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ADDITIONS AND CORRECTIONS TO THE LIST OF FRESHWATER FISHES OF PERU

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ABSTRACT

Data from the literature and examination of recently collected specimens in the ichthyological collections of the Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, allow us to present herein numerous additions and corrections to the Checklist of the Freshwater Fishes of Peru. This taxonomic revision has resulted in the addition of 78 new species, and the establishment of 36 new combinations or taxonomic statuses. Four incorrectly spelled names are corrected. Sixteen species previously listed for Peru have been found not to occur in the country, bringing the current number of Peruvian freshwater species to 855.

RESUMEN

Los datos de literatura y la revisión de especímenes recientemente colectados, en la colección ictiológica del Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, nos ha permitido presentar aquí varias adiciones y correcciones a la Lista de los Peces de Agua Dulce del Perú. Esta revisión taxonómica ha resultado en la adición de 78 nuevas especies, y el establecimiento de 36 nuevas combinaciones o estatus taxonómicos. Cuatro nombres mal citados son corregidos. Dieciséis especies previamente listadas para el Perú no se encuentran en el país, dando un número de 855 especies registradas para las aguas continentales del Perú.

INTRODUCTION

In the time between the publications of Fowler (1945) and Ortega (1991), the number of freshwater fish species recorded for Peru has increased substantially, due both to the discovery of new species to science and significant range extensions for species previously known from other parts of South America.

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Several years of fieldwork by the authors, in unexplored or poorly sampled places, particularly in the Madre de Dios and Napo basins, revealed a significant number of additions to the ichthyofauna of Peru. Moreover, recent systematic revisions and descriptions of new species to science have given us a better understanding of the taxonomic status of relevant taxa.

Fowler (1945) catalogued 519 freshwater fish species, while Ortega & Vari (1986) listed 736, and Ortega (1991) increased that number to 797. In this paper, one name counted twice by mistake in the latter list have been eliminated; 78 new species are added; and 36 names are corrected, of which 16 are newly excluded from the 1986 and 1991 lists, increasing the number of the reported freshwater fishes of Peru to 855.

METHODS AND MATERIALS

The list below follows the taxonomic arrangement employed by Ortega & Vari (1986). Under each family, genera and species are cited alphabetically. The scientific name is followed by the author's name and year of publication. The institutional abbreviation MUSM (Museo de Historia Natural, Universidad Nacional Mayor de San Marcos) is given when the species is catalogued at the museum. General locality data are given in brackets [AM: Amazonas, CU: Cuzco, HU: Huánuco, LO: Loreto, MD: Madre de Dios, PA: Pasco, PU: Puno, UC: Ucayali, TU: Tumbes]. Main bibliographic references follow localities. Synonymized names are indicated after the valid species, and the bibliographic source is given in brackets. And orders and families are listed including numbers of genera and species. (Table 1)

ADDITIONS

The following list presents the new records to the checklist of freshwater fishes of Peru. We included both recently described species cited for the country, and new reports of previously described species.

POTAMOTRYGONIDAE

Potamotrygon orbignyi (Castelneau, 1855). MUSM [LO, PA].- Rosa, 1985: 288.

CHARACIFORMES

CHARACIDAE

Acestrorhynchus minimus Menezes, 1969. MUSM [LO].- Menezes, 1969: 78.

Acestrorhynchus nasutus Eigenmann, 1912. MUSM [LO].- Menezes, 1969: 73

Astyanacinus multidentis Pearson, 1924. MUSM [MD].- Pearson, 1924: 41.

Astyanax anteroides Géry, 1965. MUSM [LO, UC].- Géry, 1965: 16.

Astyanax zonatus Eigenmann, 1908. MUSM [LO].- Eigenmann, 1908: 95.

Ceratobranchia delotaenia Chernoff & Machado-Allison, 1990. MUSM [CU, MD].- Chernoff & Machado-Allison, 1990: 283.

Characidium bolivianum Pearson, 1924. MUSM [MD, PU].- Pearson, 1924: 31.

Charax caudimaculatus Lucena, 1987. MUSM (Holotype and paratypes) [MD].- Lucena, 1987: 32.

Cheirodon drepanon (Fowler, 1913). MUSM [MD].- Fowler, 1913: 529.

