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SIPHONOPHORA COLLECTED BY THE R. V. 'GASCOYNE' AND R. V. 'DIAMANTINA' ALONG 110°E OFF THE AUSTRALIAN COAST DURING 1962-1963*

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ABSTRACT

The Siphonophora collected during the seasonal biological cruises of the R. V. 'Gascoyne' and R. V. 'Diamantina' during 1962–1963 have been studied in detail from samples taken from 227 stations with Indian Ocean Standard net by vertical haul (200-0 m) and Clarke Bumpus Sampler by oblique haul (0-200-0 m). 56 species are encountered in this region and their latitudinal and diurnal distribution pattern in the different seasons are presented.

Lensia panikkari Daniel previously recorded from Vityaz Stn. No. V. 5193 (Lat. 32°48′S & Long. 103°58′E) taken from 1000–0 m using an Ichthyological Net on 17–8–1962 has now been recorded at 'Diamantina' Stn. Dm 3/63 No. 95 (Lat. 24°30′S & Long. 110°E) from a depth of 200-0 m during July - August 1962. *Frillagalma vityazi* Daniel, 1966, known from nectophores collected by the R. V. 'Vityaz' is now recorded from Dm 3/63 Stn. No. 97 (Lat. 21°30′S & 110°E) together with bracts. Of the rest, 23 species are rare occurring only at one to ten stations; while nine species are very common occurring at more than 100 stations.

INTRODUCTION

THE SIPHONOPHORA collected during the seasonal biological cruises of the R. V. 'Gascoyne' and R. V. 'Diamantina' during 1962-1963 sent by C. S. I. R. O. Australia were studied from 227 samples taken at 221 stations established along 110°E longitude between 9°S latitude and 32°S latitude. These samples included 190 samples collected by the I O S net from 200-0 m and 37 samples collected by Clarke-Bumpus Sampler from 0-200-0 m. Sub-sampling of the I O S N samples was done by using a modified Kott sub-sampler (Kott, 1953) at Cronulla and also by using a Folsom splitter (Mckewan *et al.*, 1954), at I. O. B. C., Cochin.

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OBSERVATIONS

This study yielded 15,332 examples of 56 species (colonies, polygastric & eudoxid phases and loose nectophores, bracts, gonophores, palpons, etc) of Siphonophora. Of these *Lensia panikkari* Daniel (1971) previously recorded from R. V. 'Vityaz' Stn. V. 5193 (Lat. 32°48′5″ & Long. 103°58′E) taken from 1000-0 m using an Ichthyo-

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TABLE 1 (Contd.)

