

ON THE SPECIES OF THE GENUS *BALISTES* DESCRIBED BY JOHANN JULIUS WALBAUM (1792)

by

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ABSTRACT. - The status of six nominal species placed in the genus *Balistes* by Johann J. Walbaum (1792) is reported. *Balistes longirostris* and *B. meulenii* are shown to be senior synonyms of *Oxymonacanthus longirostris* (Bloch & Schneider, 1801) and *Cantherines fronticinctus* (Günther, 1867), respectively. Conditions exist, however, that allow "pre-vailing usage" of the latter names, as provided by Article 23.9.1 of the International Code of Zoological Nomenclature. *Balistes auwawa*, *B. barbatus* and *B. talpa* are shown to be junior synonyms of *Aluterus monoceros* (Linnaeus, 1758), whereas *B. capriscus* is a junior homonym of *B. capriscus* Gmelin, 1789 and therefore objectively invalid.

RÉSUMÉ. - Sur les espèces du genre *Balistes* décrites par Johann Julius Walbaum (1792).

Le statut de six taxons nominaux placés parmi le genre *Balistes* par Johann J. Walbaum (1792) a été déterminé. *Balistes longirostris* et *B. meulenii* sont des synonymes seniors d'*Oxymonacanthus longirostris* (Bloch & Schneider, 1801) et de *Cantherines fronticinctus* (Günther, 1867), respectivement. Toutefois, les conditions existent pour maintenir l'usage prédominant de ces derniers, d'après l'Article 23.9.1 du Code International de Nomenclature Zoologique. *B. auwawa*, *B. barbatus* et *B. talpa* sont tous des synonymes juniors d'*Aluterus monoceros* (Linnaeus, 1758), tandis que *B. capriscus* est un homonyme junior de *B. capriscus* Gmelin, 1789 et, pour cette raison, non valide.

Key words. - Monacanthidae - *Balistes* - Taxonomy - Senior synonyms - *Nomen protectum* - *Nomen oblitum* - Walbaum.

Johann Julius Walbaum (1724 - 1799) (Fig. 1), doctor of medicine in Lubeck and owner of a cabinet of natural objects (destroyed during World War II), became well known through several zoological publications (see Müller, 1973 for a biography and a list of publications). In ichthyology his major contribution was the *Petri Artedi renovati*, a work in three volumes and five parts conceived to present all genera and species of fishes known to date, arranged according to Artedi's classification, with the inclusion of all bibliographic references (Walbaum, 1788-1793). Walbaum supplemented Artedi's text (1738) with descriptions taken from all subsequent authors (Linnaeus, Gronovius, Forsskål, Koelreuter, etc.), but the species were amassed without criticism and using the authors' own terms. For this reason the book was severely criticized by Cuvier (1828) and rarely considered throughout the *Histoire Naturelle des Poissons* of Cuvier and Valenciennes. This fact contributed to send into obscurity many binomial names present in Walbaum's work.

In Pars III of the *Petri Artedi renovati*, entitled *Genera Piscium*, Walbaum (1792) described and named 236 new species and subspecies of fishes (Eschmeyer, 1998). Among these new taxa, 43 are currently recognised as valid, 73 are regarded as junior synonyms, 115 have no status defined, 5 have been regarded as unidentifiable (Parenti and Randall, 2000) and one is on the Official List. A preliminary re-ex-

amination of the large group of unplaced nominal species revealed that most of these represent senior or junior synonyms of well known fish species (Parenti, 2002; Parenti and Pietsch, 2002).

Under the genus *Balistes* Walbaum reported and described twenty-two species and four varieties. Among them twelve taxa represent original descriptions (Tab. I) and include one valid species (*schoepfii*), four junior synonyms (*guttatus*, *macropterus*, *spilotopterygius*, and *bellus*), and seven nominal species (*auwawa*, *barbatus*, *capriscus*, *japonicus*, *longirostris*, *meulenii*, and *talpa*) that are not referred to current literature (Eschmeyer, 1998). In a recent study of the genus *Paramonacanthus* Gill and Hutchins (2002) recognized *Balistes japonicus* as a senior synonym of *Stephanolepis cirrhifer* (Temminck & Schlegel, 1850). They recommend that *Stephanolepis cirrhifer* be retained as the valid name, as *B. japonicus* has never been used for this species since its original description. In the present paper the status of the remaining six nominal species is discussed. For each of these the original diagnosis, accompanied by an English translation of the description, is given.

