

**SPARUS AXILARIS PEREZ 1820, A SENIOR SYNONYM OF THE AXILLARY SEA BREAM  
PAGELLUS ACARNE (RISSO 1827) INVALIDATED BY 'REVERSAL OF PRECEDENCE'**

by

Paolo PARENTI (1) & William J. POLY (2)

**RÉSUMÉ.** - *Sparus axilaris* Perez 1820, un synonyme plus ancien du pageot blanc *Pagellus acarne* (Risso 1827), invalidé par inversion de préséance.

Au cours d'une recherche bibliographique ichthyologique nous avons découvert que *Sparus axilaris* Perez, 1820, une espèce nominale oubliée après sa description, représente un synonyme plus ancien du pageot blanc *Pagellus acarne* (Risso, 1827). Toutefois, les conditions existent pour maintenir l'usage prédominant de ce dernier, comme le signale l'article 23.9.1 du Code international de Nomenclature zoologique (1999) : *Pagellus acarne* doit être considéré *nomen protectum* tandis que *Sparus axilaris* devient *nomen oblitum*.

Key words. - Sparidae - *Pagellus acarne* - Taxonomy - *Nomen protectum* - *Nomen oblitum*.

Many species of fishes (as well as other categories of creatures) have been named and described more than once. This is especially true for widely distributed species, commercially important species, or those that change markedly through ontogeny or differ between male and female. There are some 55,760 nominal species of fishes, but there are only about 28,000 valid species (Eschmeyer, 2003). In the last decades several long-forgotten names have been rediscovered by many authors (Whitehead, 1964, 1985; Daget, 1968; Weber, 1992; Gill and Randall, 1998; Randall and Parenti, 1999; Gill and Hutchins, 2002; Parenti, 2002a, 2002b; Böhlke and Smith, 2002; Parenti and Pietsch, 2003; Campos-da-Paz, 2003). These names cause widely-used names to become junior synonyms, and, as a consequence, they introduce instability in zoological nomenclature. However, article 23.9.1 of the International Code of Zoological Nomenclature (1999) allows for the continuation of prevailing usage of a younger synonym by reversal of precedence in accordance with the purpose of the principle of priority. This implies that the older synonym, albeit invalid, is still available for use as valid name if further studies will show that, for example, the younger synonym is a species complex within which younger and senior are actually not conspecific. Here we show that the nominal species *Sparus axilaris* Perez, 1820 represents an older name for *Pagellus acarne* (Risso, 1827), a well known Mediterranean and Eastern Atlantic sea bream species. We propose that *S. axilaris* be invalidated by reversal of precedence, on the ground that decision to continue to use *P. acarne* is justified in the Code.

## RESULTS AND DISCUSSION

The axillary seabream *Pagellus acarne* (Risso, 1827) is one of

the 27 species of Sparidae currently recorded from the Mediterranean, including two immigrants from the Red Sea [*Crenidens crenidens* (Forsskål, 1775), *Rhabdosargus haffara* (Forsskål, 1775)] and two from tropical Atlantic [*Diplodus bellottii* (Steindachner, 1882) and *Pagellus bellottii* Steindachner, 1882] (Whitehead *et al.*, 1986; Golani *et al.*, 2002). It is an important commercial fish distributed also in the Eastern Atlantic (Fisher *et al.*, 1987): common from Bay of Biscay to Senegal, the Azores, Madeira, the Canaries and the Cape Verde Island, it is rarely caught around the British Isles but has been recorded off Denmark. In the Mediterranean basin it is less common in Adriatic and Eastern Mediterranean and absent in Black Sea. It is a demersal species, found in inshore waters on various bottoms, mainly sand, muddy-sand, the juveniles preferring *Posidonia* beds, down to 500 m, but more common between 40 and 100 m. Benthic invertebrates and fish larvae represent its main source of food.

The axillary seabream can be diagnosed as follows: body fusiform; upper profile of head depressed above eyes; inter-orbital space flat; eye diameter shorter than snout length. Occipital scales extending forward to between the posterior margin and the middle of eye. D XII-XIII, 10-12; A III, 9-10; the last dorsal and anal ray stronger than the others. Gill rakers 13-16 lower, 9-12 upper. Lateral line scales 65-72 to caudal base. Body colour pinkish-grey; head darker, especially inter-orbital space; a dark-red spot at the upper pectoral axil overlapping the upper base; fins more or less light pinkish; sometimes paired fins with a darker margin; inside of mouth orange-red. It can reach 36 cm SL, usually 20-25 cm. *Pagellus acarne* is readily distinguished from its congeners by colour and, in particular, the presence of the axillary spot and absence of other stripes or spots.

