

***Tridentella ornata* (Richardson 1911), new combination: records of hosts and localities (Crustacea: Isopoda: Tridentellidae)**

Brian Kensley and Richard W. Heard

(BK) Department of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560; (RWH) Invertebrate Zoology Section, Gulf Coast Research Laboratory, P.O. Box 7000, Ocean Springs, Mississippi 39564

Abstract.—*Tridentella williamsi* Delaney, 1990, is shown to be a junior synonym of *Aega ornata* Richardson, 1911. As *Tridentella ornata*, the species is recorded from five different host fish species, from the Gulf of Mexico and the Caribbean. The presence of pleotelsonic pits is documented and briefly discussed. The distribution and host information of the 14 known species of *Tridentella* are provided.

Over a period of several years, isopods taken from the nasal cavities of groupers from the Gulf of Mexico were accumulated, and eventually made available to us for study. A review of literature on the family Aegidae from the Atlantic showed that our material was conspecific with a Richardson (1911) species, and also with a recently described Caribbean species of *Tridentella*. This note clarifies the taxonomy of the species, and records new localities and fish hosts.

Family Tridentellidae Bruce, 1984

Tridentella Richardson, 1905*Tridentella ornata* (Richardson, 1911)

Fig. 1

Aega ornata Richardson, 1911:624, figs. 1–4.*Tridentella williamsi* Delaney, 1990:643, figs. 1–3.

Type material examined.—Holotype of *Aega ornata*, USNM 42377, ♂ tl 8.0 mm, from *Pagrus pagrus*, southern United States, coll. R/V *Albatross*, 1885.—Holotype of *Tridentella williamsi*, USNM 239198, ♂ tl 8.5 mm, from *Epinephelus mystacinus*, British Virgin Islands.—Paratype of *Tridentella williamsi*, USNM

239199, ♂ tl 8.5 mm, from *Epinephelus flavolimbatus*, British Virgin Islands.

Non-type material examined.—USNM 253284, 1 ♂ tl 7.3 mm, 1 ovigerous ♀ tl 9.2 mm, 2 non-ovigerous ♀ tl 9.1 mm, 10 mm, from nasal cavity of *Mycteroperca microlepis*, 85–100 miles WNW of Clearwater, Florida, 10 Mar 1984.—USNM 253285, ♂ tl 11.2 mm, from *Mycteroperca phenax*, Big Elbow, Florida, 132 m, 30 May 1978.—USNM 253286, 1 ovigerous ♀ tl 12.7 mm, from *Epinephelus flavolimbatus*, Gulf of Mexico, 26°00'N, 84°20'W, 157–168 m, Feb 1984.—USNM 253287, 1 ♀ tl 8.5 mm, from nasal cavity of *Mycteroperca microlepis*, SW of Panama City, Florida, 25 m, 10 July 1977.—USNM 253288, 1 ♂ tl 7.2 mm, 1 juvenile 5.0 mm, from nasal cavity of *Mycteroperca phenax*, 36 miles SW of Panama City, Florida, 53 m, 17 May 1971.—USNM 253289, 1 ♀ tl 9.3 mm, from nasal cavity of *Mycteroperca phenax*, north-east Gulf of Mexico, 13 Feb 1977.

Diagnosis.—Eyes large, well pigmented, not contiguous. Frontal lamina elongate, five-sided, apically acute, apex meeting acute rostrum, 2 long sides slightly concave. Pereonites 4–7, and pleonites 1–5 with row of small tubercles along posterior margin; pleonites 3 and 4 with additional short median row of tubercles; pleonite 5