MATERIAL AND METHODS

No type material is extant for the six species presented

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Figure 1. - A portrait of Johann Julius Walbaum (from Paepke, 1999, with permission of the Editor).

here. Identification is based on a critical examination of the original description and literature sources on which Walbaum based his descriptions.

RESULTS

An account for each species is included therein.

Balistes auwawa Walbaum, 1792

Balistes auwawa Walbaum, 1792: 464. Type locality: Indian Ocean.

Diagnosis

Slightly oblong; jaws extended; first dorsal ray rough on both sides, no ventral rays. D.1/2, 46. A.47. C.10.

Description

Body oblong, strongly compressed. Head profile sloping down, slightly convex. Mouth terminal, narrow. Teeth slightly prominent, strong, multiple. Gill slit oblique, narrow, above the pectoral fins. Chest and abdomen carinate, very thin. Vent medial. No ventral fins or spines. Anterior dorsal fin, originating above the middle of the orbit, can be folded rearwards in a dorsal groove. The first spine rough, the second one barely visible within the groove. Second dorsal fin linear, long-based. Pectoral fins small, roundish. Anal fin long-based. Caudal fin large, rounded. Color whitish. Found in the Indian Ocean.

Comments

The description is based on a fish reported in the *Zoophylacium Gronovianum* (Gronow 1763: 52) as *Balistes* n. 193 and later named in Gray (1854: 35) as *Balistes linguatula*, but with an erroneous reference number (n. 393). The specific name *auwawa* was most probably taken from the vernacular name Ikan Auwawa (Valentijn, 1726: 377), erroneously included into synonymy by Walbaum and Gronow. The Valentijn name actually represents *Oxymonacanthus longirostris* (Bloch & Schneider, 1801)

Nominal species	Present allocation
<i>B. auwawa</i>	<i>Aluterus monoceros</i> (Linnaeus, 1758)
<i>B. barbatus</i>	<i>Aluterus monoceros</i> (Linnaeus, 1758)
<i>B. bellus</i>	<i>Balistes vetula</i> Linnaeus, 1758
<i>B. capriscus</i>	junior homonym of <i>Balistes capriscus</i> Gmelin, 1789
<i>B. guttatus</i>	<i>Balistes punctatus</i> Gmelin, 1789
<i>B. japonicus</i>	<i>Stephanolepis cirrhifer</i> (Temminck & Schlegel, 1850)
<i>B. longirostris</i>	<i>Oxymonacanthus longirostris</i> (Bloch & Schneider, 1801)
<i>B. macropterus</i>	<i>Canthidermis maculatus</i> (Bloch, 1786)
<i>B. meulenii</i>	<i>Cantherines fronticinctus</i> (Günther, 1867)
<i>B. schoepfii</i>	<i>Balistes schoepfii</i> Walbaum, 1792
<i>B. spilopterygius</i>	<i>Balistes carolinensis</i> Gmelin, 1789
<i>B. talpa</i>	<i>Aluterus monoceros</i> (Linnaeus, 1758)

Table I. - New taxa described in the genus *Balistes* by J.J. Walbaum (1792) and their present allocation.

(Bleeker, 1865: 137). *Balistes linguatula* has been recognised as a synonym of *Aluterus monoceros* (Linnaeus, 1758) since Bleeker (1865: 141). *Balistes auwawa* is an earlier name of *B. linguatula* and its description fits with that of *Aluterus monoceros* (Linnaeus, 1758), of which it is here regarded as a new synonym.

***Balistes barbatus* Walbaum, 1792**

Balistes barbatus Walbaum, 1792: 464. No locality stated.