Creagrutus anary Fowler, 1913. MUSM [MD].- Fowler, 1913: 552.

Encynopotamus biserialis (Garman, 1890). MUSM [LO, UC, MD].- Lucena, 1990: 39.

Gnathocharax steindachneri Fowler, 1913. MUSM [LO].- Fowler, 1913: 561.

Hypheobrycon copelandi Durbin, 1908. MUSM [LO, UC].- Eigenmann, 1908: 101.

Hypheobrycon serpa Durbin, 1908. MUSM [LO, UC].- Eigenmann, 1908: 100.

Hemibrycon jabonero (Schultz, 1944). MUSM [AM, MD].- Géry, 1977: 379.
Iguanodectes purusi (Steindachner, 1908). [LO].- Géry, 1993: 99.
Klausewitzia ritae Géry, 1965. [LO].- Buckup, 1993: 135.
Knodus septentrionalis Géry, 1972. MUSM [LO].- Géry, 1977: 395.
Knodus smithi (Fowler, 1913). MUSM [MD].- Fowler, 1913: 557.
Leptagoniates pi Vari, 1978. MUSM [LO, UC, MD].- Vari, 1978: 184.
Lonchogenys ilisha Myers, 1927. MUSM [LO].- Géry, 1966: 285.
Melanocharacidium dispilomma Buckup, 1993. MUSM [LO].- Buckup, 1993: 120.
Melanocharacidium rex (Böhlke, 1958). MUSM [AM].- Buckup, 1993: 134.
Microcharacidium weitzmani Buckup, 1993. [LO].- Buckup, 1993: 141.
Moenkhausia barboursi Eigenmann, 1908. MUSM [LO, MD].- Eigenmann, 1908: 103.
Monotocheiron pearsoni Eigenmann, 1924. MUSM [MD].- Pearson, 1924: 34.
Odontocharacidium aphanes (Weitzman & Kanazawa, 1977). [LO].- Buckup, 1993: 136.
Poptella compressa (Günther, 1864). [LO, UC, MD].- Reis, 1989: 20.
Tyttobrycon dorsimaculatus Géry, 1973. MUSM [MD].- Géry, 1973: 118.
Tyttosax madeirae Fowler, 1913. MUSM [LO].- Fowler, 1913: 564.

CTENOLUCIIDAE

Boulengerella xyreques Vari, 1995. [LO].- Vari, 1995: 82.
Boulengerella cuvieri (Agassiz, 1829). MUSM [LO].- Vari, 1995: 74.

CURIMATIDAE

Curimatella dorsalis (Eigenmann & Eigenmann, 1889). MUSM [LO, UC].- Vari, 1990: 11.
Curimata roseni Vari, 1989. MUSM [LO, UC].- Vari, 1989: 35.
Cyphocharax festivus Vari, 1992. MUSM (paratypes) [LO, UC].- Vari, 1992: 45.
Cyphocharax plumbeus (Eigenmann & Eigenmann, 1889). [LO].- Vari, 1992: 54.
Cyphocharax vexillapinnus Vari, 1992. MUSM (paratypes) [LO].- Vari, 1992: 39.

ANOSTOMIDAE

Leporinus agassizi Steindachner, 1876. MUSM [LO].

HYPOPOMIDAE

Brachyhypopomus pinnicaudatus (Hopkins, 1991). MUSM [MD].- Mago-Leccia, 1994: 48.- *Hypopomus pinnicaudatus* Hopkins, 1991.- [Hopkins, 1991: 154].

RHAMPHICHTHYIDAE

Gymnorhamphichthys hypostomus Ellis, 1912. MUSM [MD].- Mago-Leccia, 1994: 42.
Gymnorhamphichthys rondoni Miranda-Ribeiro, 1920. MUSM [LO, UC].- Mago-Leccia, 1994: 42.
Rhamphichthys lineatus Castelnau, 1855. [LO, UC].- Mago-Leccia, 1994: 42.
Rhamphichthys pantherinus Castelnau, 1855. MUSM [LO, UC].- Mago-Leccia, 1994: 41.

