

2. SYSTEMATIC CATALOGUE

2.1 Diagnostic Features of the Family Nemipteridae

Sparoid fishes of shallow to moderately deep shelf waters of the tropical and subtropical Indo-West Pacific. Body elongate to moderately deep, compressed. A single continuous dorsal fin, with 10 spines and 9 soft rays (last ray branched at base); anal fin with 3 spines and 7 (except *Nemipterus virgatus* with 8) soft rays (last ray branched at base); pectoral fin with 2 unbranched and 12 to 17 branched rays; pelvic fin thoracic, with 1 spine and 5 soft rays; caudal fin emarginate, forked, lunate or falcate; the upper and/or lower tips of the fin with or without pointed or filamentous extensions; scales finely ctenoid and moderate in size. Mouth terminal, small to moderate; premaxillaries moderately protrusible, the ascending process never as long as the alveolar ramus; articular process not fused to ascending process along anterior margin; post maxillary process present, low, broad-based; palato-premaxillary ligament well-developed; ethmo-maxillary ligament well-developed, Y-shaped, with a ventrolateral branch inserting on the palatine anterior to the insertion of the palato-premaxillary ligament; teeth in jaws conical, enlarged canines present anteriorly in *Nemipterus* and *Pentapodus*, vomer and palatine toothless. Gill membranes free from the isthmus; gill arches 4, a slit behind the fourth; pseudobranch well-developed; gill rakers short, knob-like; 6 branchiostegal rays, the first 5 inserting on the ceratohyal, the sixth inserting at the interspace between the ceratohyal and the epihyal; second and third epibranchial tooth plates lacking. First and second infraorbitals deep; the third infraorbital never deep, and the second infraorbital typically projecting backward below it (this posterior projection developed as an externally visible spine in *Scolopsis*); third infraorbital with a well-developed subocular shelf; fourth infraorbital often with a very small shelf. Two predorsal bones present in the following configuration: first predorsal, first neural spine, second predorsal, second neural spine, first pterygiophore supporting the first 2 dorsal spines plus the second pterygiophore supporting the third dorsal spine, third neural spine, third pterygiophore supporting the fourth dorsal spine, fourth neural spine; the last pterygiophore of the dorsal and anal fins trisegmental. Epipleural ribs 8 to 12; accessory subpelvic keel and post pelvic process present; opisthotic well-developed.

2.2 Notes on the Identification of Nemipterids

Because of similarities in the morphology of many nemipterid species, correct identification often is difficult, particularly when dealing with preserved specimens. The species of this family are most easily identified on the basis of their live or fresh colours, but unfortunately these colour patterns do not preserve well. Meristic characters, such as fin ray counts and scale counts, are relatively constant among nemipterids and are of only limited use in separating species. Likewise, because of similarities in body shape, as well as allometric growth, there is considerable morphometric overlap between species, and proportional measurements often do not reliably distinguish similar species. The keys provided in this catalogue are based as much as possible on simple morphological and meristic characters, or a combination of characters that serve to differentiate both preserved and fresh specimens. In a few cases, attempts to differentiate species on the basis of morphology have proved unsuccessful, and fresh colours provide the only reliable means of separating these species. To confirm species identifications using the keys, the individual species diagnoses and illustrations should also be consulted.

2.3 Illustrated Key to Genera

1a. Suborbital scaly or naked, spine weak or absent; posterior margin of suborbital smooth, finely serrate, or with a few small denticulations; posterior margin of preopercle finely denticulate or smooth; canine teeth in jaws absent, or present only anteriorly

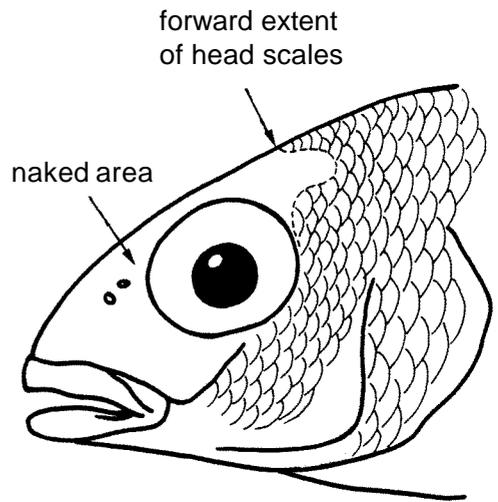
2a. Scales on top of head not reaching to level of eyes; temporal parts of head naked (Fig. 15) **Scaevius (mili)**

2b. Scales on top of head reaching forward to or in front of middle of eyes; temporal parts of head scaled (Figs 16, 17)

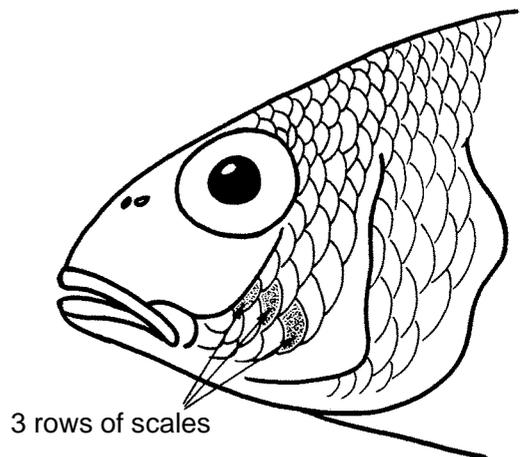
3a. Suborbital spine absent; 3 transverse scale rows on preopercle (Fig. 16) **Nemipterus**

3b. Suborbital spine weak or absent; 4-6 transverse scale rows on preopercle (Fig. 17)

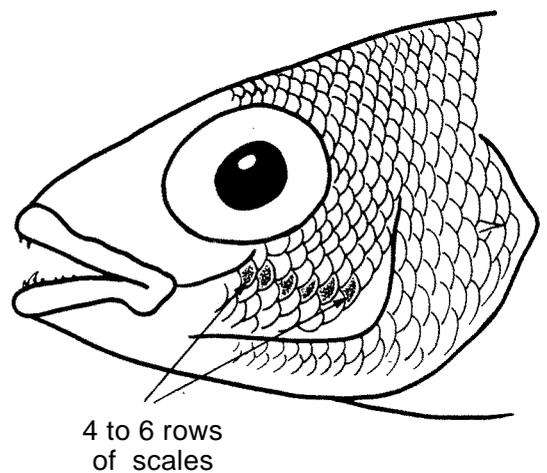
4a. Body depth 3.0-3.5 in SL; 2 or 3 pair of small canines anteriorly in upper jaw, a single pair of larger, flared canines anteriorly on either side of lower jaw (Fig. 18); second anal spine shorter and less robust than third (Fig. 19a) **Pentapodus**



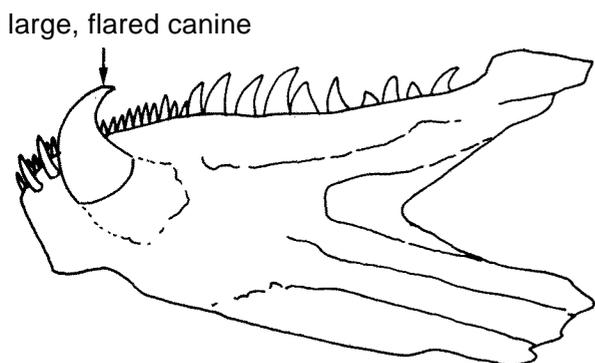
Scaevius mili Fig. 15



Nemipterus Fig. 16



Pentapodus Fig. 17



lower jaw (dentary) of **Pentapodus** Fig. 18