Two new species of *Ectopleura* from the Taiwan Strait, China (Cnidaria, Hydroidomedusae)

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Abstract

Two new species of genus *Ectopleura*, i.e., *Ectopleura elongata* sp. nov. and *E. triangularis* sp. nov. are described in the present paper based on type specimens from the Taiwan Strait. The types are deposited in the Third Institute of Oceanography, State Oceanic Administration, Xiamen, China.

Key words: *Ectopleura*, Tubulariidae, Taxonomy, Taiwan Strait

1 Introduction

The genus *Ectopleura* L. Agassiz, 1862 belongs to subclass Anthomedusae Haeckel, 1879 and Family Tubulariidae Fleming, 1828. *Ectopleura* medusoids is characterized by a normal, symmetrical umbrella with eight longitudinal exumbrellar cnidocyst tracks or rows, and by two or four equally developed tentacles or four marginal bulbs without tentacle. Medusoids in some species reduced to radial symmetrical eumедusoid or cryptomedusoid gonophore (Petersen, 1990). This genus includes 29 species based on free medusoids and sessile gonophores (Xu et al., 2007; Bouillon et al., 2006; Xu and Huang, 2006; Bouillon and Boero, 2000; Kramp, 1968; Kramp, 1961). In China’s waters, ten species of *Ectopleura* medusoids have been recorded (Xu et al., 2007; Xu and Huang, 2006; Xu et al., 1991; Li and Chen, 1991; Zhang and Lin, 1984; Xu and Zhang, 1978; Hsu and Chang, 1964; Hsu and Chin, 1962; Chow and Huang, 1958).

Two previously unknown species of *Ectopleura* are described from plankton samples collected by R/V Yanping II in the Taiwan Strait (20°8′49″–27°05″6′N, 114°9′20″–121°24′1″E) during January 2007. Through the analysis of 250 samples of plankton, having two new species, i.e., *Ectopleura elongata* sp. nov. and *E. triangularis* sp. nov. are described in the present paper. Two new species with four marginal tentacles differ from the other species of *Ectopleura* by having two opposite perradial tentacles, and by four marginal bulbs without tentacles, but similar to seven species of *Ectopleura* by also having four equally developed marginal tentacles. The major differences among them are summarized in Table 1.

2 Taxonomy

Family Tubulariidae Fleming, 1828
Genus *Ectopleura* L. Agassiz, 1862
*Ectopleura elongata* sp. nov. (Fig. 1)

Type specimen: Holotype (TS 004). One specimen collected from Taiwan Strait at Sta. ZD-XM655 (22°01′N, 117°52′E), 24 January 2007, depth 211 m, collected by Wang Yanguo (State Oceanic Administration).

Etymology: The specific name refers to the elongated conical basal bulbs of this medusae.

Diagnosis: Umbrella without apical projection, exumbrella with eight longitudinal ridges and eight cnidocyst tracks; four radial canals very broad and thick, with jagged edges; with four perradial tentacular bulbs, equal size elongated conical, all tentacles without abaxial cnidocysts cluster and terminal knob of cnidocysts.

Description: Umbrella 3.2 mm high, 2.5 mm wide, bell-shaped, slight inner trap in apical part, without apical projection, mesoglea middle thick; exumbrella

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with eight conspicuous longitudinal ridges, and eight longitudinal cnidocyst tracks, originating in pairs from the sides of marginal bulbs, continued to apex of umbrella along the edges of eight very prominent ridges; manubrium very large, cylindrical, slightly exceeding beyond the bell opening; mouth simple, circular; four radial canals very broad and thick, with jagged edges, circular canal middle broad; gonad completely surrounding manubrium; with four perradial marginal bulbs, equal size, elongated conical, tapering towards terminal in the form of a developed marginal tentacles, all tentacles without abaxial cnidocyst clusters and terminal knob of cnidocyst; velum middle broad.

Discussion: This new species has four equally developed marginal tentacles; umbrella without apical projection; exumbrella with eight longitudinal ridges and eight longitudinal cnidocyst tracks. These features differ from the other species of Ectopleura, but similar to Ectopleura guangdongensis Xu, Huang et Chen, 1991, while their main distinctions are:

Ectopleura guangdongensis: Manubrium tubular, about half the length of umbrella cavity; four marginal tentacular bulbs, nearly globular-shaped, each tentacle with seven to nine abaxial cnidocyst clusters, none terminal knob of cnidocyst; four radial canals narrow, without jagged edges.

Ectopleura elongata: Manubrium very large, cylindrical, exceeding beyond bell opening; four marginal tentacular bulbs with elongated conical bases, all tentacles without abaxial cnidocyst clusters and terminal knob of cnidocyst; four radial canals very broad and thick, with jagged edges.

