CHROMIS CUVIER *IN* DESMAREST, 1814 (OSTEICHTHYES, PERCIFORMES, POMACENTRIDAE): PROPOSAL TO PLACE ON OFFICIAL LIST OF GENERIC NAMES IN ZOOLOGY, AND THAT GENERIC NAMES ENDING IN *-CHROMIS* BE RULED TO BE MASCULINE. Z.N.(S.)2329

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The history of the generic name *Chromis* has been reviewed by Emery, 1975, who concluded that:

(1) *Chromis* dates from Cuvier *in* Desmarest, 1814, p. 88 (erroneously spelled Desmarets throughout);

(2) The type species of *Chromis* is *Sparus chromis* Linnaeus, 1758, p. 280 by original designation;

(3) *Chromis* is a name of variable gender, although the majority of authors have regarded it as masculine;

(4) Cuvier, 1815, by inclusion of the species *castanea* and *nilotica*, considered *Chromis* to be feminine;

(5) This gender applies only to *Chromis*; the gender of all other generic names ending in *-chromis* should be determined individually.

2. We agree with the correctness of Emery's review of the problem except for a minor notation that the Committee on Names of Fishes of the American Fisheries Society treated *Chromis* as feminine in its 1960 edition and as masculine in its 1970 edition (Bailey *et al.*, 1960, 1970). Actually the committee was inconsistent in 1960, using *cyanea* and *multilineata* (feminine) but *insolatus* (masculine) for included species with adjectival endings, the last a past participle correctly treated as adjectival.

3. Emery, 1975, p. 81, commented that although we and others agreed with the technical correctness of his position, we did not agree with his suggested course of action.

4. The problem stems not only from the current confusion on the gender of *Chromis* but from the wide use in ichthyology of generic names ending in *-chromis*, the seeming logic that all should have the same gender, and the fact that these genera have been overwhelmingly treated as masculine. Recently, Kullander, 1977, described *Papiliochromis* and designated its gender as feminine. This name is a junior synonym of *Microgeophagus* Axelrod according to Robins & Bailey (in press). Thus, without a specific uniform ruling by the Commission on all names ending in *-chromis*, we may antici-

pate varied use in the future and needless difficulty for authors and editors alike. Cichlids are important aquarium fishes and are increasingly used as behavioural and experimental fishes. Moreover, there are many undescribed species and the adjectival ending accorded each new species in a genus ending in *-chromis* will vary with each author's view. Pomacentrids are popular with marine aquarists and they also are widely studied and reported on by ethologists. A non-exhaustive search of ichthyological literature reveals numerous generic names ending in *-chromis* (Table 1).

5. In disagreement with Emery, we believe that for purposes of zoological nomenclature *Chromis* should be treated as masculine:

(1) classical dictionaries vary in citing the gender of *chromis* (chromios), a sea fish, as masculine or feminine. In discussing this point with Dr. H.D. Cameron, Chairman of the Department of Classical Studies, University of Michigan, he assures us that there is no sure way to demonstrate the correct gender of Greek *Chromis* in antiquity, suggesting that this is a practical matter in modern zoology to be resolved in the most reasonable way. This we visualize as concordance with the rules and/or prevailing use.

(2) *Chromis* is commonly (e.g. Jordan, 1917, p. 93) cited as dating from Cuvier, 1815, wherein *Sparus chromis* Linnaeus was listed as type. Emery (*op. cit.*) commented that Cuvier included also *castanea* and *nilotica*, thus indicating his selection of feminine gender.

(3) Nevertheless, as mentioned above and as was stated by Emery, 1975, the genus *Chromis* was originally proposed by Cuvier in Desmarest, 1814. We repeat the quotation given by Emery from the work of Desmarest: '..... le *Petit Castagneau*, appelé *Sparus chromis* par tous les auteurs, qui doit devenir le type d'un nouveau genre nommé *Chromis* ....' Emery believed that this use 'was in non-binomial nomenclature'. We cannot agree with this interpretation. Although only one species was mentioned in Desmarest's title, the body of the text includes as species of *Chromis*, *Chromis castanea*, *Labrus niloticus* (also mentioned as *Chromis nilotica*), and *Labrus punctatus*.

