broch, 1913, one; Bigelow, 1938, three; and Ranson, 1945, three). Not one of these specimens was complete.

In a series of deep horizontal hauls made with a 2 m stramin closing net on R.R.S. 'Discovery II' I have found twenty-four specimens. All the specimens were caught in the area $37^{\circ} 28' - 38^{\circ} 00' N.$, $11^{\circ} 59' - 13^{\circ} 46' W.$, in August and September 1959.

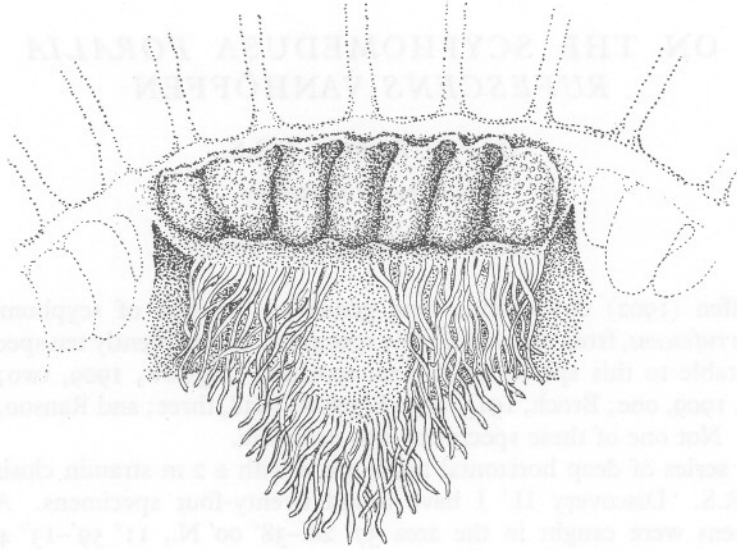
All the specimens were imperfect, but fifteen of them were sufficiently complete to give definite information on certain characters, such as numbers of mouth-lips, of radial canals, and of gonads. Owing to their fragmented state and the fact that in none of them were the margins complete, it is only possible to give approximate overall dimensions.

The information available is given in Table 1, and for comparison the few data available in the literature are given in Table 2. Although, admittedly, some of the data given in Table 1 are uncertain, owing to the possibility that fragments are missing from some specimens, the results are nevertheless consistent.

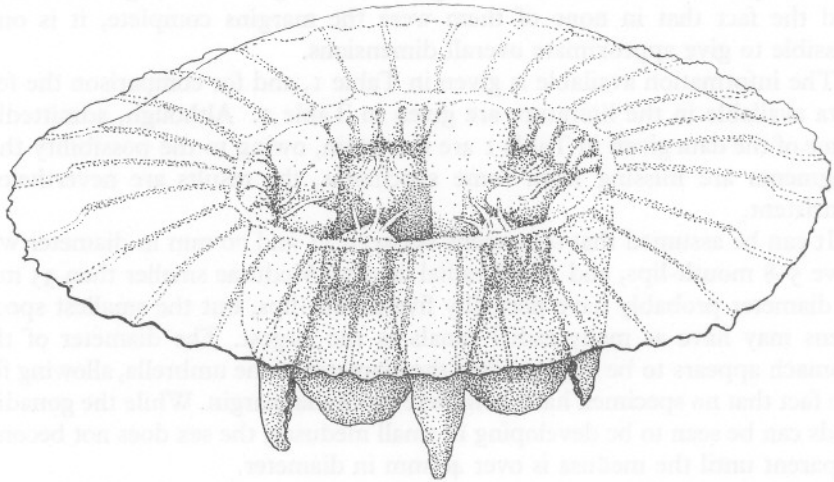
It can be assumed that specimens between 11 and 70 mm in diameter will have 5-8 mouth-lips, and 20-38 radial canals. Medusae smaller than 35 mm in diameter probably have normally five mouth-lips, but the smallest specimens may have as many radial canals as the largest. The diameter of the stomach appears to be less than half the diameter of the umbrella, allowing for the fact that no specimen has a complete umbrella margin. While the gonadial folds can be seen to be developing in small medusae, the sex does not become apparent until the medusa is over 40 mm in diameter.

If these conclusions are compared with the data given in Table 2 there appears to be complete agreement, except for the one very large specimen recorded by Bigelow (1909), which had 18-19 mouth-lips. If the latter is the same species it indicates continued increase in the number of mouth-lips as the medusa grows, but not of the number of radial canals.