The axillary seabream was recognized as distinct from other pagrids since Rondelet (1554: 151), who described it under the name *acarne*, taken from Plinius. Unfortunately, neither Ardeï nor Linnaeus followed Rondelet in this decision, failing to mention this fish. As Mediterranean species it was included by Risso in his *Ichthyologie de Nice* (1810), but he misidentified the species as *Sparus berda* Forsskål 1775, an Indo-Pacific species. In the second edition of his natural history of Northern Mediterranean fishes, Risso (1827) realized his error and recognized the axillary seabream as distinct species, naming it *Pagrus acarne*. Cuvier (1830:193) first placed *Pagrus acarne* in the genus *Pagellus*, in which the species is currently classified (Reinboth 1961; Wheeler, 1969; Tortonese, 1973). The distinctive color pattern of the species contributed to reduce the number of redescriptions and misidentification. Thus, *Pagellus owenii* Günther, 1859 represents the sole junior synonym.

During a survey of early nineteenth century ichthyological lit-

(1) Dipartimento di Scienze dell'Ambiente e del Territorio, Università di Milano-Bicocca, Piazza della Scienza 1, 20126 Milano, ITALY. [paolo.parenti@unimib.it]

(2) Department of Ichthyology, California Academy of Sciences, Golden Gate Park, San Francisco, California 94118-4599, USA.

erature we discovered that the axillary seabream was actually described and illustrated five years before Risso by a Spanish medical doctor and surgeon, Leonardo Perez, who, noticing the distinctive axillary spot, named it *Sparus axilaris* (Perez 1820: 97, pl.). The article was published in a Spanish journal, *Periódico de la Sociedad Médico-Quirúrgica de Cadiz*, with the text in Spanish and the formal description of the new species in Latin. A complete translation is here reported. *Sparus axilaris* sp. n. [in a footnote the author explained that with these terms he indicates that the species was new to science], commonly known as *Besugo* [in a second footnote the author remembered that this is the name used in Andalusia]. *Sparus axilaris*: a black spot at the base of pectoral fin; body completely pale; caudal fin forked. P. 19 V. 1/5 A. 3/10 D. 11/12 C. 22 Br. 5. Head moderately large; eye black, iris silvery; two nostrils: opercle three-foiled, scaled; incisive teeth conical, molars teeth strong, in several rows; tongue free and naked. Body compressed, as pale as palm; all fins pale except the pectoral, bearing a black spot; lateral line close to the dorsal profile; vent median. Off Andalusia, abundant mainly off Cadiz: gregarious with other species of sea breams; feed on algae; tasty, white and wholly covered by well attached scales: for this reason has been captured for many years.

Review of the short but precise description made by Perez and examination of the original illustration (Fig. 1) leaves no doubt that *Sparus axilaris* represents an earlier name for the species presently known as *Pagellus acarne*, over which it has priority. However, to our knowledge, *S. axilaris* has never been used as valid name since its description, and it has been ignored through time. The first person mentioning *S. axilaris* in ichthyological publications was Machado (1857), who listed it into synonymy of *Pagrus acarne* in a checklist of fishes from Cadiz adjacent areas. While article 23.1 of the International Code of Zoological Nomenclature states that "The valid name of a taxon is the oldest available name applied to it", the Code recognizes also that "the principle of priority is to be used to promote stability and it is not intended to be used to upset a long-accepted name..." (art. 23.2). For this reason the Code contains provisions that modify the automatic application of the principle of priority on occasions when its application would be destructive of stability and cause of confusion. Specifically, to allow "reversal of precedence" of the two names two conditions should be met: (1) the older name has not been used as valid since 1899 (article 23.9.1.1) and (2) the younger name 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). To our knowledge the combination *Sparus axilaris* has never been used as valid name to indicate the axillary sea breams and both conditions of article 23.9.1 are satisfied. Thus, *Pagellus acarne* (Risso, 1827) is here regarded as valid, qualifying it as a *nomen protectum*, while the name *Sparus axilaris* Perez, 1820 is recognized as invalid, qualifying it as a *nomen oblitum*. As

