DROPLETS FROM THE PLANKTON NET[1)]

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XIV. On a Small Collection of Chaetognaths from the Central Pacific. (Fig. 18)

A small collection of chaetognaths, hauled by KITAHARA's quantitative plankton net or young fish tow-net from 100 m to surface near the Phoenix and Gilbert Islands during the period from February to March 1953, was submitted to me for examination by the courtesy of Prof. T. CHIBA and Mr. S. TSURUTA of the Simonoseki College of Fisheries, to whom I wish to express here my hearty thanks for their kindness. This material comprises the following nine forms:

Species	Individual number	Percentage
1. *Sagitta hexaptera*	8	3.3
2. *Sagitta enflata*	112	46.9
3. *Sagitta bipunctata*	29	12.1
4. *Sagitta robusta*	15	6.3
5. *Sagitta ferox*	12	5
6. *Sagitta serratodentata pacifica*	52	21.8
7. *Sagitta regularis*	1	0.4
8. *Pterosagitta draco*	9	3.8
9. *Sagitta* sp.	1	0.4
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Sagitta sp. (No. 9) is a problematical young form which is 3.9 mm in length. Tail segment occupies 34.9 % of the body length including the caudal fin. Body robust and opaque, being almost of uniform width. Lateral field rather narrow, muscles strong. Head of moderate size, neck distinct. Collarette practically absent, being found very faintly merely around the neck. No constriction at tail septum.

Anterior fin begins at the posterior end of the ventral ganglion. Posterior fin one and half as long as the anterior fin and lies more on the tail segment than on the trunk and broadest behind the septum. Distance between both fins very short. Rayless zone absent on either fin. The apparent shape of eye pigment very small and roundish. Corona ciliata of Type C, beginning behind the eyes and stretching

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on the trunk nearly one and a half as long as the head. It has a conspicuous depression on each side. Intestinal diverticula distinct. Hooks 10–10; anterior teeth 4–4; posterior teeth 5–5. Wing of the vestibular ridge reaches the first tooth, notch as deep as to reach the third tooth. Both ovaries and testes quite immature. Epiderm thickened slightly just behind the posterior fin.

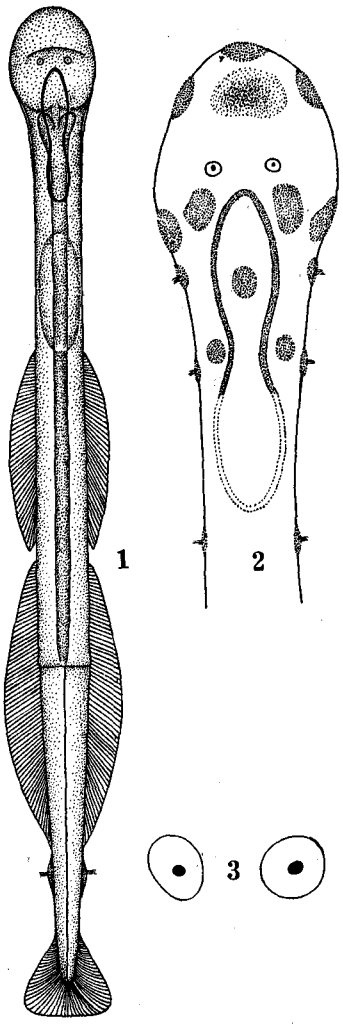

Fig. 18. *Sagitta* sp.
1...Entire animal, dorsal. ×33
2...Anterior part of the body, dorsal. ×75
3...Eyes. ×200

Remarks: *Sag. bedfordii* DONCASTER resembles the present form at a glance. The former shows the formula 9–12 $\frac{2-3}{2-3}$ at the body length near 4 mm (tail segment 36%) which is the maximum for this species. The latter has more teeth along both rows, slightly longer anterior fin and corona ciliata and quite immature sexually at 3.9 mm body length.

Sag. parva OYE is a small species and superficially very like the present form.

Even large individuals are less than 3.25 mm in length, tail segment 30% and armature formula is 6–8 $\frac{3-5}{6-7}$. The present specimen has more hooks and quite immature sexually at even 3.9 mm.

Young *Sag. regularis* seems to resemble the present specimen in the armament formula, but the former differs distinctly from the latter in the appearance of the collarette and the apparent shape of the eye pigment which is somewhat elongate in the former. Young *Sag. neglecta* and *Sag. oceanica* GRAY (=*Sag. lacunae* TOKIOKA) resemble the present specimen in the appearance of the collarette and in the outline of the eye pigment, but differ in the teeth formula. Young *Sag. ferox* and *Sag. robusta* (*Sag. ai* in TOKIOKA 1942, p. 541) conform well with the present specimen, excepting in number of hooks and the shape of the corona ciliata and the eye pigment. Ten hooks are not yet recorded for these two species, eye pigment of the preset specimen seems too small for the two species. Corona ciliata of Type C is possible to occur on very young individuals of the species which are provided with the corona of Type B in grown state (TOKIOKA 1942, p. 540).

These comparisons seem to induce me to the conclusion that the present specimen may belong to a new form or rather represent a young individual of *Sag. ferox* or *Sag. robusta.*

Sag. enflata is the most dominant species in this collection, next *Sag. serratodentata pacifica* and followed by *Sag. bipunctata* and *Sag. robusta.* In a collection from the water surrounding the Palao Islands, *Sag. enflata* was the commonest species, next *Sag. serratodentata pacifica* and *Sag. ferox* and followed by *Sag. regularis, Sag. neglecta* and *Pt. draco*; in a small material from the Arafura Sea, *Sag. enflata* and *Sag. bedoti* f. *minor* were common and followed by *Sag. robusta* and *Ktta. pacifica* (TOKIOKA 1942).

It may be said safely that *Sag. enflata* is the commonest species and followed by *Sag. serratodentata pacifica, Sag. ferox* and *Sag. robusta* in the open sea water in the central Pacific. *Sag. neglecta, Sag. regularis* and *Sag. bipunctata* occur commonly, but not so abundant as the species mentioned above. *Pt. draco* and *Ktta. pacifica* are met with frequently, although they are rather few in number. *Sag. bedoti* occurred abundantly in the material from the Arafura Sea, but it is quite rare in other materials.

In the lagoon waters of the central Pacific, *Sag. enflata* and *Sag. oceanica* seem to be the commonest species. In lagoons of the Palao Islands there occur besides *Sag. bedfordii* and *Sag. neglecta* in a small number (TOKIOKA 1942). Most of *Sag. neglecta* recorded by R. MAURICE (1953) from lagoons of Takapato, Takaroa, Takume and Hikuem of the Tuamotu Islands are very probably *Sag. oceanica.* The material of the Great Barrier Reef Expedition collected inside the reef near Low Island consists chiefly of *Sag. enflata*, next *Sag. neglecta* and *Sag. robusta* and followed by *Sag. bedoti, Sag. pulchra* and *Sag. serratodentata* (BURFIELD 1950).

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