The jelly of the umbrella thins out suddenly about half-way towards the



Text-fig. 1. *Poralia rufescens*; gonad of male specimen about 70 mm in diameter, showing protrusion of stomach wall and gastric cirri.



Text-fig. 2. *Poralia rufescens*; reconstructed drawing of typical five-lipped specimen. Only one or two gastric cirri are indicated. The entire margin of the umbrella is missing ($\times ca. 2.0$).

margin of the umbrella. This appears to be a weak point at which the umbrella may easily break and would account for the lack of entire margins in preserved specimens (Pl. I). In no specimens could I find rhopalia, owing to the damaged margins. The mesogloea contains numerous large cells as Ranson (1945) has already described. The colour is the reddish brown typical of deep-sea medusae.

In the gonads of the two females there were a few white eggs, the largest being 1 mm in diameter. Each gonad is a continuous ribbon thrown into folds by a series of alternating depressions and protrusions in the wall of the stomach (Text-fig. 1). In the region of the gonad the stomach wall is thin, but it becomes thick and gelatinous a little below the gonads and is then nearly as thick as the gelatinous mouth-lips but not so firm in consistency. Immediately below each gonad the stomach wall protrudes into the stomach cavity to form a deep triangular pocket, and it is on the internal surfaces of these protrusions that the gastric cirri are set (Text-figs. 1 and 2). Seen from the exumbrella side the stomach is clearly pentagonal in shape in specimens with five mouth-lips.

Tables 1 and 2 show that *Poralia rufescens* is a true deep-sea species, whose normal habitat is evidently below 1500 m.

My thanks are due to Mr P. Pring for taking the photographs reproduced in Plate 1.

SUMMARY

A number of damaged specimens of the scyphomedusa *Poralia rufescens* Vanhöffen from the north Atlantic have been examined. This has added to our knowledge of this rare medusa, of which only eleven damaged specimens had previously been recorded.

Most of the specimens were caught deeper than 1500 m.

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TABLE 1. *PORALIA RUFESCENS* COLLECTED ON R.R.S. 'DISCOVERY II', AUGUST AND SEPTEMBER 1959

| Dia- meter of umbrella (mm) | Dia- meter of stomach (mm) | Num- ber of mouth- lips | Num- ber of radial canals | Sex | Maxi- mum number of large gonadial folds | Station number | Depth (m) |
|---|--|-------------------------------------|---------------------------------------|-----|--|-------------------|--------------|
| 11 | — | ? 5 | 28 | — | — | 4246 | 1770 |
| 11 | — | — | 38 | — | — | 4246 | 1810 |
| — | 6 | 5 | — | — | — | 4246 | 1770 |
| 12 | 6 | ? 4 | ? 25 | — | — | 4254 | 1680 |
| 15 | 10 | ? 5 | 30 | — | — | 4246 | 1770 |
| 22 | 12 | — | 20 | — | — | 4232 | 1600 |
| 24 | 12 | 5 | 20 | — | — | 4232 | 1600 |
| — | 15 | — | ? 30 | — | — | 4254 | 1370 |
| 33 | 16 | 5 | 32 | — | — | 4254 | 1680 |
| 40 | — | ? 6-8 | ? 29 | — | — | 4232 | 1200 |
| — | 25 | 8 | — | — | — | 4246 | 950 |
| 55 | 27 | 5 | 24 | ♀ | 4 | 4246 | 1810 |
| 60 | 30 | 6 | — | — | — | 4254 | 1680 |
| 70 | — | ? 6 | ? 32 | ♂ | 4 | 4232 | 1600 |
| 70 | 35 | 5 | 29 | ♂ | 8 | 4254 | 1600 |