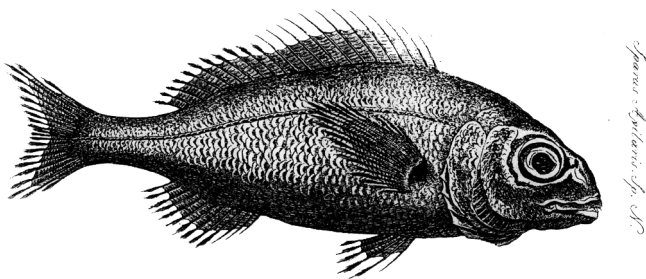


Figure 1. - Reproduction of the original illustration of *Sparus axilaris* Perez, 1820.

evidence that the conditions of article 23.9.1.2 have been met, the following list of publications is included: Wheeler, 1969; Tortonese, 1973; Nijssen and de Groot, 1974; Sola and Cautadella, 1978; Cano *et al.*, 1981; Domanevskaya, 1982; Andaloro, 1983; Domanevskaya and Patokina, 1984; Karrer, 1984; Kotlyar, 1984; Maignet and Ly, 1986; Bauchot and Hureau, 1990; Buxton and Garratt, 1990; Swaby and Potts, 1990; Robins *et al.*, 1991; Tsimenides *et al.*, 1991; Alegre *et al.*, 1992; Pipitone and Andaloro, 1995; Arruda, 1997; Goncalves *et al.*, 1997; Merella *et al.*, 1997; Fricke, 1999; Demestre *et al.*, 2000; Barreiros *et al.*, 2002; Renones *et al.*, 2002.

**Acknowledgements.** - This work was supported by the National Science Foundation, which supplied a one-year exploratory grant to W.N. Eschmeyer for the Annotated Checklists of Fishes. The California Academy of Sciences Department of Ichthyology provided financial and technical support, in particular we thank Larry Currie who helped retrieve references.

## REFERENCES

- ALEGRE M., LLEONART J. & J. VENY, 1992. - *Especies pesqueres d'interés comercial. Nomenclatura oficial catalana*. 64 p. Barcelona: Departament de Cultura.
- ANDALORO F., 1983. - Résumé des paramètres biologiques sur *Pagellus acarne* de la mer Tyrrhénienne méridionale et de la mer Ionienne septentrionale. *FAO Fish. Rep.*, 266: 89-92.
- ARRUDA L.M., 1997. - Checklist of the marine fishes of the Azores. *Arq. Mus. Bocage (n. s.)*, 3: 13-163.
- BARREIROS J.P., SANTOS R.S. & A.E. DE BORBA, 2002. - Food habits, schooling and predatory behaviour of the yellowmouth barracuda, *Sphyræna viridensis* (Perciformes: Sphyrænidae) in the Azores. *Cybium*, 26(2): 83-88.
- BAUCHOT M.-L. & J.C. HUREAU, 1990. - Sparidae. In: Checklist of the Fishes of the Eastern tropical Atlantic, Vol. 2 (Quéro J.-C., Hureau J.-C., Karrer C., Post A. & L. Saldanha, eds), pp. 790-812. Paris: UNESCO.
- BÖHLKE E.B. & D.G. SMITH, 2002. - Type catalogue of Indo-Pacific Muraenidae. *Proc. Acad. Nat. Sci. Philad.*, 152: 89-172.
- BUXTON C.D. & P.A. GARRATT, 1990. - Alternative reproductive styles in seabreams (Pisces: Sparidae). *Environ. Biol. Fish.*, 28(1-4): 113-124.
- CAMPOS-DA-PAZ R., 2003. - Family Gymnotidae. In: Check List of the Freshwater Fishes of South and Central America (Reis R.E., Kullander S.O. & C. J. Ferraris Jr., eds), pp. 483-486. Porto Alegre, Brazil: Edipirus.
- CANO J., THODE G. & M.C. ALVAREZ, 1981. - Analisis cariológico de seis especies de esparidos del Mediterraneo. *Genet. Iber.*, 33(3-4): 181-188.
- CUVIER G., 1830. - Des Sparoïdes. In: Histoire naturelle des Poissons, Vol. 6 (Cuvier G & A. Valenciennes, eds), pp. 1-468. Paris: Levrault.
- DAGET J., 1968. - Les poissons de l'édition allemande du règne animal de Cuvier. *Bull. Mus. natn. Hist. nat.*, 2<sup>e</sup> Sér., 39(6): 1057-1059.
- DEMESTRE M., SANCHEZ P. & P. ABELLO, 2000. - Demersal fish assemblages and habitat characteristics on the continental shelf and upper slope of the North-Western Mediterranean. *J. Mar. Biol. Assoc. UK*, 80(6): 981-988.
- DOMANEVSKAYA M.V., 1982. - Specifics of the distribution of *Pagellus acarne* (Sparidae) in the Southwestern Mediterranean Sea. *J. Ichthyol.*, 22(2): 127-130.