SILURIFORMES

DORADIDAE

Doras eigenmanni (Boulenger, 1895). MUSM [UC].- Eigenmann, 1925: 344.
Opsodoras trimaculatus (Boulenger, 1898). MUSM [LO, UC].- Eigenmann, 1925: 352.
Pterodoras lentiginosus (Eigenmann, 1917). MUSM [LO, UC].- Eigenmann, 1925: 313.

AUCHENIPTERIDAE

Entomocorus benjamini Eigenmann, 1917. MUSM [MD].- Eigenmann, 1917: 344.

Tatia creutzbergi Boeseman, 1953. MUSM [LO].- Mees, 1974: 77.

AGENEIOSIDAE

Ageneiosus marmoratus Eigenmann, 1912. [LO].- Walsh, 1990: 340.

Ageneiosus vittatus Steindachner, 1908. MUSM [LO].- Walsh, 1990: 251.

PIMELODIDAE

Aguarunichthys torosus Stewart, 1986. [AM].- Stewart, 1986: 663.

Brachyplatystoma flavicans (Castelanu, 1855). MUSM [MD].

Cetopsorhamdia phantasia Stewart, 1985. MUSM [LO, MD].- Stewart, 1986: 339.

Exallodontus aguanai Lundberg, 1991. MUSM [LO, UC, MD].- Lundberg, 1992: 840.

Gladioglanis conquistador Lundberg, Bornbusch & Mago-Leccia, 1991. MUSM [LO].-
Lundberg et al., 1991: 190.

Goslinia platynema (Boulenger, 1888). MUSM [LO, MD].- Burgess, 1989: 282.

Platynemichthys notatus (Schomburgk, 1841). MUSM [MD].

Zungaro zungaro (Humboldt, 1833). MUSM [LO, UC, MD].- Silfvergrip, 1992: 305.

CETOPSIDAE

Bathycetopsis oliveirai Lundberg & Rapp Py-Daniel, 1994. MUSM [LO].- Lundberg & Rapp
Py-Daniel, 1994: 381

Paracetopsis bleekeri Guichenot, 1862. MUSM [TU].- Oliveira, 1988: 88.

ASPREDINIDAE

Agmus lyriformis Eigenmann, 1912. MUSM [LO].- Burgess, 1989: 298.

TRICHOMYCTERIDAE

Ituglanis amazonicus (Steindachner, 1883). MUSM [MD].- Costa, 1993: 43.

Megalocentor echthrus Pinna & Britski, 1991. [UC].- Pinna & Britski, 1991: 113.

Ochmachanthus reinhardti (Steindachner, 1883). MUSM [LO, UC].- Burgess, 1989: 324.

Tridentopsis pearsoni Myers, 1925. MUSM [LO, MD].- LaMonte, 1939: 1.

LORICARIIDAE

Apistoloricaria condei Isbrücker & Nijssen, 1986. MUSM [LO].- Isbrücker & Nijssen, 1986: 103.

Hypoptopoma joberti (Vaillant, 1880). [MD].- Schaefer, 1991: 37.

Hypoptopoma steindachneri Boulenger, 1895. [LO].- Schaefer, 1991: 37.

Liposarcus disjunctivus Weber, 1991. MUSM [MD].- Weber, 1992: 12.

Panaque albomaculatus Kanazawa, 1958. MUSM [AM, LO, UC].- Schaefer & Stewart, 1993: 327.

Panaque gnomus Schaefer & Stewart, 1993. [AM].- Schaefer & Stewart, 1993: 333.

Panaque nocturnus Schaefer & Stewart, 1993. MUSM [AM].- Schaefer & Stewart, 1993: 330.

BELONIDAE

Potamorrhaphis eigenmanni Miranda-Ribeiro, 1915. MUSM [MD].- Collette, 1982: 738.

RIVULIDAE

Moema pepotei Costa, 1992. MUSM [MD].- Costa, 1992: 619 and pers. comm.

CICHLIDAE

Apistogramma norberti Staeck, 1991. [LO].- Staeck, 1991: 139.

Mesonauta mirificus Kullander and Silfvergrip, 1991. MUSM (paratypes) [LO, UC].- Kullander & Silfvergrip, 1991: 430.