Diagnosis

Single dorsal spine inserted above the eye, *W.*

Description

A balistid with triangular head, swollen throat, mouth very small, with barbs; a single short curved spine above the eye, its end split; dorsal and anal fins composed by short rays bent toward the caudal fin. Caudal fin obliquely cut.

Comments

Walbaum proposed *B. barbatus* as a variety of his *Balistes auwawa*. It was based on *Capriscus capite triangulo* of Klein (1742: 25, pl. 3, fig. 11), which illustration is here reproduced (Fig. 2), in a work that does not conform to the principle of binominal nomenclature. After its description, Walbaum added *Balistes kleinii* Gmelin as a synonym of *barbatus*. As a matter of fact, Gmelin (1789: 1472) based *B. kleinii* on the same Klein specimen, but he miss-quoted the figure (pl. 3, fig. 12) (the figure 12 does not exist on plate 3). No meristic data are given by Walbaum, whereas Gmelin reported 46 dorsal and 47 anal fin rays. Based on several morphological features (the presence of more than forty soft rays in both dorsal and anal fins, a short dorsal spine, the caudal fin much shorter than snout, and the ventral contour of the head concave below chin), it is concluded that both *B. barbatus* and *B. kleinii* represent junior synonyms of the wide ranging *Aluterus monoceros* (Linnaeus, 1758). The

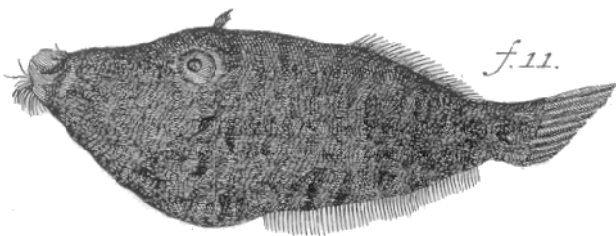


Figure 2. - Illustration on which the original description of *Balistes barbatus* Walbaum, 1792 was based.

specimen is illustrated with barbs within and around the mouth (from which the name *barbatus*). Why the author included this feature can only be guessed. The barbs might represent filamentous algae growing on the fish (usually on damaged areas) or perhaps it is food trapped in the teeth; fish swimming around with seagrass caught in their mouths have been observed (Barry Hutchins, pers. comm.). The mouth appears to be distorted so perhaps it had once been caught on a hook and line, escaped, and filamentous algae subsequently grew on the damaged jaw. Interestingly, Parra (1787) used the non-latinised name *Lija barbuda* to indicate the same species (Bloch and Schneider, 1801: 462). In their account of fishes of North and Middle America, David Starr Jordan and Barton Warren Evermann (1898: 1720) recognised *Lija barbuda*, *B. kleinii* and *B. barbatus* as junior synonyms of *A. monoceros*.

***Balistes capriscus* Walbaum, 1792**

Balistes capriscus Walbaum, 1792: 465. No locality stated.

Diagnosis

Balistid, deep, elliptic, first dorsal fin with three spines and caudal fin slightly truncate, *W.*

Description

Body strongly compressed, elliptical, covered by scales, rough at touch. Head strongly compressed, with a convex upper profile above eye and a concave snout. Eyes set high on the head, far from the tip of the snout. Mouth narrow. Teeth large and strong, close-set, wedge shaped, eight in both jaws. First dorsal fin medial, with three spines of different length, the first one stout and longer than the others. Second dorsal fin, quite long-based and with a declining contour. Anal fin below second dorsal and of similar shape. Pectoral fins small, rounded, below the midline of the body. Ventral fins absent. Ventral fin replaced by a prominent recurved strong spine, which represent the apex of the chest. Region between this spine and the vent supported by several short spines. Caudal peduncle short, narrow, bearing a small flat truncate fin. Color: olivaceous, with many scattered small blue spots. Back and ventral fins even darker and marked with a larger number of bluish and rubbish spots.

