

## Validation of the genus *Eugerres* Jordan & Evermann, 1927 (Teleostei, Perciformes, Gerreidae)

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**Abstract.** The objective of the present study was the validation of the monotypic genus *Eugerres* based on the examination of type material and on the study of external morphology, cephalic and caudal fin skeletons and the sagitta otolith. The material studied was obtained from several Brazilian localities and from collections. The serrate suborbital 1, the caudal fin and the structure of the sagitta otolith revealed that the morphology of these structures are distinct from the other genera of the Gerreidae.

**Key words:** Fish, morphology, otolith, sagitta

**Resumo. Validação do gênero *Eugerres* Jordan & Evermann, 1927 (Teleostei, Perciformes, Gerreidae).** A validação do gênero monotípico *Eugerres* foi baseada no estudo da morfologia externa, do esqueleto cefálico, da nadadeira caudal e do otólito sagitta. O material estudado foi coletado em diversas regiões do Brasil e proveniente de várias coleções. O suborbital 1 é serrilhado, a nadadeira caudal e a estrutura do otólito sagitta revelaram que a morfologia dessas estruturas é distinta de outros gêneros de Gerreidae.

**Palavras-chave:** Peixe, morfologia, otólito, sagitta

### INTRODUCTION

The Gerreidae family, order Perciformes (GREENWOOD *et al.*, 1966) contains about 40 species (BÖHLKE & CHAPLIN, 1968). Fifteen genera are cited in the literature for the Gerreidae: *Gerres* Quoy & Gaimard, 1824; *Diapterus* Ranzani, 1840; *Podager* Gistel, 1848; *Catochaenum* Cantor, 1849; *Pentaprion* Bleeker, 1850; *Eucinostomus* Baird & Girard, in Baird, 1855; *Synistius* Gill, 1862; *Moharra* Poey, 1875; *Gerreomorpha* Alleyne & Macleay, 1877; *Parequula* Steindachner, 1879; *Ulaema* Jordan & Evermann, Ms in Jordan, 1895; *Xystaema* Jordan & Evermann Ms, in Jordan, 1895; *Pertica* Fowler 1904; *Eugerres* Jordan & Evermann, 1927 and *Parachus* Whitley, 1930.

Since the species of the genus *Eugerres* Jordan & Evermann, 1927 have been synonymized into *Diapterus* Ranzani, 1840, we consider in this

paper the validation of this genus, based on the orbital 1 (lacrymal) serrate, body height 2.0 to 2.7 times the average length and dark, sometimes greenish, longitudinal bands.

There are relatively few papers dealing with the validation of the samples for species in *Eugerres* genus. Since it is a still taxonomically confused genus, the purpose of this work is to correctly characterize it, allowing further research in the group.

The present validation is based on the examination of type-material in addition to the study of the structure of the caudal fin, the sagitta otolith and a great number of samples from several localities. The only Brazilian species recognized for the genus is *Eugerres lineatus* (Humboldt & Valenciennes in Humboldt & Bonpland, 1811).

## MATERIAL AND METHODS

The inspected material already listed in ANDREATA (1988a,b) were kindly provided by the following institutions: AMNH - American Museum of Natural History, New York, USA; MNH - Museum of Natural History of London; CAS - California Academy of Sciences, San Francisco; FSBC - Florida State Board of Conservation, St. Petersburg; GCRL- Gulf Coast Research Laboratory, Mississippi; MCP - Museu de Ciências da Pontifícia Universidade Católica do Rio Grande do Sul; MCZ - Museum of Comparative Zoology, Harvard University, Massachusetts; MNHN - Muséum National D'Histoire Naturelle, Paris; MNRJ - Museu Nacional, Rio de Janeiro. MZUSP - Museu de Zoologia da Universidade de São Paulo, São Paulo; NMW- Natushistorisches Museum Wien; RMNH - Rijksmuseum Van Natuurlijke Historie, Leiden; SU- Stanford University (incorporated to California Academy of Sciences), San Francisco; UF/ FSU - Florida State Museum, University of Florida, Gainesville; UMMZ - University of Michigan, Museum of Zoology, Michigan; NMNH- National Museum of Natural History, Washington DC; USU - Universidade Santa Úrsula, Rio de Janeiro; ZMA - Zoologisch Museum Amsterdam (Universiteit van Amsterdam), Amsterdam; ZMK - Zoologisk Museum Kobenhavn.

