

Siphonophora of Scottish National Antarctic Expedition. 17

Family VELELLIDÆ, Brandt, 1835.

Genus *Velella*, Lamarck, 1816.

Velella velella, Linnæus, 1758.

Velella spirans (Forskål, 1775).

In accordance with the strict application of the rules of priority, *V. velella* seems to be the correct name of this species. Specimens were obtained at Station 51 (1° 27' N., 27° 56' W., temp. 80·1°, Dec. 8th, 1902), and at Station 53 (0° 55' N., 29° 22' W., temp. 79·8°, Dec. 10th, 1902). One well-preserved specimen is unlabelled, but has possibly been caught at Station 52 (1° 22' N., 28° 10' W., temp. 80°, Dec. 9th, 1902). According to the Zoological Log¹ *Velellæ* were also seen during the voyage at—

Stat. 61. 3° 38' S. 33° 20' W. Temp. 79° Dec. 13th, 1902.

Stat. 95. 32° 15' S. 47° 30' W. Temp. 74·9° Dec. 27th, 1902.

Stat. 360. 40° 59' S. 55° 04' W. Temp. 61·6° Jan. 25th, 1904.

Stat. 362. 43° 33' S. 55° 07' W. Temp. 60° Jan. 27th, 1904.

If the specimens are regarded from their longer side, the sail or crest runs from N.E. to S.W., as Agassiz found to be invariably the case in hundreds of *Velellæ* which he observed. Out of seventy-seven specimens examined by Chun,² seventy-one were of the type described, but in six the crest ran from S.E. to N.W. Lens and van Riemsdijk³ state that in all five specimens of *V. pacifica*, collected by the Siboga expedition, the direction of the crests was S.E. to N.W.

The three *Velellæ* from the "Scotia," Station 51, were partly macerated; they measure respectively 42, 66 and 68 mm. in length, 16, 26 and 36 mm. in breadth, and the crest is 16, 29 and 23 mm. in height. Nine specimens, all of which are macerated, so as to leave only the chitinous⁴ supporting substance, were taken at Station 53. The average dimensions of the "Scotia" *Velellæ* are, approximately, length 54 mm., breadth 20 mm., and height of crest 20 mm. On four of the specimens from St Paul Rocks, numerous white spiral coils, measuring from 2 to 9 mm. in diameter and being of a beady appearance, were observed. A microscopic examination showed them to be segmented eggs, probably those of a gastropod. As regards the distribution of the genus *Velella* in the Atlantic, the Flannan

¹ Scott, *Nat. Antarc. Exped.*, "Sci. Results Voyage 'Scotia,'" vol. iv., pt. i. (1908).

² C. Chun, *Die Siphonophoren der Plankton-Expedition*, Kiel and Leipzig (1897).

³ A. D. Lens and T. van Riemsdijk, *The Siphonophora of the Siboga Expedition*, Leiden (1908).

⁴ M. Henze, "Notiz über die chemische Zusammensetzung der Gerüstsubstanz von *Velella spirans*," *Hoppe Seyler's Zs. physiol. Chemie.*, L.V. (1908).

Isles (W. E. Clarke) and lat. $43^{\circ} 33' S.$ (Bruce) seem to be the present known northern and southern limits.

Family **PHYSALIDÆ**, Brandt, 1835.

Genus *Physalia*, Lamarek, 1816.

Physalia arethusa, Browne, 1756.

Chun¹ distinguishes only two species of *Physalia*, the Atlantic-Mediterranean *P. arethusa* and the Indo-Pacific *P. utriculus*, since the



FIG. 1.

numerous species previously described have either been discovered to be young specimens or slight local variations. Specimens were collected at the following stations:—

Stat.	30.	$11^{\circ} 15' N.$	$25^{\circ} 20' W.$	Temp. 79°	Dec. 4th, 1902.
Stat.	81.	$18^{\circ} 24' S.$	$37^{\circ} 58' W.$	Temp. 79.9°	Dec. 20th, 1902.
Stat.	478.	Table Bay.			May 1904.
Stat.	527.	$11^{\circ} 32' N.$	$20^{\circ} 30' W.$	Temp. 78.1°	June 19th, 1904.

¹ C. Chun, *Die Siphonophoren der Plankton-Expedition*, Kiel und Leipzig (1897).

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The occurrence of Physaliæ has been recorded in the Zoological Log at Stations 42, 53, 57, 60, 72, 78, 82, 83, 95, 97, 508, 509, 525, 529, 530 and 531.

The five young Physaliæ taken in the tow-net at Station 30 have well developed pneumatophores 3, 3·5, 4, 6 and 12 mm. in length respectively, that of the largest specimen exhibiting a comparatively large polythalamic



FIG. 2.

crest. Although not well preserved, several small siphons and a larger central one could be distinguished. The two specimens from Station 81 are very well preserved. The length of their pneumatophores measures roughly 9 and 10·5 cm., the breadth 4 and 4 cm., and the thickness, including crest, 5 and 4·5 cm. respectively. The crest and cormidia are well developed. Each specimen has about ten tentacles, the longest of which is in one case 30 cm., and in the other 24 cm. The example recorded from Table Bay (Station 478) is not in a very good state of preservation, the remnants

only of a few tentacles being present. The pneumatophore is 8 cm. long; the gastrozooids and gonozooids, though well developed, are much shrunk. The three well-preserved specimens from Station 527 differ from those of Station 81, in having one tentacle more highly developed than the others.

A faint tinge of pink is still noticeable in parts of their pneumatophores



FIG. 3.

and in some of the zooids. A coloured sketch of a *Physalia*, which was caught at Station 78, was made at the time and shows the edge of the crest as being of a delicate pink, whereas the aboral pole of the pneumatophore, the zooids and the tentacles, are depicted as being of a vivid dark blue. The three photographs show the turning over on its side of a *Physalia*, which thereby presents a smaller surface to the wind.

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Family DIPHYIDÆ, Eschscholtz, 1829.

Apart from a few not identifiable pieces of jelly, altogether eight nectophores of Diphyids, ranging from 24 to 40 mm. in length, were taken by the trawl (2300 f. to surface), at—

Stat.	53.	St Paul Rocks.	Temp. 79°	Dec. 10th, 1902.
Stat.	286.	68° 11' S. 34° 17' W.	Temp. 29°	March 5th, 1903.
Stat.	396.	67° 53' S. 27° 20' W.	Temp. 29·2°	Feb. 29th, 1904.
Stat.	416.	71° 22' S. 18° 15' W.	Temp. 29·6°	March 17th, 1904.
Stat.	450.	48° 00' S. 9° 50' W.	Temp. 40°	April 12th, 1904.

Three Eudoxiæ must be mentioned here, two from Station 396, and one from Station 450. The unsatisfactory state of their preservation makes all but the reference to the above family possible as regards classification. Their habitat, however, is of interest, as extending the range from which they have previously been recorded. The discovery of Diphyids as far south as 71° 22' corresponds to their occurrence in Arctic seas.

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