Comments

Walbaum proposed the name *Balistes capriscus* for a fish described by Willughby (1686: 152, pl. I, fig. 10). *Balistes capriscus* was not included by Eschemeyer (1998), but it clearly represents an original description, as demonstrated by the presence of a "W." after the diagnosis, a

marking that according to the author's style means a species new to science. Walbaum overlooked the existence of *B. capriscus* Gmelin (1789: 1471) in the thirteenth edition of the *Systema Naturae*, a work that Walbaum did have available. Therefore, *B. capriscus* Walbaum represents a junior synonym and a primary homonym of *B. capriscus* Gmelin and it is permanently invalid.

***Balistes longirostris* Walbaum, 1792**

Balistes longirostris Walbaum, 1792: 460. No locality stated.

Diagnosis

Snout exceedingly long and narrow; a distinct black spot ventrally to mouth; D.2/2, 30. C.29.

Description

No description given.

Comments

The short diagnosis is based on a fish described and figured by Seba (1759: 64; pl. 24, fig. 19), which is the same on which Bloch and Schneider (1801: 464) based their concise description of *Balistes hispidus* var. *longirostris*. Therefore, *Balistes longirostris* Walbaum represents an older name for the species presently known as *Oxymonacanthus longirostris* (Bloch & Schneider, 1801), a coral reef species widely distributed in the Indo-Pacific.

Article 23.9.1 of the International Code of Zoological Nomenclature (1999) states that "prevailing usage must be maintained" when two conditions are met: (1) the senior synonym has not been used as a valid name after 1899 and (2) the junior synonym has been used as the presumed valid name in at least 25 works, published by at least 10 authors in the immediately preceding 50 years, and spanning at least 10 years. In this instance both conditions exist to allow prevailing usage as established by Article 23.9.1. Thus, *Oxymonacanthus longirostris* (Bloch & Schneider, 1801) is here regarded as the valid name and here qualified as a *nomen protectum*. *Balistes longirostris* Walbaum, 1792 is an invalid name and here qualified as a *nomen oblitum*. This action is taken in accordance with Article 23.9.1. To give evidence that the conditions of Article 23.9.1 have been met, the following publications are here included: Allen (1997); Allen and Swainson (1988); Francis (1993); Fricke (1999); Herre (1953); Hutchins (1984, 1986, 1997, 2001a, b); Kailola (1991); Kulbicki *et al.* (1994); Laboute and Grandperrin (2000); Masuda *et al.* (1984); Monkolprasit *et al.* (1997); Myers (1999); Nakabo (2000); Randall *et al.* (1990); Randall and Anderson (1993); Randall *et al.* (1997); Randall and Lim (2000); Russell (1983); Shen (1993); Wass (1984); Winterbottom *et al.* (1989).

***Balistes meulenii* Walbaum, 1792**

Balistes meulenii Walbaum, 1792: 461. Type locality: Indian Ocean.

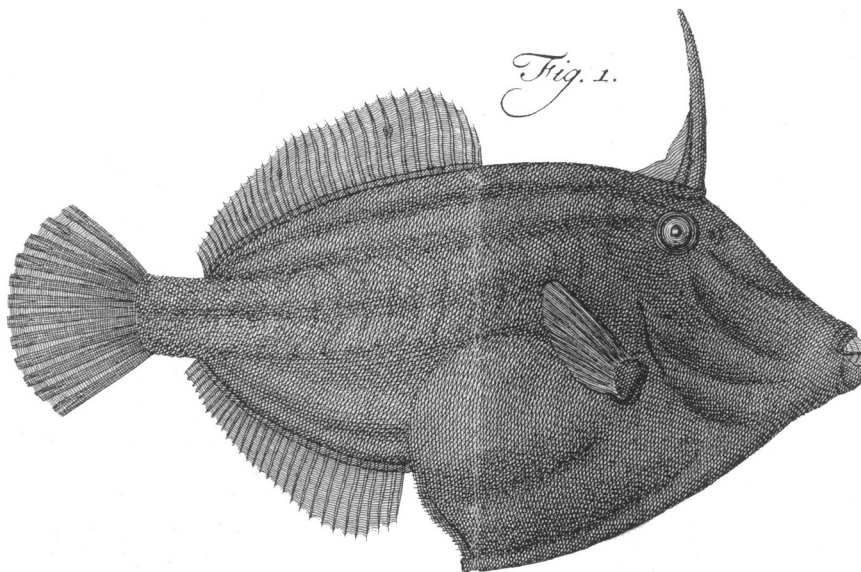


Figure 3. - Illustration on which the original description of *Balistes meulenii* Walbaum, 1792 was based.