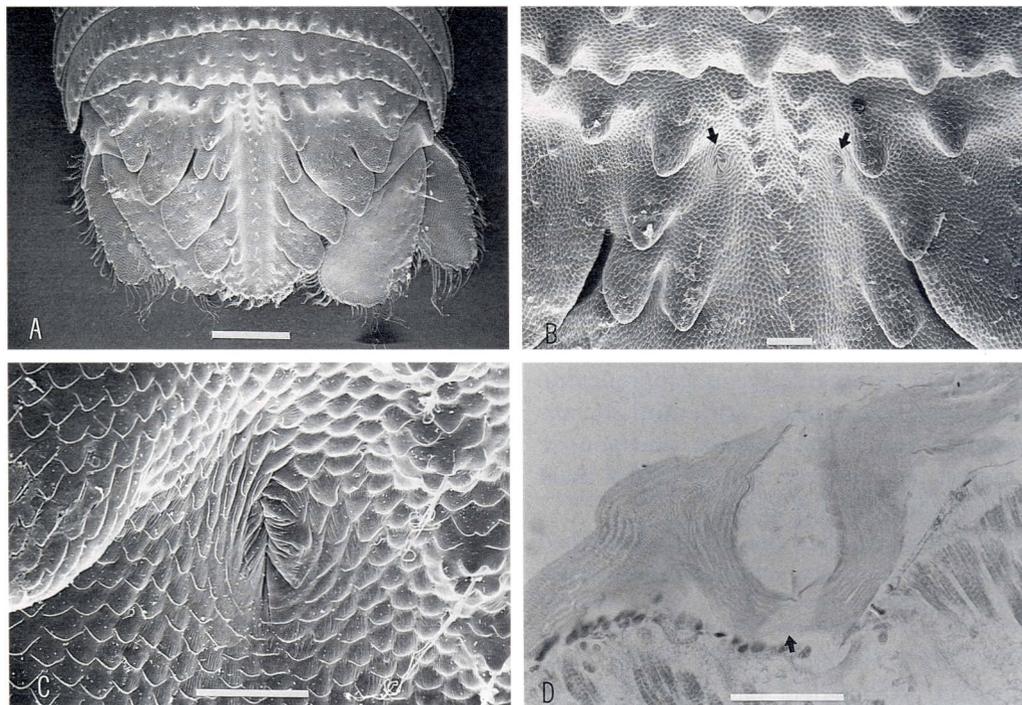


Fig. 1. *Tridentella ornata*: A, pleonite 6 and pleotelson, scale = 500 μ ; B, pleotelson enlarged, arrows indicate pits, scale = 100 μ ; C, pleotelsonic pit opening enlarged, scale = 50 μ ; D, cross-section through pleotelsonic pit, arrow indicates unsclerotised section of wall, scale = 50 μ .

with 2 additional rows of tubercles. Pleotelson triangular, basal width about 1.3 times middorsal length, with irregular row of large tubercles across base; shallow median longitudinal groove running from base to apex, flanked by row of large tubercles on each side, with invaginated pit on each side near base; lateral parts of pleotelson incised into 4 broad flattened sections; posterior margin rounded, crenulate.

Remarks.—The locality for the single specimen of *Aega ornata* described by Richardson (1911) is given as “southern United States”. Comparison of this specimen with the type material and figures of *Tridentella williamsi* from the British Virgin Islands (Delaney 1990), and our material from the Gulf of Mexico reveal no differences in the very characteristic pereonal and pleonal ornamentation. Equally, no differences in appendage structure could be detected. (In Richardson’s description, the

captions for figures 3 and 4 of the first and second maxillae are reversed). Females of the genus *Aega* Leach, 1815, lack the narrow, twisted, and strongly spined maxilliped that characterizes the males of the genus.

The pair of basal pits on the pleotelson are each marked on the surface by a puckered slit-like opening, which leads to a small flask-shaped chamber, whose walls are formed by the invaginated exoskeleton. At the base of the chamber is a non-sclerotized region of the exoskeleton. No other structure is visible, and there was no sign of a statolithic inclusion in the specimen sectioned. The pits are sited in the same position as the paired pleotelsonic statocysts of anthurid isopods (see Barnard 1925), and although this feature might tempt one to speculate on a link between the Flabellifera and Anthuridea, these pits should be seen as one possible stage in the development of

the type of innervated statocysts seen in the anthurids.

Of the 14 species of *Tridentella* described, only five have been recorded as associated with fish. These involve five different fish families. In the case of *T. ornata* under discussion here, the species has been taken from five different host fishes belonging to two separate fish families. These facts support the thesis proposed by Delaney & Brusca (1985:730), that these isopods should be regarded as micropredators, rather than parasites. Tridentellids are thought to lurk in the benthos, and pounce on almost any passing fish, to take a meal of blood and drop off again.

The following is a list of the described species of *Tridentella*, with localities, depth and host records:

- Tridentella acheronae* Bruce, 1988. New Zealand, Kermadec Is., 424–1006 m. Host not recorded.
- Tridentella cornuta* Kussakin, 1979. Northwest Pacific, 20–50 m. Host: *Hemitripterus villosus* (Cottidae).
- Tridentella glutacantha* Delaney & Brusca, 1985. North Farallon Islands, Santa Catalina Islands, off Los Angeles, 128–360 m. No host recorded.
- Tridentella japonica* Thielemann, 1910. Off Tokyo, Japan. No host recorded.
- Tridentella laevicephalax* Menzies, 1962. Southern Chile, 24 m. No host recorded.
- Tridentella ornamenta* (Menzies & George, 1972). Peru-Chile Trench, 907–935 m. No host recorded.
- Tridentella ornata* (Richardson, 1911). South-eastern United States, Gulf of Mexico, Caribbean Sea, 25–168 m. Hosts: red porgy, *Pagrus pagrus* (Sparidae); yellowedge grouper, *Epinephelus flavolimbatus*, misty grouper, *E. mystacinus*, gag grouper, *Mycteroperca microlepis*, scamp, *M. phenax* (Serranidae).
- Tridentella quinicornis* Delaney & Brusca, 1985. Off Santa Barbara Islands and Farnsworth Bank, California, 53 m. No host recorded.
- Tridentella recava* Bowman, 1986. New York Bight, 100–300 m. In burrows of tilefish, *Lopholatilus chamaeleonticeps* (Malacanthidae).
- Tridentella saxicola* (Hale, 1925). New South Wales, Queensland, Australia, 11–146 m. No host recorded.
- Tridentella sculpturata* Kussakin, 1955. Northwest Pacific, 70–96 m. Hosts: *Enophris diceraus* and *Alchichthys elongatus* (Cottidae).
- Tridentella tangaroae* Bruce, 1988. New Zealand, 90–94 m. No host recorded.
- Tridentella virginiana* (Richardson, 1900). Nova Scotia to Florida; Gulf Stream off Florida, 220–550 m. No host recorded.
- Tridentella vitae* Bruce, 1984. Fiji, 360 m. Host: *Pristipomoides flavipinnis* (Lutjanidae).