(4) In the original proposal (1814) no statement of gender for *Chromis* was given, although the use of *C. castanea* and *C. nilotica* would indicate feminine gender, as argued by Emery. Subsequently Cuvier was inconsistent, perhaps unconcerned about the ending.

(5) The prevalent treatment of *Chromis* in ichthyological literature has been as masculine, as concluded also by Emery. A sampling of general works, many of which serve as guides to nomenclatural use, includes the following:

masculine	*masculine or feminine*	*feminine*
Beaufort, L.F. de, 1940	Allen, G.R., 1975	Mago-Leccia, F., 1970
Bini, G., 1968	Böhlke, J.E. & Chaplin, C.C.G., 1968	
Blanche, J., Cadenat, J. & Stauch, A., 1970.	Randall, J.E., 1968	
Fowler, H.W., 1928		
——— & Bean, B.A., 1928		
Grant, E.M., 1978		
Herre, A.W., 1953		
Jordan, D.S. & Evermann, B.W., 1898		
Marshall, T.C., 1964		
Meek, S.E. & Hildebrand, S.F., 1925		
Metzelaar, J., 1919		
Monod, Th., 1973		
Munro, I.S.R., 1955, 1967		
Parr, A.E., 1930		
Shiino, S.M., 1976		
Smith, J.L.B., 1965		
——— & Smith, M.M. 1969		
Woods, L.P. & Schultz, L.P. 1960		

Among works sampled, only those by Allen, Böhlke & Chaplin, Mago-Leccia, and Randall used *Chromis* in the feminine, whether or not consistently. Likely all except Allen followed Bailey *et al.*, 1960, a usage reversed by Bailey *et al.*, 1970. Allen anticipated Emery in treating *Chromis* as feminine, but inadvertently retained masculine endings for *C. margaritifer* and *C. verater*.

(6) Emery contends (*op. cit.*) that a change from customary gender for *Chromis* to feminine is wholly independent of the gender of other names ending in *-chromis*. Such

inconsistency, however, would open the way to general confusion. Table 1 lists more than 70 such names, about 50 of which denote currently accepted genera. A few others are preoccupied or invalid emendations. Some are known to us to be currently regarded as generic synonyms, still others are probably unacceptable, but many of these are available nomenclaturally. There are 57 such genera in the family CICHLIDAE and it is likely that more will be proposed. Many are monotypic or oligotypic and few names are adjectives. Authors rarely have indicated gender. Many additional species remain to be described in these genera. To our knowledge among all of these only *Papiliochromis* was stated to be or treated as feminine when proposed and this probably resulted from the author's familiarity with Emery's paper. (The single known species is a patronym in the genitive; this genus is considered to be a junior synonym of *Microgeophagus* by Robins & Bailey, in press.) As species with adjectival names are added, gender will be determined haphazardly. And if species are shifted between genera with the same ending but different gender, the results will be chaotic. With few exceptions *-chromis* names are treated as masculine. Should *Chromis* be different? To us common sense dictates uniformity in treatment of such combining words or suffixes. Thus, we applaud the recent use of its plenary powers by the Commission to designate all names ending in *-ops* as masculine (1974, *Bull. zool. Nom.*, vol. 31(1), pp. 81-83).

6. The Commission is therefore asked:
   (1) to use its plenary powers to rule (a) that the gender of *Chromis* Cuvier, *in* Desmarest, 1814, is masculine; (b) that the gender of all generic names ending in *-chromis* is masculine;
   (2) to place the generic name *Chromis* Cuvier, *in* Desmarest, 1814 (gender, by the ruling given under the plenary powers in (1) above, masculine) type-species, by original designation, *Sparus chromis* Linnaeus, 1758, on the Official List of Generic Names in Zoology;
   (3) to place the specific name *chromis* Linnaeus, 1758, as published in the binomen *Sparus chromis* Linnaeus (specific name of type-species of *Chromis* Cuvier, 1814) on the Official List of Specific Names in Zoology.

REFERENCES

ALLEN, G.R. 1975. *Damselfishes of the south seas.* T.F.H. Publications, Neptune City, N.J., pp. 1–240.

BAILEY, R.M., FITCH, J.E., HERALD, E.S., LACHNER, E.A., LINDSEY, C.C., ROBINS, C.R. & SCOTT, W.B. 1970. A list of common and scientific names of fishes from the United States and Canada (third edition). *Am. Fish. Soc., Spec. Publ.* No. 6: 1–150.