Diagnosis

Single smooth dorsal spine, ventral flap extending from throat to anus, caudal fin rounded, *W. D.* 1/1, 35. *P.14.* *A.30.* *C.12.*

Description

Body laterally compressed, oval-oblong, bulged out from the belly to the vent, posteriorly blunt and angular. Head slightly oval, dorsal profile sloping downward, snout shortly produced, blunt. Cheeks folded and worn-out. Eyes high on the back of the head. Vent medial. First dorsal fin formed by a long, rounded, smooth spine, connected to the back by a short membrane. Second dorsal quite long-based and sloping. Anal fin similar to the second dorsal. Pectoral fins small, blunt, and low on the body. Caudal fin rounded. Color brownish, adorned with five dark cross bands. Length half a foot. It inhabits the Indian Ocean.

Comments

The description is based on Houttuyn (1765: 462, pl. 69, fig. 1) and Müller (1774: 301, pl. 9, fig. 1). On the basis of type locality, color pattern and (with some discrepancies) on fin ray counts (only one dorsal spine is reported and 30, instead of 31-33, soft anal rays), it is concluded that *B. meulenii* represents a senior synonym of *Cantherhines fronticinctus* (Günther, 1867). Also, the presence of the second, minute dorsal spine has been overlooked. Examination of the specimen illustrated by Houttuyn, here reproduced as figure 3, confirms *meulenii* to be a senior synonym of *fronticinctus*. *Cantherhines fronticinctus* is a generally uncommon species found in seaward reefs of all tropical waters of the Indo-Pacific from East Africa, southward to Durban and eastward to the Society Islands, but it has not been recorded from the Red Sea and the Hawaiian Islands. While no doubt remains that *B. meulenii* is a senior synonym of *C. fronticinctus*, both conditions exist to allow "prevailing usage" of the latter name as provided by Article 23.9.1 of the International Code of Zoological Nomenclature. *Balistes meulenii* has not been used as valid since 1899 (Article 23.9.1.1) and *Cantherhines fronticinctus* (Günther, 1867) has been used as valid name in at least 25 works, published by at least 10 authors during the past 50 years, and encompassing a span of not less than ten years (Article 23.9.1.2). *Cantherhines fronticinctus* (Günther, 1867) is thus regarded as valid and here qualified as a *nomen protectum*, whereas *Balistes meulenii* Walbaum, 1792 is an invalid name and here qualified as a *nomen oblitum*. This action is taken in accordance with Article 23.9.1. To give evidence that the conditions of Article 23.9.1.2 have been met the following publications are here included: Allen (1997); Allen and Swainston (1988); Francis (1993); Fricke (1999); Glaesel (1997); Hutchins (1984; 1986; 2001a, b); Hutchins and

Randall (1982); Kailola (1991); Laboute and Grandperrin (2000); Lindberg *et al.*, (1997); Masuda *et al.*, (1984); Myers (1999); Nakabo (2000); Ni and Kwok (1999); Randall (1964; 1973; 1986); Randall and Lim (2000); Shen (1993); Smith and Dalzell (1991); Smith and Smith (1963); Winterbottom *et al.* (1989).

Balistes talpa Walbaum, 1792

Balistes talpa Walbaum, 1792: 467. No locality stated.