Tahuantinsuyoia chipi Kullander, 1991. [HU, PA].- Kullander, 1991: 3.

CORRECTIONS

The following list corrects misspellings, wrongly cited authorships, recently proposed synonyms, and new specific combinations, as well as names deleted from the checklist, because of synonymy or erroneous identifications.

Incorrectly spelled names and wrong authorships

CURIMATIDAE

Curimata knerii Steindachner, 1877. MUSM [LO, UC].- Vari, 1989: 42.- *Curimata kneri* Steindachner, 1876.- [Ortega & Vari, 1986: 11].

Cyphocharax pantostictos Vari & Barriga, 1990. MUSM [LO].- Vari, 1992: 30.- *Cyphocharax pantosticus* Vari & Barriga, 1990.- [Ortega, 1991: 2].

Steindachnerina hypostoma (Boulenger, 1887). MUSM [LO, UC, MD].- Vari, 1991: 53. *Steindachnerina hypostoma* (Eigenmann & Eigenmann, 1889).- [Ortega, 1991: 2].

PIMELODIDAE

Calophysus macropterus (Lichtenstein, 1819). Eschmeyer & Bailey, 1990: 73.- *Callophysus macropterus* (Lichtenstein, 1819).- [Ortega & Vari, 1986: 14].

New combinations and synonymy

CHARACIDAE

Charax tectifer (Cope, 1870). MUSM [LO, UC, MD].- Lucena, 1987: 60.- *Moralesia tectifera* (Cope, 1870).- [Ortega & Vari, 1986: 10].

Pygocentrus nattereri (Kner, 1860). MUSM [LO, UC, MD].- Machado-Allison, 1985: 36.- *Serrasalmus nattereri* (Kner, 1860).- [Ortega & Vari, 1986: 9].

Salminus brasiliensis (Cuvier, 1816). MUSM [MD].- Gèry & Lauzanne, 1990: 120; *Salminus maxillosus* Valenciennes, 1849 (synonym).- [Ortega & Vari, 1986: 9].

CURIMATIDAE

Curimatella immaculata (Fernández-Yépez, 1948). [LO, UC].- Vari, 1990: 31.- *Curimata immaculata* (Fernández-Yépez, 1948).- [Ortega & Vari, 1986: 11].

Curimatella meyeri (Steindachner, 1882). MUSM [HU, LO, UC, MD].- Vari, 1990: 20.- *Curimata reticulata* Allen, 1942 (synonym).- [Ortega & Vari, 1986: 11].

Cyphocharax spiluroopsis (Eigenmann & Eigenmann, 1889). MUSM [LO, UC, MD].- Vari, 1992: 114.- *Curimata stigmatura* Fowler, 1940; *Curimatoides ucayalensis* Fowler, 1940 (synonyms).- [Ortega & Vari, 1986: 11].

Steindachnerina bimaculata (Steindachner, 1876). MUSM [LO, UC, MD].- Vari, 1992: 46.- *Curimata bimaculata* (Steindachner, 1876).- [Ortega & Vari, 1986: 11].

- Steindachnerina binotata* (Pearson, 1924) MUSM [LO, UC, MD].- Vari, 1991: 36.- *Curimata binotata* (Pearson, 1942).- [Ortega & Vari, 1986: 11].
- Steindachnerina dobula* (Günther, 1868). MUSM [LO, UC, MD].- Vari, 1991: 66.- *Curimata dobula* Günther, 1868; *Curimata nasa* Steindachner, 1882 (new combination and synonym).- [Ortega & Vari, 1986: 11].
- Steindachnerina guentheri* Eigenmann & Eigenmann, 1889. MUSM [LO, UC, MD].- Ortega, 1991: 2; Vari, 1991: 83.- *Curimata metae* Eigenmann, 1922; *Curimata robustula* (Allen, 1942) (synonyms).- [Ortega & Vari, 1986: 11].
- Steindachnerina leucisca* (Günther, 1868). MUSM [LO, UC, MD].- Vari, 1991: 32.- *Curimata leucisca* Günther, 1868.- [Ortega & Vari, 1986: 11].