TABLE 2. PREVIOUS RECORDS OF *PORALIA RUFESCENS*

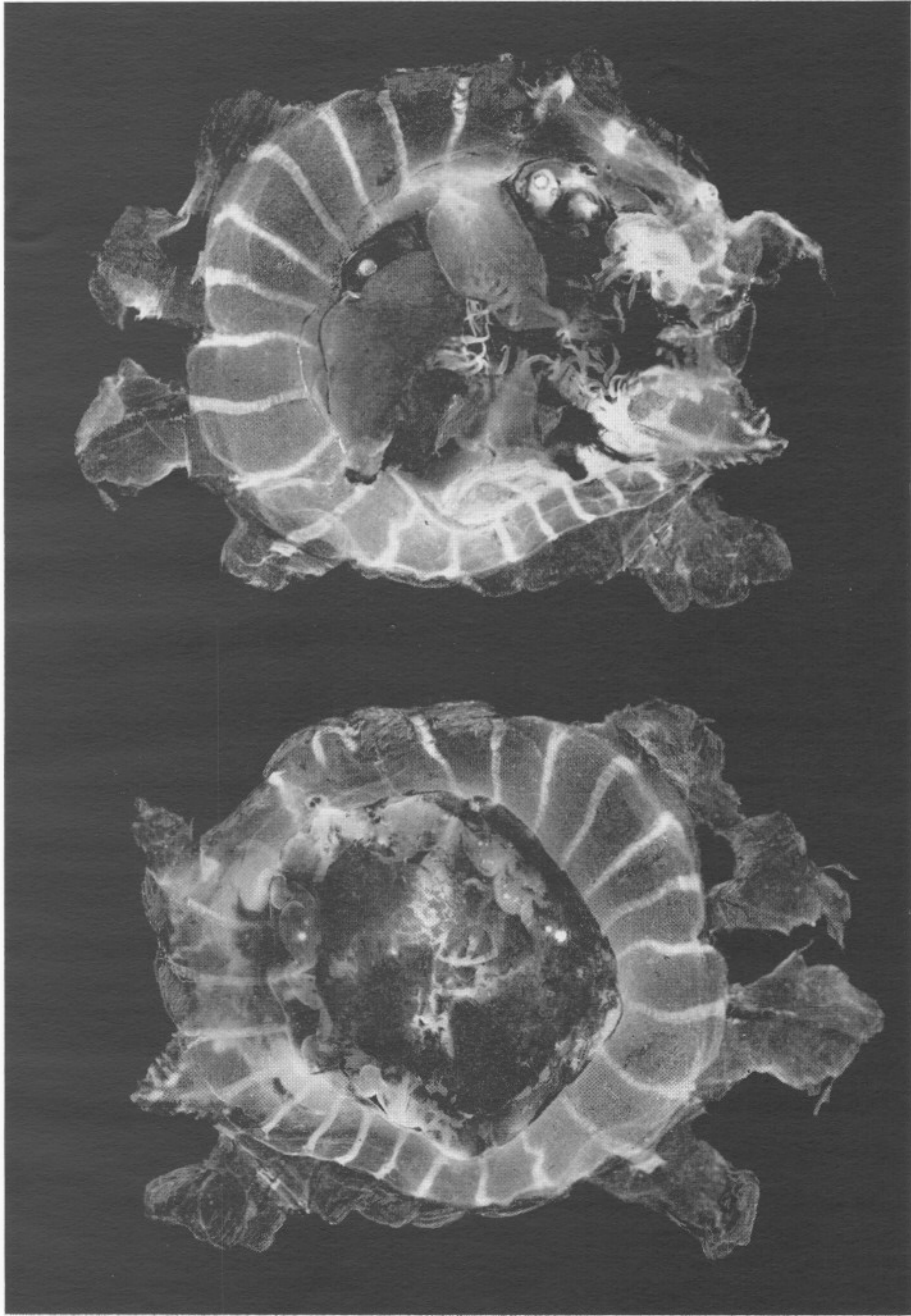
| | | | | | | | |
|---------|----------|-------|------|---|---|------------------|-------------|
| 40 × 67 | 20 × 33* | 7 | ? 21 | — | 3 | Vanhöffen (1902) | 1100v. |
| 250 | 105* | 18-19 | 41 | — | — | Bigelow (1909) | 3658v. |
| 75 | — | ? 8 | ? 40 | — | — | Bigelow (1909) | 549v. |
| — | — | — | 32 | — | — | Broch (1913) | 1100-2000c. |
| — | 30 | — | 40 | — | — | Bigelow (1938) | 1646 |
| — | 35 | 5 | 30 | ♀ | 6 | Bigelow (1938) | 1829 |
| — | 18 | 5 | 38 | — | — | Bigelow (1938) | 1463 |
| 25-30 | — | 5 | — | — | — | Ranson (1945) | 2000v. |
| — | 35 | — | — | — | — | Ranson (1945) | 2000v. |

* Measured from original illustrations.

v., vertical haul; c., closing vertical haul.

EXPLANATION OF PLATE I

Poralia rufescens; photographs of female specimen 55 mm in diameter (Discovery St. 4246). *Above*: subumbrellar side showing five mouth-lips and large eggs in gonads; *below*, exumbrellar side; much of the outer periphery of the umbrella has broken away at the point where the jelly becomes thinner. (Enlarged × ca. 1.75.)



(Facing p. 390)