Diagnosis

Smooth, eyeless, first dorsal fin with a single ray; two bumps on thorax instead of ventral fins, *W. D.* 1/1, 48; *P.12;* *A.43;* *C.12.*

Description

Body laterally compressed, oblong, anteriorly and posteriorly gradually narrower, skin with a coarse texture. Head conical, as long as high, with a sloping upper profile similar to that of a mole. Eyes apparently absent, as well as nostrils. Mouth narrow, tubular, compressed, sent out as an outlet. Jaws about equal, arched, reduced like plates, almost perpendicular, the upper shorter and larger than the lower, like a sheath. Twelve slanting, outwardly directed and adjacent teeth in jaws: 6 flat and of different shape in the upper jaw; the two anterior most truncate and slightly curved, the two next ones gradually shorter, and the last ones of the same length; the penultimate blunt, clenched with a sharp lateral process to the last one, which is rounded and smallest. Six teeth also in the lower jaw, of which 4 chiseled, equal, longer than the upper ones; the last tooth at the corner of the mouth blunt, broader and shorter than the preceding ones. Gill openings narrow, oblique, placed in front of the pectoral fin base. Trunk compressed, spindle-shaped, caudal fin paddle-like. Vent on the breast. First dorsal fin with a short spine, covered by red, smooth skin, lying down on the middle of the back. Second dorsal fin on the rear, as long as half the length of the body. Anal fin similar and opposed to the second dorsal fin. Pectorals small, slanting and truncate, with simple rays of increasing length from above. Ventral fins replaced by rounded bumps on thorax in front of the vent. Caudal fin entire, large. Colour uniformly dusky; fins pale. My description is based on a desiccated specimen, and if it will be proved not inadequate and not substantially modified by fresh specimens, I would see this species close to *Balistes awawae* [sic].

Comments

Balistes talpa represents one of the rare examples throughout Walbaum's work in which the description is

based on an actual specimen, though preserved and apparently partly damaged. Even though the description deviates from any currently known monacanthid in some features, only two genera of monacanthids, *Aluterus* Cloquet, 1816 and the monotypic *Pseudalutarius* Bleeker, 1865, contain species with more than forty soft rays in both the dorsal and anal fins. Although the fin ray counts best fit with that of *Pseudalutarius nasicornis* (Temminck & Schlegel, 1850), this is a very distinctive species, easily recognized by the presence of a straight first dorsal fin placed well in advance of the orbit. Walbaum describes the first dorsal fin as short and says nothing about its advanced position. The shape of the first dorsal, combined with the presence of ventral rudiments and a large caudal fin, strongly suggest that Walbaum had in his cabinet a specimen of *Aluterus*. Only *A. scriptus* (Osbeck, 1865) and *A. monoceros* (Linnaeus, 1758) have soft rays number compatible with *B. talpa* even though the range is slightly outside the count for *talpa*. The poor condition, which apparently characterizes this specimen, might account for these discrepancies. *Aluterus scriptus* is a wide ranging species with a distinctive color pattern, which would have been noticed by the author. Therefore, *Balistes talpa* is here regarded as a new junior synonym of *Aluterus monoceros* (Linnaeus, 1758).

DISCUSSION

Except for *Balistes barbatus*, which was listed in the synonymy of *Alutera* [sic] *monoceros* by Jordan and Evermann (1898: 1720), none of the specific names discussed here is presently utilized in the current literature. None of these species is accompanied by type material or a drawing and all but one are based on literature sources. As was his style (Gill, 1872: 38), Walbaum failed to examine critically the original text and figure of the species he described. Following a brief diagnosis, he provided a description of the species which was copied almost entirely and verbatim from an original text. Examination of the latter is thus essential for a positive identification of the species. When the description was not based on the literature (as for *B. talpa*), Walbaum revealed poor judgment (Cuvier, 1828).

This study discloses that two nominal species predate two well established taxa. A preliminary study made by the author has shown that there are at least an additional 20 nominal species in the *Genera Piscium* which represent older names of corresponding fish names in current usage in ichthyology. The International Code of Zoological Nomenclature provides the groundwork for elimination of unused, old, or obscurely published names. About 5000 names listed in the Eschmeyer's Catalog of Fishes can be

made technically unavailable through the action of the Code (Eschmeyer, pers. comm.). This represents a demanding task and a future challenge for fish taxonomists. Obtaining this, however, will contribute significantly to stability of zoological nomenclature, by fixing status names, spelling, authorship, publication site, and date. The present paper is offered in this framework, and a comprehensive study of the Walbaum's works is currently in progress.

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