Acknowledgments

The collecting efforts of David Camp, Steven Candelari, and Gene Nakamara have made this contribution possible; we are grateful to them. Ms. Cheryl Bright and Dr. Jon Norenburg of the Department of Invertebrate Zoology, National Museum of Natural History, carried out the sectioning and slide preparation, and photography, respectively, of the pleotelsonic pits; we thank them sincerely for this assistance.

Literature Cited

- Barnard, K. H. 1925. A revision of the family Anthuridae (Crustacea Isopoda), with remarks on certain morphological peculiarities.—*Journal of the Linnean Society of London, Zoology* 36: 109–160.
- Bowman, T. E. 1986. *Tridentella recava*, a new isopod from tilefish burrows in the New York Bight (Flabellifera: Tridentellidae).—*Proceedings of the Biological Society of Washington* 99:269–273.
- Bruce, N. L. 1984. A new family for the isopod crustacean genus *Tridentella* Richardson, 1905, with description of a new species from Fiji.—*Zoological Journal of the Linnean Society* 80: 447–455.
- . 1988. Two new species of *Tridentella* (Crustacea, Isopoda, Tridentellidae) from New Zealand.

- land.—Records of the National Museum of New Zealand 3(7):71–79.
- Delaney, P. M. 1990. *Tridentella williamsi*, a new species of isopod crustacean from the British Virgin Islands, Western Atlantic (Flabellifera: Tridentellidae).—Proceedings of the Biological Society of Washington 103:643–648.
- , & R. C. Brusca. 1985. Two new species of *Tridentella* Richardson, 1905 (Isopoda: Flabellifera: Tridentellidae) from California, with a rediagnosis and comments on the family, and a key to the genera of Tridentellidae and Coralanidae.—Journal of Crustacean Biology 5:728–742.
- Hale, H. M. 1925. Review of the Australian isopods of the cymothoid group. Part I.—Transactions of the Royal Society of South Australia 49:128–185.
- Kussakin, O. 1955. New for far-eastern waters of the U.S.S.R.—the warm water families of Isopoda.—Travaux Trudy Zoologicheskogo Instituta, Akademiya NAUK USSR 18:228–234.
- . 1979. On the isopod crustaceans (Isopoda) of the Sea of Okhotsk.—Transactions, Akademiya NAUK CCCP [Investigations of Pelagic and Bottom Organisms from the Far-Eastern Seas] 15:106–122.
- Leach, W. E. 1815. A tabular view of the external characters of four classes of animals, which Linné arranged under Insecta; with the description of the genera comprising three of these classes into order, etc., and descriptions of several new genera and species.—Transactions of the Linnean Society of London 2:306–400.
- Menzies, R. J. 1962. The zoogeography, ecology, and systematics of the Chilean marine isopods.—Lunds Universitets Arsskrift, N. F. (2)57(11):1–162.
- , & R. Y. George. 1972. Isopod Crustacea of the Peru–Chile Trench.—Anton Bruun Report 9:1–124.
- Richardson, H. 1900. Synopses of North American invertebrates. 7. The Isopoda.—American Naturalist 34:207–230.
- . 1905. A monograph on the isopods of North America.—Bulletin of the United States National Museum 54:1–727.
- . 1911. Description of a new species of *Aega* from the Atlantic coast of the United States.—Proceedings of the United States National Museum 40:623–624.
- Schioedte, J. C., & F. Meinert. 1879. Symbolae ad Monographiam Cymothoarum Crustaceorum Isopodum Familiae I. Aegidae.—Natur-historisk Tidsskrift (3)13:281–378.
- Thielemann, M. 1910. Beiträge zur Kenntnis der Isopodenfauna Ostasiens.—Münchens Abhandlungen der Akademie Wissenschaft math.-phys. Kl. suppl.-bd 2, 3:1–109.