GYMNOTIFORMES

APTERONOTIDAE

- Platyrosteronarchus macrostomus* (Günther, 1870). MUSM [UC].- Mago-Leccia, 1994: 37.- *Sternachorhamphus macrostomus* (Günther, 1870).- [Ortega & Vari, 1986: 12].

HYPOPOMIDAE

- Brachyhypopomus brevirostris* (Steindachner, 1868). MUSM [LO, UC].- Mago-Leccia, 1994: 48.- *Hypopomus brevirostris*. (Steindachner, 1868).- [Ortega & Vari, 1986: 9].

DORADIDAE

- Pseudodoras niger* (Valenciennes, 1817). MUSM [LO].- Eschmeyer, 1990: 286.- *Oxydoras niger* (Valenciennes, 1833) (wrong date).- [Ortega & Vari, 1986: 13].

PIMELODIDAE

- Hypophthalmus edentatus* Spix, 1829.- [Ortega & Vari, 1986: 15].
- Hypophthalmus marginatus* Valenciennes, 1879.- [Ortega & Vari, 1986: 15].
- Hypophthalmus* was considered before in its own family Hypophthalmidae (Ortega & Vari, 1986). It is included now among the Pimelodidae, by the possession of some derived characters characteristic of that family, as discussed by Stewart (1986) and Lundberg et al. (1991).

LORICARIIDAE

- Glyptopterichthys gibbiceps* (Kner, 1845). MUSM [UC, MD].- Weber, 1992: 17.- *Pterygoplichthys gibbiceps* (Kner, 1845).- [Ortega & Vari, 1986: 18].
- Glyptopterichthys punctatus* (Kner, 1854). MUSM [MD].- Weber, 1992: 24.- *Pterygoplichthys punctatus* (Natterer, 1854).- [Ortega & Vari, 1986: 18].
- Liposarcus pardalis* (Castelnaud, 1855). MUSM [LO, UC].- Weber, 1992: 10.- *Pterygoplichthys pardalis* (Castelnaud, 1855); *Pterygoplichthys jeansianus* (Cope, 1874) (synonym).- [Ortega & Vari, 1986: 18].
- Oxyropsis carinatum* (Steindachner, 1879). MUSM [LO, UC, MD].- Schaefer, 1991: 39.- *Hypoptopoma carinatum* Steindachner, 1879.- [Ortega & Vari, 1986: 17].

Species newly excluded from the checklist

CHARACIDAE

- Charax gibbosus* (Linnaeus, 1758).- [Ortega & Vari, 1986: 9]. This species is considered restricted to Guiana and Surinam (Lucena, 1987).

Charax pauciradiatus (Günther, 1864).- [Ortega & Vari, 1986: 9]. Restricted to the basin of the lower Rio Amazonas and Rio Capim, Pará (Lucena, 1987).

Poptella orbicularis (Valenciennes, 1849) and *Brachyhalcinus guianensis* Boeseman, 1952.- [Ortega & Vari, 1986: 7-9].- New combination and synonym of *Brachyhalcinus orbicularis* (Valenciennes, 1849). Occurs only in Guyana and Surinam (Reis, 1989).

CTENOLUCIIDAE

Boulengerella lucius (Cuvier, 1816).- *B. lucia* (Cuvier, 1817).- [Ortega & Vari, 1986: 10]. Restricted to the Rio Amazonas (Brasil) and Rio Orinoco basins (Vari, 1995).

CURIMATIDAE

Curimata spilura Günther, 1864.- [Ortega & Vari, 1986: 11]. The current combination is *Cyphocharax spilurus* (Günther, 1864) [Vari, 1992: 100].

This species is restricted to the Cuyuni and the Essequibo Rivers in Guyana, and possibly various localities in the Rio Orinoco and Upper Rio Negro in eastern Venezuela (Vari, 1992).

PIMELODIDAE

Perugia agassizii (Steindachner, 1875). [Ortega & Vari, 1986: 14]. Now in *Pinirampus* Bleeker, probably synonymous with *P. pinirampu* Spix, 1829.- [Stewart, 1986: 669].

LORICARIIDAE

Pterygoplichthys multiradiatus (Hancock, 1828).- [Ortega & Vari, 1986: 18]. The current combination is *Liposarcus multiradiatus* (Hancock, 1828) [Weber, 1992: 9]. Found in the Orinoco system, mainly in the Rio Apure.

