

## DROPLETS FROM THE PLANKTON NET

### XIX. A GLIMPSE UPON CHAETOGNATHS AND PELAGIC TUNICATES COLLECTED IN THE LAGOON WATER NEAR NOUMEA, NEW CALEDONIA<sup>1,2)</sup>

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During the expedition to New Caledonia, paid by the Ōsaka Museum of Natural History in 1958, a few plankton samples were collected with a small net at the following stations:

Stations	Date	Haul Distance
in Noumea Port	Nov. 14	10-0 m
in the lagoon water SE off Noumea	Nov. 6	two surface tows
near the wharf of Kuto, Ile des Pins	Nov. 13	4-0 m

Four species of chaetognaths and eight forms of pelagic tunicates were found in the collection. They are:—

- Chaetognaths
1. *Sagitta enflata* GRASSI
  2. *Sagitta robusta* DONCASTER
  3. *Sagitta oceanica* GRAY
  4. *Krohmitta pacifica* (AIDA)

Pelagic tunicates

1. *Thalia democratica* var. *orientalis* TOKIOKA
2. *Doliolletta gegenbauri* var. *tritonis* (HERDMAN)
3. *Oikopleura longicauda* (VOGT)
4. *Oikopleura fusiformis* FOL
5. *Oikopleura dioica* FOL
6. *Oikopleura parva* LOHMANN
7. *Stegosoma magnum* (LANGERHANS)
8. *Fritillaria borealis* f. *sargassi* (LOHMANN)

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1) Scientific Results of the Melanesia Expedition, No. 5.

2) Contributions from the Ōsaka Museum of Natural History, No. 59 and Contributions from the Seto Marine Biological Laboratory, No. 345.

The abundance of *S. enflata* and *S. oceania* in the lagoon water is common to this area and lagoons of the Palao Islands (TOKIOKA, 1942) and the Tuamotu Islands (ROSE, 1953). In lagoons of the Palao Islands there occurred a considerable number of *S. bedfordii* DONCASTER when I collected the samples. This species was, however, quite absent in the present collection examined. Some specimens of *S. oceania* were dissected to ascertain my identification. The specimens from this area seem to attain the maturity at a considerably smaller body size than those found in the lagoon water of the Palao Islands. Namely, a 4.5 mm long individual was found having the seminal vesicles ruptured and the ovaries reaching the middle of the anterior fin. Many of 5.5–6.1 mm long individuals were found matured, too.

Table 1. Armature formulae of *Sagitta oceania* GRAY found in the material.

Body length	Tail segment in %	Hooks	Anterior teeth	Posterior teeth
4.4mm	26.0	8–8	4–4	8–8
4.5	34.0	6–6	3–3	7–7
5.1	28.8	7–8	5–5	11–12
5.5	33.1	7–7	4–4	8–8
5.9	31.6	8–8	5–6	8–8
5.9	29.4	7–7	4–4	10–10
6.1	29.3	7–7	6–6	12–12
6.3	27.6	7–7	5–6	13–14
6.7	32.3	?	6–7	?
7.0	27.3	7	6	11

Of the pelagic tunicates, solitary forms of *Thalia democratica* were all of var. *orientalis* TOKIOKA in which the lateral palps of the atrial aperture are distally bifurcated. This feature is very prominent in the present specimens, as even 1.5–2 mm long embryos are already provided with bifurcated palps. The abundance of *O. longicauda* and *O. dioica* was also seen in the appendicularian fauna of the lagoon water of the Palao Islands. In addition, *O. cornutogastra* AIDA was met with rather frequently in lagoons of the Palao Islands, but it was not found

TOKIOKA, T. (1942): Systematic studies of the plankton organisms occurring in Iwayama Bay, Palao. III, Chaetognaths from the bay and adjacent waters. Palao Tropical Biol. St. Studies, Vol. II, No. 3, pp. 527–548.

ROSE, M. (1953): Quelques renseignements sur le plankton des Iles Tuamotu. Bull. Mus. Nation. Hist. Nat., Tom. XXV, pp. 456–462.

in the lagoon water near Noumea. *F. borealis* f. *sargassi* was represented here by only smaller forms. The trunk was less than  $543\mu$  ( $434\mu$  on an average) and the tail was less than  $900\mu$  ( $807\mu$  on an average) in length. The relative abundance of *O. dioica* in Noumea Port may be accepted as indicating a considerable stableness of the port water.

Table 2. Occurrence of chaetognaths and pelagic tunicates.  
\*...less than 1%.

	Port of Noumea	Lagoon water SE off Noumea		Kuto Ile des Pins	Total	Percen- tage
		A	B			
<i>Sagitta enflata</i>	87	29	37	—	153	36.1
<i>Sagitta robusta</i>	3	—	1	—	4	1.0
<i>Sagitta oceania</i>	45	57	89	—	191	45.0
<i>Krohnitta pacifica</i>	1	—	—	—	1	*
<i>Sagitta</i> spp. juv. or damaged	20	11	44	—	75	17.7
<i>Thalia democratica</i>	sol. — greg. 6	33 452	58 448			
<i>Dolioletta gegenbauri tritonis</i>	134 Amme 4	90 10	143 16			
<i>Oikopleura longicauda</i>	36	112	184	1	333	17.7
<i>Oikopleura fusiformis</i>	1	7	5	—	13	1.0
<i>Oikopleura dioica</i>	72	4	4	?1	81	4.3
<i>Oikopleura parva</i>	2	—	—	—	2	*
<i>Stegosoma magnum</i>	—	—	—	1	1	*
<i>Fritillaria borealis sargassi</i>	4	421	710	—	1135	60.3
Appendicularians juv. or damaged	1	88	227	—	316	16.8