Ectopleura triangularis sp. nov. (Fig. 2)

Type specimen: Holotype (TS 005). One specimen collected from Taiwan Strait at Sta. ZD-MJK584 (24°34′N, 120°00′E), 5 February 2007, depth 66 m,
collected by Wang Yanguo (State Oceanic Administration).

Etymology: The specific name refers to the triangular marginal bulbs of the medusae.

Diagnosis: Umbrella with a low and round apical projection; exumbrella with eight longitudinal cnidocyst tracks, without longitudinal ridge; with a large apical chamber in the form a pointed cone, like an apical canal; with four radial canals very broad, each with connected by a trans-canal in uppermost part of manubrium; with four marginal bulbs, equal size, triangular thickness of proximal bases of tentacles, with ring nematocysts; with four marginal tentacles, thin and long, each without abaxial cnidocyst clusters, with a large terminal knob of cnidocysts.

Description: Umbrella 1.1 mm high (including apical projection), 0.9 mm wide, conical bell-shaped, exumbrella with scattered nematocyst cluster; mesoglea moderately thick, with a low and round apical projection; exumbrella with eight longitudinal cnidocyst tracks, issuing in pairs from the side of tentacular bulbs and extending nearly apex of umbrella; exumbrella without longitudinal ridge: manubrium very large, pyramidal, with a broad, quadrate base, slightly exceeding beyond the bell opening; with a large apical chamber in the form of a pointed cone, resembling an apical canal; mouth simple, circular; gonad encircle the manubrium, leaving only proximal and mouth parts free; with four radial canals and a circular canal, all radial canals rather broad, with a number of deep brown granules in endoderm of radial canals, each with connected by a trans-canal in uppermost part of manubrium; with four broad marginal bulbs, equal size, frontal view of tentacular bulbs showing triangular, thickness of proximal bases of tentacles, with ring nematocysts, from the distal underside of which a narrow tentacle, without nematocyst clusters, with a large, terminal nematocyst knob; velum middle broad.

Discussion: This new species can easily be distinguished from the other species of *Ectopleura* by its four equally developed marginal tentacles, umbrella with apical projection; exumbrella without longitudinal ridge; with eight longitudinal cnidocyst tracks, which without extensible at bell margin, but similar to *Ectopleura indica* Petersen, 1990, while their main distinctions are:

*Ectopleura indica*: Without apical chamber and apical canal; four radial canals narrow; four short tentacles, marginal bulbs conical-shaped, proximal bases of tentacles without thickness and ring nematocysts.

*Ectopleura triangularis* sp. nov.: With apical chamber and apical canal; four radial canals broad and thick; four long tentacles, marginal bulbs triangular, thickness of proximal base of tentacles with ring nematocysts.

| Table 1. The key to the new species and similar species of the genus *Ectopleura* |
|---------------------------------|---------------------------------|
| 1. Umbrella with apical projection ............................................................ | 2 |
| 2. Exumbrella with 8 longitudinal ridges; 8 longitudinal nematocyst tracks which from triangular nematocyst patches at bell margin; 4 perradial tentacles with terminal nematocyst knob and irregularly scattered nematocyst clusters; manubrium broad and large, almost filling entire subumbrellar cavity ............................................................ | *E. latitaeniata* Xu & Zhang, 1978 |
| 3. With apical chamber and apical canal; 4 radial canals broad and thick; 4 long tentacles without nematocyst clusters, marginal bulbs triangular, thickness of proximal bases of tentacles with ring nematocysts ............................................................ | *E. triangularis* sp. nov. |
| 4. Exumbrella with longitudinal ridge ............................................................. | 5 |
| 5. Manubrium tubular, about half the length of subumbrella cavity; 4 marginal tentacular bulbs, nearly globular-shaped, each tentacle with 7–9 abaxial cnidocyst clusters, none terminal cnidocyst knob; 4 radial canals narrow, without jagged edges. ............................................................ | *E. guangdongensis* Xu, Huang et Chen, 1991 |
| 6. Mouth rim studded with nematocyst ............................................................... | 7 |
| 7. Manubrium short and blunt; 4 tentacles long, each with terminal nematocyst knob and 10–25 spherical, abaxial nematocyst clusters. ............................................................ | *E. dumortieri* (van Beneden, 1844) |
| 8. Medusoids known only while still attached to blastostyle, with 4 short tentacles with developing terminal nematocyst knob ............................................................ | *E. bettiae* (Warren, 1908) |
| Medusoids reduced to cryptomedusoid gonophore, older gonophores without radial canals and ring canal, with 4 relatively long, capititate tentacle rudiments. ............................................................ | *E. americana* Petersen, 1990 |

*Ectopleura indica* sp. nov.: Without apical chamber and apical canal; four radial canals narrow; four short tentacles, marginal bulbs triangular, thickness of proximal base of tentacles with ring nematocysts.
References