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Contribution to the knowledge of *Lensia*
fowleri (BIGELOW) (SIPHONOPHORA, CALYCOPHORAE)

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Contribution to the knowledge of *Lensia fowleri* (BIGELOW) (SIPHONOPHORA, CALYCOPHORAE)

by

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6 Figures

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Summary. The author describes for the first time the posterior nectophore of the siphonophore *Lensia fowleri* (BIGELOW) as well as the unknown eudoxid of this species.

A description of another new eudoxid, *Eudoxia dohrni*, of unknown polygastric stage is given.

Riassunto. L'A. descrive per la prima volta la campana posteriore e l'eudosside di *Lensia fowleri* (BIGELOW), ed un nuovo eudosside, *Eudoxia dohrni*, il cui stadio poligastrico non è ancora stato accertato.

Lensia fowleri described by BIGELOW as long ago as 1911 is one of the commonest species of SIPHONOPHORA from the deeper waters of the southern Adriatic. In our plankton catches, from 1940 up to date, which were made with a 2 m ringtrawl, up to a depth of ca 700 m, this was the most abundant calycophorid. Up till now, this species under the above name, has been recorded for the Adriatic, by GAMULIN only (in HURE, 1955, 1961). MOSER (1917), for the Adriatic, mentions specimens of *Galeolaria truncata* (SARS) with a round as well as an elongated somatocyst. Therefore we suppose that she had at her disposal *Lensia fowleri* and *L. conoidea*. In 1925 MOSER included *Diphyes subtiloides* L. & v. R. with these two species as synonymous with *Galeolaria truncata*. None of the later authors accept MOSER's view (BIGELOW & SEARS, 1937; TOTTON, 1932, 1941, 1954, 1965). On the contrary, they distinguish three distinct species: *L. conoidea* KEFERSTEIN & EHLERS (= *Galeolaria truncata* SARS), *L. fowleri* BIGELOW and *L. subtiloides* L. & v. R.

All of our specimens of *L. fowleri* — and we had at our disposal approximately 1000 of the anterior nectophores — had in every case a round somatocyst, while the species *L. conoidea*, of which we had about 100 anterior nectophores, always had an elongated somatocyst. Additional species of the genus *Lensia* found in the Adriatic are *subtilis*, *campanella* and *meteori*.

Although *L. fowleri* was very abundant in our Adriatic catches, and has been reported from several other seas and rich collections, its posterior nectophore has not been figured before (TOTTON, 1965). Discussing the problem of

the posterior nectophore, BIGELOW & SEARS (1937) give some indication that this species is bipartite. They mention the remnants of what was apparently the pedicular canal at the base of the stem. Also they repeat that BROWNE (1926) saw specimens with minute buds, apparently the forerunners of the posterior nectophore (l.c. Fig. 36-39).

In our material we also observed some anterior nectophores with these same or similar characteristics. Furthermore we also found anterior nectophores of *L. fowleri* with an attached posterior nectophore. It is very minute, length 2.0 to 2.5 mm; but all the specimens were very delicate, and always crumpled,

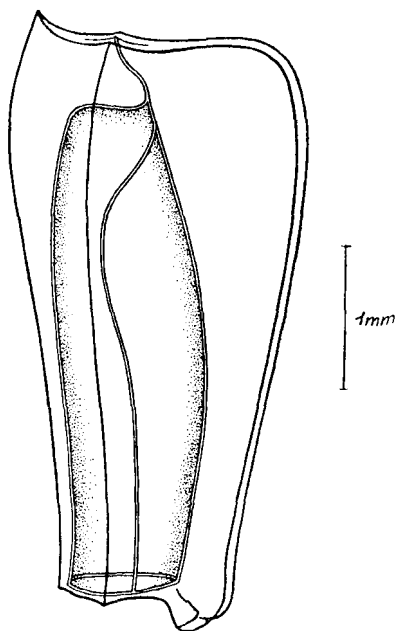


FIG. 1. *Lensia fowleri*, lateral view of inferior nectophore.

so that it was impossible to draw or to photograph them. However, in some of the plankton samples with abundant or a majority of specimens of *L. fowleri*, we found quite a few detached posterior nectophores 4-5 mm in length, which corresponded with the above mentioned attached but wrinkled posterior nectophores of *L. fowleri*. Since in the same catches sometimes no other CALYCOPHORAE were present, we are inclined to attribute this posterior nectophore to *L. fowleri* (Fig. 1).