CICHLIDAE

Mesonauta insignis (Heckel, 1840).- [Ortega 1991: 4]. Kullander (1986) identified *M. mirificus* Kullander & Silfvergrip as *M. insignis* (Heckel). *Mesonauta insignis* (Heckel) is restricted to the upper rio Negro and Orinoco (Kullander & Silfvergrip, 1991).

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**Table 1. THE NEOTROPICAL FRESHWATER FISHES OF PERU:
Number of Genera and Species in the Families and Orders.**

| | | | | | |
|---------------------------|----|-----|---------------------------|------------|------------|
| RAJIFORMES | | | AGENEIOSIDAE | 2 | 6 |
| POTAMOTRYGONIDAE | 2 | 4 | ASPREIDINIDAE | 6 | 9 |
| LEPIDOSIRENIFORMES | | | PIMELODIDAE | 34 | 69 |
| LEPIDOSIRENIDAE | 1 | 1 | CETOPSIDAE | 5 | 6 |
| OSTEOGLOSSIFOPMES | | | TRYCHOMYCTERIDAE | 12 | 29 |
| OSTEOGLOSSIDAE | 1 | 1 | HELOGENIDAE | 1 | 1 |
| ARAPAIMIDAE | 1 | 1 | CALLICHTHYIDAE | 6 | 36 |
| CLUPEIFORMES | | | LORICARIIDAE | 35 | 100 |
| CLUPEIDAE | 3 | 4 | ASTROBLEPIDAE | 1 | 16 |
| ENGRAULIDIDAE | 3 | 6 | SCOLOPLACIDAE | 1 | 1 |
| CYPRINIFORMES | | | SALMONIFORMES | | |
| CYPRINIDAE | 5 | 5 | SALMONIDAE | 1 | 1 |
| CHARACIFORMES | | | BATRACHOIDIFORMES | | |
| CHARACIDAE | 81 | 210 | BATRACHOIDIDAE | 1 | 1 |
| GASTROPELECIDAE | 3 | 6 | CYPRINODONTIFORMES | | |
| CYNODONTIDAE | 3 | 4 | CYPRINODONTIDAE | 1 | 40 |
| HEMIODONTIDAE | 5 | 8 | RIVULIDAE | 3 | 15 |
| ERYTHRINIDAE | 3 | 4 | POECILIDAE | 2 | 2 |
| CTENOLUCIIDAE | 1 | 3 | ATHERINIFORMES | | |
| LEBIASINIDAE | 6 | 19 | ATHERINIDAE | 2 | 4 |
| PARODONTIDAE | 3 | 3 | BELONIDAE | 2 | 4 |
| PROCHILODONTIDAE | 3 | 8 | AYNBRANCHIFORMES | | |
| CURIMATIDAE | 8 | 32 | SYNBRANCHIDAE | 1 | 2 |
| ANOSTOMIDAE | 8 | 19 | PERCIFORMES | | |
| CHILODONTIDAE | 1 | 1 | MUGILIDAE | 1 | 2 |
| GYMNOTIFORMES | | | SCIAENIDAE | 2 | 3 |
| GYMNOTIDAE | 1 | 2 | NANDIDAE | 1 | 1 |
| ELECTROPHORIDAE | 1 | 1 | CICHLIDAE | 24 | 65 |
| APTERONOTIDAE | 9 | 17 | ELEOTRIDIDAE | 3 | 3 |
| STERNOPYGIDAE | 4 | 6 | GOBIIDAE | 2 | 2 |
| HYPOPOMIDAE | 4 | 5 | GERREIDAE | 2 | 2 |
| RHAMPHICHTHYIDAE | 2 | 5 | ANABANTIDAE | 1 | 1 |
| SILURIFORMES | | | PLEURONECTIFORMES | | |
| ARIIDAE | 2 | 2 | SOLEIDAE | 3 | 4 |
| DORADIDAE | 17 | 37 | TETRAODONTIFORMES | | |
| AUCHENIPTERIDAE | 9 | 15 | TETRAODONTIDAE | 1 | 1 |
| | | | TOTAL | 346 | 855 |