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ANNOTATED CHECKLISTS OF FISHES

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Family Scatophagidae Bleeker 1876

scats

By

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Scats have compressed, deep bodies, like butterflyfishes (Chaetodontidae), covered by small ctenoid scales which extend onto the soft tissue at the bases of the median fins. Head scaly, without spines. Preopercle margin not serrated. Dorsal profile of head slightly concave to straight in juveniles, distinctly concave above the eyes in adults. Parietals absent. Mouth nonprotrusible, armed with long, flattened, setiform teeth with tridentate distal ends, disposed in several broad bands; vomer and palatines edentate; maxilla covered by preorbital bone when mouth closed. Pelvic axillary process present. Dorsal fin deeply notched, with 11–12 spines and 16–17 (rarely 15 or 18) soft rays; first three spines progressing in length, with the fourth either of the same length as the third or slightly the longest in the series; first pterygiophore bearing the first two spines. Anal fin with 4 spines and 14–16 (rarely 17) soft rays. Pectoral fins short and rounded. Pelvic fins with 1 spine and 5 branched rays. Caudal fin rounded in juveniles, truncate to slightly double emarginate in adults, with 14 branched rays. Vertebrae 23 (10 + 13). Lateral line distinct, running about parallel to dorsal profile. Gill membranes united and forming a narrow fold across the isthmus. Branchiostegal rays 6. Swim bladder present and simple. Coloration variable; young fish usually dark, adults silvery or brownish with many dark spots or crossbands. Maximum size about 35 cm of length. Distributed in the Indo-Pacific region in harbors, natural embayments, brackish estuaries, and lower reaches of freshwater streams, frequently among mangroves, and often in small aggregations. Feed on worms, crustaceans, insects, algae, detritus, and plant matter. The family gets its name from their habit of including human feces in the diet; the word *scatophagus* literally means “feces eater.”

Scatophagids have a larval development that represents a synapomorphy of the family: larvae have heavily pigmented pelvic fins, early developing small spiny scale precursors, and a heavily armored head with fused plates, blunt spines, and projecting ridges capped with swollen granulated pads, all vanishing with growth (Leis and Trnski 1989 [ref. 27184]). Even though scats are commonly kept in freshwater aquaria, the dorsal, anal, and pelvic spines are believed by Philippine fishers to be venomous and capable of inflicting wounds (Herre 1935 [ref. 27182]). As reported in FishBase (Froese and Pauly 2003 [ref. 27181]), scats are used in Chinese medicine (Tang 1987 [ref. 27185]) and marketed as live fish in Hong Kong (Lee and Sadovy 1998 [ref. 27183]).

The family includes two genera, each containing two species. Two additional species, each belonging to a separate genus, are known from the fossil record (middle Eocene–Oligocene, northern Italy). Tyler and Sorbini (1999 [ref. 25312]) provided a key to the extant and fossil genera. Due to the limited number of characters available and, in particular, the absence of larval stages in the fossil record, the authors were, however, unable to demonstrate the monophyly of the family when both fossil and Recent genera were included in a cladogram of relationships. The name Scatophagidae is not preoccupied by Scathophagidae (dung flies, Diptera), and appeared as “subfamilia Scatophagiformes” in Bleeker (1876:302 [ref. 448]).

Genus *Scatophagus* Cuvier 1831

Scatophagus Cuvier in Cuvier & Valenciennes 1831:136 [ref. 4881]. Type species *Chaetodon argus* Linnaeus 1766. Type by subsequent designation.

Prenes Gistel 1848:X [ref. 1822]. Type species *Chaetodon argus* Linnaeus 1766. Type by being a replacement name.

Cacodoxus Cantor 1849:1145 [163 of separate] [ref. 715]. Type species *Chaetodon argus* Linnaeus 1766. Type by being a replacement name.

Desmoprenes Fowler & Bean 1929:35, 40 [ref. 1476]. Subgenus of *Scatophagus*. Type species *Chaetodon tetracanthus* Lacepède 1802. Type by original designation (also monotypic).

