

Osteological Evidence for the Monophyly of Cepolidae and Owstoniidae

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Okada and Suzuki (1956) described the similarity of the cranium, jaw, suspensorium, opercular apparatus, hyoid apparatus and shoulder girdle between Cepolidae and Owstoniidae. On the basis of shared characters which are apparently not unique to these two families, i.e., vomer and palatine toothless, branchiostegals six in number, dorsal and anal fins not divided, dorsal and anal spines not sharp or solid but flexible and reduced, and single postclavicle, Okada and Suzuki have proposed that Owstoniidae should be included within Cepolidae. Springer et al. (1977) and Johnson (1984) agreed with this hypothesis but discussed no supporting synapomorphic characters. Nelson (1984) pointed out that whether these two groups were more closely related to each other than to other perciforms remained unclear. In other words, the above hypothesis needs corroboration by evidence derived from other methods such as cladistic analysis.

One unusual osteological character exists in these fishes. The epipleural ribs in some trunk vertebrae fuse proximally to the corresponding pleural ribs. In *Owstonia tosaensis* (77 mm, 98 mm SL) and *Pseudocepola taeniosoma* (130 mm, 139 mm SL) (Owstoniidae) proximal ends of epipleural ribs in the third to sixth vertebrae fuse to the pleural ribs (Fig. 1), while in *Acanthocepola indicus* (200 mm SL) and *A. krusensternii* (142 mm SL) (Cepolidae) such fusion takes place in the third to eighth vertebrae. Fusion of these two bones has not been reported in other perciforms, and is considered to be a perciform apomorphic character which supports the monophyly of the Cepolidae and Owstoniidae.

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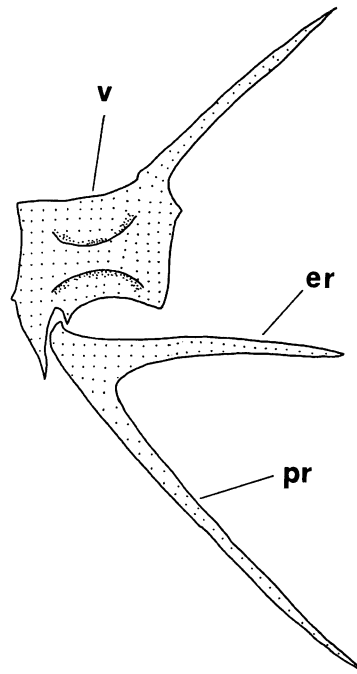


Fig. 1. Lateral view of the 6th vertebra in *Pseudocepola taeniosoma* showing fusion of its associated pleural and epipleural ribs. er, epipleural rib; pr, pleural rib; v, vertebra.

important literature. Miss Kuei-Chiu Chen, my research assistant, helps in preparing the cleared and stained specimens. This work was supported by a grant from the National Science Council of the Republic of China (NSC73-0204-B110-02).

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アカタチ科とソコアマダイ科の単系統性を示す骨学的特徴

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アカタチ科は多くの骨学的特徴をソコアマダイ科と共

有することが知られている。しかし、共有形質として示されてきた特徴は、これら2科に特有ではない。このためソコアマダイ科をアカタチ科に含めることに関しては、議論の余地があった。これら2科の骨学的特徴を調べたところ、前部脊椎骨の上肋骨と肋骨に特異な形質が見いだされた。前部脊椎骨の数個に付く上肋骨と肋骨は基部で癒合する。この形質はスズキ目の他の科では知られておらず、派生的特徴と考えられるので、アカタチ科とソコアマダイ科は単系統群を形成する。