## RESULTS AND DISCUSSION

### *EUGERRES JORDAN & EVERMANN, 1927*

#### DIAGNOSIS

Suborbital 1 serrate. High body, height within 2.0 to 2.7 times the standard length. The eyes occupy 2.7 to 3.6 the head length. Preopercle serrate. Infraorbital 2 sometimes serrate in adults. Interoperculum, suboperculum and operculum smooth. 8-13 (15 in some samples) traces in the

inferior part of the branquial arch; 39-47 scales over the lateral line, 4-6 reaching the dorsal fin and 9-10 reaching the pelvic fin.

Descriptions, comments and drawings are found in ANDREATA (1988a,b).

ANDREATA (1979) dealt with the osteology of the caudal fin of *Diapterus brasilianus* (Cuvier, 1830), latter ANDREATA & BARBIÉRI (1981) have studied the skull's osteology of the same species, pointing out the specialized form found within the Acanthopterygii, the development of the super-occipital comb, the absence of an orbitosphenoid and the rudimentary dentition.

ANDREATA (1987, 1988a,b) reviewing the genera *Diapterus* Ranzani, 1840 and *Eugerres* Jordan & Evermann, 1927 placed *Eugerres* synonymous of *Diapterus* for not taking as important the serrate feature of the supraorbital 1.

The analysis of the paratype (UMMZ 157675) of *Eugerres awlae* Schultz, 1949 (Salina Rica, Lago Maracaibo, Venezuela) considered it synonymous of *Eugerres lineatus* Jordan in Jordan & Clark (1930) for showing the suborbital 1 and the preopercle serrate; while CERVIGON (1966) considered it a distinct species from *Eugerres lineatus*.

DECKERT & GREENFIELD (1987) shouldn't have designated the holotype and the paratype of *Eugerres plumieri* Jordan in Jordan & Clark (1930) and *Eugerres brasilianus* Jordan in Jordan & Clark (1930) based on material not described or referred by the species author.

EVERMANN & MEEK (1883) have studied *Gerres patao* Poey, 1858 and *Gerres lineatus* Cuvier, 1829 as distinct species but EVERMANN & MEEK (1886) included

*Gerres patao* in the synonymy of *Gerres brasilianus* Cuvier in Cuvier & Valenciennes (1830). In the present paper, the latter species is considered synonymous of *Eugerres lineatus* for showing the lacrymal serrate and body with longitudinal dark stripes.

The studied holotype (SU 2775) of *Gerres embrix* Jordan & Starks in Jordan & Evermann (1989) (South California, USA) is at no point different from the description of *Eugerres lineatus*.

The examination of the lectotypes of *Gerres periche* (EVERMANN & RADCLIFFE, 1971) (USNM 077743 – Tumbes, Peru) and (MNHN 9447- from the Antilles), paralectotypes of *Gerres plumieri* (MNHN 5530-Porto Rico), MNHN 5485 and MNHN 9452 (from Martinica), the lectotype of *Gerres brasilianus* (MNHN 5510-Brazil), the lectotypes of *Gerres mexicanus* Steindachner, 1863 (from Teapa river, Mexico) and *Gerres brevimanus* Günther, 1864 (From Chiapa, Mexico) have revealed to be all the same species (*Eugerres lineatus*) and therefore all synonymized.

EVERMANN & MEEK (1886) treated *Gerres lineatus*, *Gerres brasilianus* and *Gerres plumieri* as distinct *taxa*.

RANDALL & VERGARA (1977) considered *Eugerres brasilianus* and *Eugerres plumieri* as valid species and LÉON *et al.* (1982) took *E. plumieri* as valid species. We don't agree because the examination of a great number of specimens, including type-material, does not corroborate the importance of these characters and consequently they have been synonymized.

MEEK & HILDEBRAND (1925) considered *Diapterus plumieri* Ribeiro, 1915, *Diapterus brasilianus* Ribeiro, 1915 and *Diapterus periche* Meek & Hildebrand, 1925 as valid species. However, after examination

of two samples of *Gerres lineatus* belonging to the collection of the Smithsonian Institution (USNM 030982) collected at the typical locality (Acapulco, Mexico) that have served as basis for the redescription of MEEK & HILDEBRAND (1925), we agreed that they are all *Eugerres lineatus*.

EVERMANN & RADCLIFFE (1917) and ALVAREZ & SOLANO (1983) accepted *Gerres periche* and *Eugerres lineatus* as distinct *taxa*. Nevertheless, it has been stated that *G. periche* has the preopercular and the suborbital 1 serrate and the body with longitudinal dark bands, features these diagnostics of *Eugerres lineatus* being this species synonymized.

In this paper, we consider *Eugerres* distinct from *Diapterus* because it displays the suborbital 1 smooth, while *Eugerres* has a serrate suborbital 1.

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