- DOMANEVSKAYA M.V. & F.A. PATOKINA, 1984. - Feeding of the large-eyed dogtooth, *Dentex macrophthalmus*, and Spanish bream, *Pagellus acarne*, from the central-Eastern Atlantic Ocean. *J. Ichthyol.*, 24(5): 107-112.
- ESCHMEYER W.N., 2003. - Introduction to the series annotated checklists of fishes. *Calif. Acad. Sci. Annot. Checklists Fishes*, 1:1-5.
- FISCHER W., BAUCHOT M.-L. & M. SCHNEIDER, 1987. - Fiches FAO d'Identification des Espèces pour les Besoins de la Pêche. Méditerranée et mer Noire. Zone de Pêche 37, Vol. 2, pp. 761-1530. Rome: FAO.
- FRICKE R., 1999. - Annotated checklist of the marine and estuarine fishes of Germany, with remarks of their taxonomic identity. *Stuttg. Beitr. Naturk. Ser. A (Biol.)*, 587: 1-67.
- GILL A.C. & J.B. HUTCHINS, 2002. - *Paramonacanthus oblongus*, the correct name for the Indo-Pacific fish currently called *P. japonicus*, with a recommendation on the nomenclature of *Stephanolepis cirrhifer* (Tetraodontiformes, Monacanthidae). *Rec. West. Aust. Mus.*, 21: 107-109.
- GILL A. & J.E. RANDALL, 1999. - *Julis horsfieldii* Valenciennes in Cuvier et Valenciennes, 1839, an unused senior synonym of *Cichlops cyclophthalmus* Müller et Troschel, 1849 (Teleostei: Pseudochromidae). *Rev. Fr. Aquariol.*, 25(3-4): 95-98.
- GOLANI D., ORSI-RELINI L., MASSUTÍ E. & J.-P. QUIGNARD, 2002. - CIESM Atlas of Exotic Species in the Mediterranean. Vol. 1, Fishes. 256 p. Monaco: CIESM Editions.
- GONCALVES J.M.S., BENTES L., LINO P.G., RIBEIRO J., CANARIO A.V.M. & K. ERZINI, 1997. - Weight-length relationships for selected fish species of the small-scale demersal fisheries of the South and South-West coast of Portugal. *Fish. Res.*, 30: 253-256.
- ICZN (International Code on Zoological Nomenclature), 1999. - International code of zoological nomenclature, 4th Edit. London: International Trust for Zoological Nomenclature.
- KARRER C., 1984. - Beschreibung von Jugendstadien dreier Spariden-Arten aus dem nordwest-afrikanischen Auftriebsgebiet (Teleostei, Perciformes). *Arch. Fisch. Wiss.*, 35(1/2): 53-90.
- KOTLYAR A.N., 1984. - Dictionary of Names of marine Fishes on the six Languages. 288 p. Moscow: All Union Research Institute of Marine Fisheries and Oceanography.
- MACHADO A., 1857. - Catálogo de los peces que habitan ó frecuentan las costas de Cadiz y Huelva con inclusion de los del Rio Guadalquivir. 29 p. Sevilla: Libreria Española y Extranjera.
- MAIGRET J. & B. LY, 1986. - Les Poissons de Mer de Mauritanie. 213 p. Compiègne, France: Sciences naturelles.
- MERELLA P., QUETGLAS A., ALEMANY F. & A. CARBONELL, 1997. - Length-weight relationship of fishes and cephalopods from the Balearic Islands (Western Mediterranean). *Naga ICLARM Quart.*, 20(3/4): 66-68.
- NIJSSEN H. & S.J. DE GROOT, 1974. - Catalogue of fish species of the Netherlands. *Beaufortia*, 21: 173-207.
- PARENTI P., 2002a. - *Muraena compressa* Walbaum, 1792, an invalid senior synonym of the snake mackerel *Gempylus serpens* Cuvier, 1829. *Carib. J. Sci.*, 38(3-4): 267-268.
- PARENTI P., 2002b. - On the species of the genus *Balistes* described by Johann Julius Walbaum (1792). *Cybium*, 26(4): 309-316.