Their characteristics are: a well developed upper part of the wing of the hydroecium and the mouth-plate without notch, similar to that of the posterior nectophore of *L. subtilis* (TOTTON, 1934, Fig. 34), and unlike that of *L. conoidea* (BIGELOW & SEARS, 1937, Fig. 34).

In hauls that contained numerous *L. fowleri* we often found an eudoxid, also its loose bracts and gonophores, hitherto unknown to us, and not figured till now (TOTTON, 1965). The same eudoxid sometimes is found in winter time and early spring also in coastal regions. The length of the complete eudoxid is up to 6 mm (Fig. 2). This bract is characterised by the round somatocyst which is at the base of the prolonged headpiece (Fig. 3). It has a round apex and a notch on the lower margin of the neckshield-wing, a very shallow bracteal cavity and a sutural surface which is smooth, does not form a groove and does not reach the apex. The dorsal and the left sides of the neckshield are at right angles to one another. The gonophore is quadrangular in section. Its most conspicuous characteristics are the deep hydroecium and the very broad upper part of the left wing of the hydroecium. There are four radial canals

(not illustrated) and the ostium is without teeth. The female gonophore bears 12 to 16 eggs.

Although we are not in a position to rear *L. fowleri*, we assign these eudoxids to it. We base our deductions on the great similarity, even identity, of some parts of the polygastric and eudoxid stages, to mention only the identically shaped somatocyst, the close similarity of the young bract on the stem and

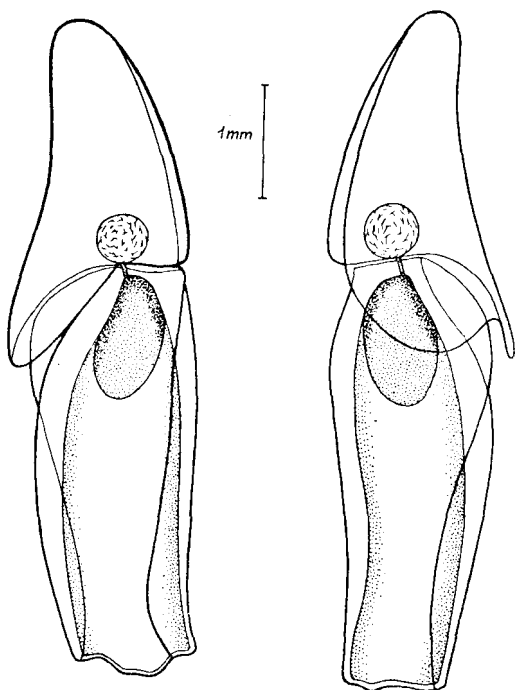


FIG. 2. *Lensia fowleri*, lateral view of the eudoxid.

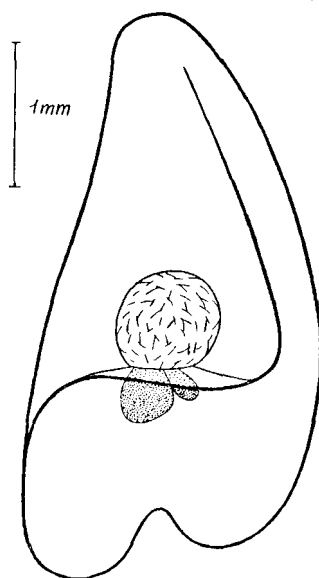


FIG. 3. *Lensia fowleri*, ventro-lateral view of the bract.

the developed bract of the eudoxid (Fig. 4, 5). The polygastric and eudoxid stages were abundant in the same plankton catches, whilst other calycophorids were less abundant, or even absent.

In ascribing this large and very characteristic eudoxid, we can not sufficiently accentuate the fact that until now it has not been described or illustrated. However, we emphasize also that the polygastric stage of *L. fowleri* was found for the first time in the Mediterranean area by the Thor Expedition (BIGELOW & SEARS, 1937).