REMARKS: The type species of *Scatophagus* Cuvier 1831 was designated by Jordan (1917:136 [ref. 2407]). *Prenes* Gistel 1848 and *Cacodoxus* Cantor 1849 are unneeded replacements, as *Scatophagus* is not preoccupied.

***Scatophagus argus* (Linnaeus 1766)**

Chaetodon argus Linnaeus 1766:464 [ref. 2786] (India). No types known.

Chaetodon pairatalis Hamilton 1822:122, 372, Pl. 14 (fig. 41) [ref. 2031] (Ganges R., India). No types known.

Chaetodon atromaculatus Bennett 1830:unnumbered p., Pl. 18 [ref. 16785] (south coast of Sri Lanka). No types known.

Scatophagus purpurascens Cuvier in Cuvier & Valenciennes 1831:144, Pl. 180 [ref. 4881] (East Indies). No types known.

Scatophagus ornatus Cuvier in Cuvier & Valenciennes 1831:143, Pl. 180 [ref. 4881] (Ambon I., Moluccas Is., Indonesia; fresh water). Syntypes: MNHN A-0273 (2), A-0274 (2).

Scatophagus bougainvillii Cuvier in Cuvier & Valenciennes 1831:141 [ref. 4881] (no locality). Holotype (unique): MNHN (not found).

Sargus maculatus Gronow in Gray 1854:65 [ref. 1911] (Indian Ocean). Syntypes: BMNH 1853.11.12.82 [Gronovius collection] (1, skin).

Scatophagus argus var. *ocellata* Klunzinger 1880:363 [39 of separate] [ref. 2624] (Darwin, Northern Territory, Australia). Holotype (unique): SMNS 2611.

Scatophagus aetatevarians De Vis 1884:456 [ref. 4898] (Queensland coast, Australia). Holotype: QM I.96 or I.209.

Scatophagus quadranus De Vis 1884:455 [ref. 4898] (Queensland coast, Australia). No types known.

DISTRIBUTION: Indo-Pacific: Kuwait to Vanuatu and New Caledonia, north to southern Japan; Palau to Pohnapei in Micronesia; throughout India, Sri Lanka, Malaysia, Singapore, and northern part of Australia. Reported from Korea (Lee and Joo 1998 [ref. 25738]), Samoa (Lieske and Myers 1996 [ref. 27190]), and the Society Islands (Allen 1991 [ref. 21090]).

REMARKS: *Chaetodon pairatalis* is included in the synonymy following Günther (1860:58 [ref. 1963]). *Scatophagus purpurascens*, *S. ornatus*, and *S. bougainvillii* are synonyms according to Bauchot (1963 [ref. 20718]). Specimen ZMUO J2357 is labeled a syntype of *S. quadranus* De Vis 1884 but is not a type according to Pethon (1969:1, 6 [ref. 19268]).

***Scatophagus tetracanthus* (Lacepède 1802)**

Chaetodon tetracanthus Lacepède 1802:726, 727 [ref. 4929] (no locality). Holotype: MNHN A-2685 (dry).

Scatophagus fasciatus Cuvier in Cuvier & Valenciennes 1831:144 [ref. 4881] (unknown locality). Holotype (unique): MNHN A-2685 (dry).

DISTRIBUTION: Indo-West Pacific: Somalia and Kenya to South Africa, eastward to Australia and Papua New Guinea.

REMARKS: Figured on Pl. 25 (fig. 2) of Lacepède (1801 [ref. 2710]), but with vernacular name. Based on drawings and manuscript of Commerson. *Scatophagus fasciatus* is an unneeded new name for *Chaetodon tetracanthus* Lacepède 1802. *Chaetodon striatus* Linnaeus 1758 (of Rosenthal 1821:12–13 [ref. 19804] (1812–1825)) was included in the synonymy of *Scatophagus tetracanthus* by Günther (1860:60 [ref. 1963]). The figured specimen (Rosenthal 1812–1825:Pl. 13, [fig. 2], skeleton) is clearly a scatophagid.