- PARENTI P. & T.W. PIETSCH, 2003. - *Ostracion knorrii* Walbaum, 1792, a senior synonym of the striated frogfish *Antennarius striatus* (Shaw and Nodder, 1794) invalidated by "Reversal of Precedence". *Copeia*, 2003(1): 187-189.
- PEREZ L., 1820. - Descripción de una especie no conocida del género *Sparus*. *Per. Soc. Méd.-Quirúrg. Cadiz*, 1: 91-98.
- PIPTONE C. & F. ANDALORO, 1995. - Food and feeding habits of juvenile greater amberjack, *Seriola dumerili* (Osteichthyes, Carangidae) in inshore waters of the central Mediterranean Sea. *Cybium*, 19(3): 305-310.
- RANDALL J.E. & P. PARENTI, 1999. - Rejection of nine old labrid fish names in order to conserve well-established taxa. *Rev. Fr. Aquariol.*, 26(1-2): 29-32.
- REINBOTH R., 1961. - L'espèce *Pagellus bogaraveo* (Brünnich), Sparidae, existe-t-elle? Contribution à une controverse systématique. *Vie Milieu*, 12(1): 105-111.
- RENONES O., POLUNIN N.V. & R. GONI, 2002. - Size related dietary shifts of *Epinephelus marginatus* in a Western Mediterranean littoral ecosystem: An isotope and stomach content analysis. *J. Fish Biol.*, 61(1): 122-137.
- RISSO A., 1810. - Ichthyologie de Nice, ou Histoire naturelle des Poissons du Département des Alpes-Maritimes. 414 p. Paris: F. Schoell.
- RISSO A., 1827. - Histoire naturelle des principales Productions de l'Europe méridionale, et particulièrement de celles des Environs de Nice et des Alpes-Maritimes, Vol. 3. 496 p. Paris: Levrault.
- ROBINS C.R., BAILEY R.M., BOND C.E., BROOKER J.R., LACHNER E.A., LEA R.N. & W.B. SCOTT, 1991. - World fishes important to North Americans. Exclusive of species from the continental waters of the United States and Canada. *Am. Fish. Soc. Spec. Publ.*, 21: 1-243.
- RONDELET G., 1554. - De piscibus marinis, in quibus verae Piscium effigies expressae sunt,... 583 p. Leyden: Matthias Bonhomme.
- SOLA L. & S. CATAUDELLA, 1978. - Prime osservazioni sulla cariologia degli sparidi Mediterranei. *Boll. Zool.*, 45(2): 242.
- SWABY S.E. & G.W. POTTS, 1990. - Rare British marine fishes - Identification and conservation. *J. Fish Biol.*, 37(Suppl. A): 133-143.
- TORTONESE E., 1973. - Sparidae. In: Check-List of the Fishes of the North-Eastern Atlantic and of the Mediterranean, Vol. 1 (Hureau J.-C. & T. Monod, eds), pp. 405-415. Paris: UNESCO.
- TSIMENIDES N., TSERPES G., MACHIAS A. & A. KALLIANIOTIS, 1991. - Distribution of fishes on the Cretan shelf. *J. Fish Biol.*, 39(5): 661-672.
- WEBER C., 1992. - Révision du genre *Pterygoplichthys* sensu lato (Pisces, Siluriformes, Loricariidae). *Rev. Fr. Aquariol.*, 19(1-2): 1-36.
- WHEELER A., 1969. - The Fishes of the British Isles and North-West Europe. 363 p. London: Macmillan.
- WHITEHEAD P.J.P., 1964. - *Xiphias platypterus* Shaw and Nodder, 1792 (Pisces): Application to validate the *nomen oblitum* for the Indian Ocean sailfish (genus *Istiophorus*). *Bull. Zool. Nomencl.*, 21(6): 444-447.
- WHITEHEAD P.J.P., 1985. - FAO species catalog. Clupeoid fishes of the world (suborder Clupeoidei). Part 1 - Chirocentridae, Clupeidae and Pristigasteridae. *FAO Fish. Synop.*, 125(7): 1-303.
- WHITEHEAD P.J.P., BAUCHOT M.-L., HUREAU J.-C., NIELSEN J. & E. TORTONESE, 1986. - Fishes of the North-Eastern Atlantic and the Mediterranean, Vol. II. pp. 517-1007. Paris: UNESCO.

Reçu le 25 novembre 2003

Accepté pour publication le 09 février 2004.