Species	Season	Intensity of occurrence
Sulculeolaria angusta Totton (21 Stns)	all months	common during May, rarely represented in other months.
Diphyes chamissonis Huxley (21 Stns)	Mar., Apr., May, July, Aug., Sept., Oct., Nov.	common near neritic zone; rare in Oct. - Nov. absent in Jan. - Feb.
IV. 10 – 20 STATIONS		
Sulculeolaria monoica (Chun) (19 Stns)	Jan- Feb; Mar- Apr; May, July-Aug. Sept.	abundant during Mar. - Apr. Absent during Oct. Nov.
Lensia subtiloides (Lens & van Riemsdijk) (17 Stns)	Mar.- Apr; May; July-Aug., Sept; Oct. - Nov.	Common near neritic zone; rare in Oct. - Nov., absent in Jan.-Feb.
Physophora hydrostatica Forsskål (16 Stns)	all months	abundant during Aug.-Sept.
Halistemma rubrum (Vogt) (12 Stns)	Aug. – Sept; Oct. - Nov; Jan. Feb; Mar.- April; July-Aug.	absent in May.
Sulculeolaria quadrivalvis Blainville (11 Stns)	Mar.-Apr.; May; July-Aug.-Sept.	1or 2 ex. in each of the month
Rhizophysa Sp. (10 Stns)	Aug. - Sept.; Oct-Nov; Mar.- Apr.; July-Aug.; Sept.	Oct. Nov. (3 colonies)
V. 1 –10 STATIONS		
Athorybia rosacea (Forsskål) (9 Stns)	Mar. - April; August, Oct.–Nov.	abundant during Mar. - Apr. absent at other months.
Rosacea Sp. (9 Stns)	Jan.-Feb.; May; July-Aug.-Sept.	Rare
Nanomia bijuga (Della Chiaje) (8 Stns)	July- Sept.	absent during other months.
Sulculeolaria biloba (Sars) (7 Stns)	all months	1 or 2 ex. in each month.
S. bigelowi (Sears) (7 Stns)	Mar. - Apr. May; Aug. Sept.	Prefers Mar.-May. absent during Oct.,- Feb.
Ceratocymba dentata (Bigelow) (7 Stns)	Mar.-Apr.; May; Aug.– Sept.	Rare during these months absent at the others.
Abyla schmidti Sears (7 Stns)	July-Aug.-Sept.; Oct.- Nov.	common during Aug. -Sept.
Melophysa melo (Quoy & Gaimard) (5 Stns)	Mar.- Apr.; May; Aug. – Sept.	abundant during Mar.-Apr. absent at other months.
Forskalia sp. (4 Stns)	Jan.- Feb.; May; Oct. - Nov.	Rare. Mainly in Jan- Feb.
Vogtia pentacantha Kolliker (4 Stns)	Jan.-Feb.; Mar.-Apr. May; Aug.-Sept.	Rare (11 ex)
V. glabra Bigelow (3 Stns)	Jan.-Feb.; July-Aug.	Rare (4 ex)
Ceratocymba sagittata (Quoy & Gaimard) (3 Stns)	Mar.-Apr.; Sept.-Oct.	Rare (6 ex)
Frillagalma vityazi Daniel (2 Stns)	July-Aug.	4 nectophores 6 bracts.
Rosacea plicata Quoy & Gaimard (2 Stns)	July- Aug.-Sept.	2 ex.
Lensia conoidea (Kefferstein & Ehlers) (2 Stns)	Aug.- Sept.	3 ex.
L. meteori (Leloup) (2 Stns)	Aug.-Sept.	4 ex.
L. multicristata (Moser) (2 Stns)	Aug.	4 ex.
Sphaeronectes gracilis (Claus) (2 Stns)	Mar.- Apr.	2 ex.
Abyla haeckeli Lens & Van Riemsdijk (2 Stns)	Aug.; Oct., Nov.	2 ex.
Rhizophysa filiformis Forsskål (1 Stn)	July- Aug.	1 ex.
Halistemma amphitridis (Lesueur & Petit) (1 Stn)	Aug.- Sept.	2 ex.
Maresearsia praeclara Totton (1 Stn)	Mar.- Apr.	1 ex.
Rosacea cymbiformis (Delle Chiaje) (1 Stn)	Mar.- Apr.	1 ex.
Lensia panikkari Daniel (1 Stn)	July. - Aug.	1 ex.
Abyla bicarinata Moser (1 Stn)	Mar. - Apr.	1 ex.

REMARKS

An analysis of the occurrence of these 56 species reveals that nine species occur at hundred or more stations established during the different months of the year 1962–63 (except June and December). They occur during all the months in abundance forming the bulk of the siphonophore constituent of the plankton. The species listed under II and III and *Physophora hydrostatica* and *Sulculeolaria biloba* although present throughout the year occur in lesser number of stations and are comparatively fewer in the collections. Of the remaining 30 species, 17 occur only at one or two stations and are very rare. The rest of the species (13) are common during particular seasons of the year (Table 1).

Diphyes chamissonis and *Lensia subtiloides* are true neritic species occurring near the islands of Indonesia. Rest of the species are mainly oceanic forms though *Diphyes bojani, D. dispar, Chelophyes contorta, Abylopsis, tetragona, A. eschscholtzi, Lensia hotspur, Eudoxoides mitra* and *Enneagonum hyalinum* occur in both the regions.

Of the 114 known Indian Ocean Siphonophoran species (Totton, 1954; Daniel, 1971) 56 species (50%) occur off the Western coast of Australia from 200 - 0 metre depth. The deep water species of Siphonophora and those occurring in the Antarctic regions (*Dimophyes arctica* and *Lensia hardy* occurring elsewhere in the Indian Ocean at 200 - 0 metre depth *vide* Daniel 1971 presented at this Symposium) were not encountered in these collections.

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