In May-June 1964, south of Capri and in the Bay of Naples (depths of 700 m and 300 m respectively), *L. fowleri* and *L. conoidea* were also present in our plankton hauls made with silk nets of 1 m diameter. Only in a few plankton

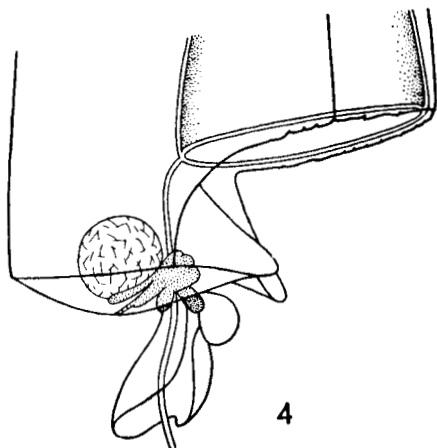


FIG. 4. *Lensia fowleri*, lateral view of basal part of superior nectophore, showing buds and the stem with one bract.

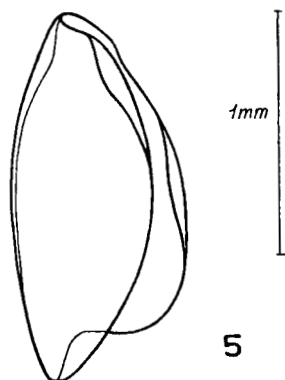


FIG. 5. *Lensia fowleri*, bract shown in Fig. 4.

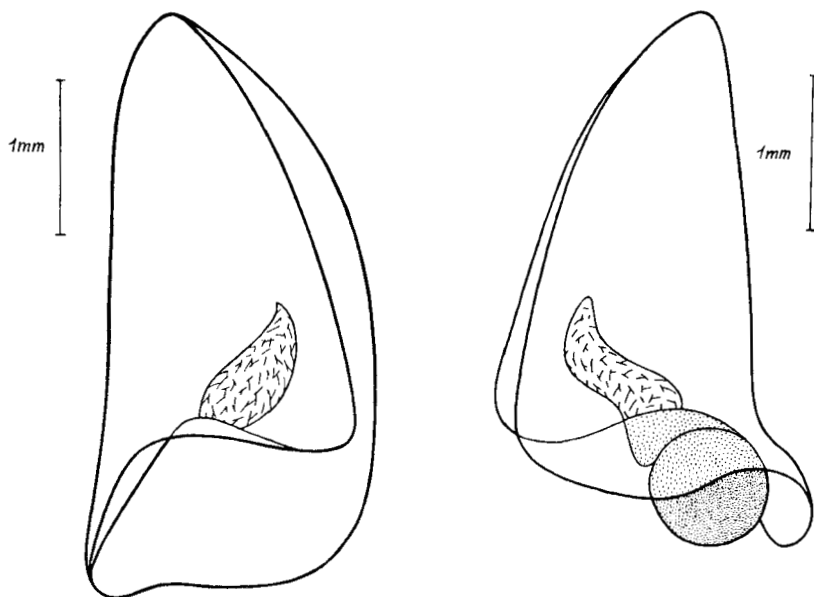


FIG. 6. *Eudoxia dohrni* n. sp., two views of the bract.

samples were there about 20 typical specimens of both species, but *L. conoidea* was rather more abundant. This agrees with the results of the Thor Expedition for the western Mediterranean area. In the same catches there were also a few specimens of the newly described eudoxid and the following species of the genus *Lensia*: *subtilis*, *campanella* and *meteyori*.

In the same plankton hauls in the Adriatic and in the Naples area we found a few specimens of another eudoxid which, at first sight, appears similar to the one just mentioned, and therefore we are describing it here. Its length was also up to 5.5 mm. All the eudoxids were badly conserved, especially the gonophores, which were so tender that they defy description. The loose bracts, which at first sight looked like the bracts of *L. fowleri*, were more numerous (Fig. 6). The peculiarities of this bract are as follows: unusual, though constant shape of the somatocyst; proportionally longer headpiece in relation to the shorter neckshield whose lower margin is without notch; pointed apex and sutural surface reaching the top.

All of these characteristics clearly differentiate this bract from that of *L. fowleri*. The question remains to which calycope this eudoxid, whose bract I have figured, belongs. We would venture to link it with *L. conoidea* if its eudoxid had not been described earlier (SARS, 1846; MOSER, 1925). But we wish to stress here that we have never found one like it in our material. Moreover we did not find *L. multicristata* MOSER in the Adriatic, although our eudoxid, judging from the bract figured, could perhaps belong to this species.

The question, therefore, remains open and we shall name the new eudoxid *Eudoxia dohrni*.

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