Genus *Selenotoca* Myers 1936

Selenotoca Myers 1936:84 [ref. 3113]. Type species *Scatophagus multifasciatus* Richardson 1846. Type by original designation (also monotypic).

Selenotoca multifasciata (Richardson 1846)

Scatophagus multifasciatus Richardson 1846:57, Pl. 35 (figs. 4–6) [ref. 3740] (King George Sound, Western Australia). Holotype (unique): ?BMNH (dry).

DISTRIBUTION: Western Pacific: Papua New Guinea to southeastern Australia.

Selenotoca papuensis Fraser-Brunner 1938

Selenotoca papuensis Fraser-Brunner 1938:75, Fig. 2 (upper) [ref. 17192] (New Guinea). Holotype: BMNH 1938.6.11.1.

DISTRIBUTION: Western Pacific: Sulawesi and Papua New Guinea.

Summary Lists

Genus-Group Names of Family Scatophagidae

Cacodoxus Cantor 1849 = *Scatophagus* Cuvier 1831

Desmoprenes Fowler & Bean 1929 = *Scatophagus* Cuvier 1831

Prenes Gistel 1848 = *Scatophagus* Cuvier 1831

Scatophagus Cuvier 1831 = *Scatophagus* Cuvier 1831

Selenotoca Myers 1936 = *Selenotoca* Myers 1936

Incertae Sedis Genus-Group Names

None

Unavailable Genus-Group Names

None

Species-Group Names of Family Scatophagidae

aetatevarians, *Scatophagus* De Vis 1884 = *Scatophagus argus* (Linnaeus 1766)

argus, *Chaetodon* Linnaeus 1766 = *Scatophagus argus* (Linnaeus 1766)

atromaculatus, *Chaetodon* Bennett 1830 = *Scatophagus argus* (Linnaeus 1766)

bougainvillii, *Scatophagus* Cuvier 1831 = *Scatophagus argus* (Linnaeus 1766)

fasciatus, *Scatophagus* Cuvier 1831 = *Scatophagus tetracanthus* (Lacepède 1802)

maculatus, *Sargus* Gronow 1854 = *Scatophagus argus* (Linnaeus 1766)

multifasciatus, *Scatophagus* Richardson 1846 = *Selenotoca multifasciata* (Richardson 1846)

ocellata, *Scatophagus argus* Klunzinger 1880 = *Scatophagus argus* (Linnaeus 1766)

ornatus, *Scatophagus* Cuvier 1831 = *Scatophagus argus* (Linnaeus 1766)

pairatalis, *Chaetodon* Hamilton 1822 = *Scatophagus argus* (Linnaeus 1766)

papuensis, *Selenotoca* Fraser-Brunner 1938 = *Selenotoca papuensis* Fraser-Brunner 1938

purpurascens, *Scatophagus* Cuvier 1831 = *Scatophagus argus* (Linnaeus 1766)

quadranus, *Scatophagus* De Vis 1884 = *Scatophagus argus* (Linnaeus 1766)

tetracanthus, *Chaetodon* Lacepède 1802 = *Scatophagus tetracanthus* (Lacepède 1802)

Incertae Sedis Species-Group Names

None

Unavailable Species-Group Names

altermans, *Scatophagus* Castelnau 1878:47 [ref. 762]. Nomen nudum. Original description was brief and conditional, and the species was not treated as valid in this work. Later validation by Castelnau or another author is unknown. Species name was misprinted as *altermans* in the original description according to Castelnau (1879:376 [ref. 764]), who corrected it to *alternans*.

brunneus, *Scatophagus* Saville-Kent 1893:369 [ref. 13269]. Nomen nudum.

chameleon, *Scatophagus* Saville-Kent 1893:369 [ref. 13269]. Nomen nudum.

macronotus, *Scatophagus* Bleeker 1845:520 [ref. 312]. Nomen Nudum.

semistriatus, *Scatophagus* Saville-Kent 1893:369 [ref. 13269]. Nomen nudum.

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