_____LACHNER, E.A., LINDSEY, C.C., ROBINS, C.R., ROEDEL, P.M., SCOTT, W.B. & WOODS, L.P. 1960. A list of common and scientific names of fishes from the United States and Canada (second edition). *Am. Fish. Soc., Spec. Publ.* No. 2: 1–102.

BEAUFORT, L.F. de 1940. *The Fishes of the Indo-Australian Archipelago,* VIII: Percomorphi (cont.), Cirrhitoidea, Labriformes, Pomacentriformes. E.J. Brill, Leiden, pp. 1–508.

BINI, G. 1968. *Atlante dei pesci delle coste Italiane.* Vol. 5. Osteitti: Perciformi (Percoidei). Mondo Sommerso, Rome, pp. 1–175.

BLACHE, J., CADENAT, J. & STAUCH, A. 1970. Clés de détermination des poissons de mer signalés dans l'Atlantique oriental. *Faune Tropicale,* vol. XVIII: ORSTOM, Paris, pp. 1–479.

BÖHLKE, J.E. & CHAPLIN, C.C.G. 1968. *Fishes of the Bahamas and Adjacent Tropical Waters.* Livingston Publ. Co., Wynnewood, Pa., pp. 1–771.

CUVIER, G. 1815. Suite des observations et recherches critiques sur differents poissons de la Mediterranée, et à leur occasion sur les poissons d'autres mers, plus ou moins liés avex eux. *Mém. Mus. Hist. Nat. Paris,* vol. 1: 353–63.

DESMAREST, A.G. 1814. VI° mémoire. Sur le petit castagneau, appelé *Sparus chromis* par tous les auteurs, qui doit devenir le type d'un nouveau genre nommé *Chromis,* et appartenant à la famille des Labres. *Bull. Sci. Soc. Philom. Paris* (3) vol. 1: 88–89.

EMERY, A.R. 1975. *Chromis* Cuvier, 1814: the correct gender. *Copeia* 1975(3): 579–82.

FOWLER, H.W. 1928. The fishes of Oceania. *Mem. Bernice P. Bishop Mus.,* Honolulu, vol. 10: 1–540.

_____& BEAN, B.A. 1928. Contributions to the Biology of the Philippine Archipelago and Adjacent Regions: The Fishes of the Families Pomacentridae, Labridae, and Callyodontidae, collected by the United States Bureau of Fisheries Steamer "Albatross", chiefly in Philippine Seas and adjacent waters. *Bull. U.S. natl. Mus.,* vol. 100, 7: 1–525.

GRANT, E.M. 1978. *Guide to Fishes.* Dept. Harbours & Marine, Brisbane, Queensland, pp. 1–768.

GREENWOOD, P.H. 1979. Towards a phyletic classification of the 'genus' *Haplochromis* (Pisces, Chichlidae) and related taxa. Part I. *Bull. Brit. Mus. nat. Hist.* (Zool. ser.) vol. 35(4): 265–322.

HERRE, A.W. 1953. Check List of Philippine Fishes. *U.S. Dept. Int. Fish & Wildlife Serv. Res. Rep.* 20, pp. 1–975.

JORDAN, D.S. 1917. The genera of fishes. *Leland Stanford Jr. Univ. Publ.,* Univ. Ser. No. 27.

_____& EVERMANN, B.W. 1898. The Fishes of North and Middle America. *Bull. U.S. natl. Mus.* No. 47, Pt. 2, pp. 1241–2183.

KULLANDER, S.W. 1977. *Papiliochromis* gen.n., a new genus of South American cichlid fish (Teleostei, Perciformes). *Zool. Scripta* vol. 6: 253–4.

LINNAEUS, C. 1758. *Systema Naturae*, ed. 10, vol. 1.

MAGO-LECCIA, P. 1970. *Lista de los Peces de Venezuela, incluyendo un estudio preliminar sobre la ictiogeografia del pais.* Min. de Agr. y Cria, Nac'l. de Pesca, Caracas, pp. 1-283.

MARSHALL, T.C. 1964. *Fishes of the Great Barrier Reef and Coastal Waters of Queensland.* Angus & Robertson, Sydney, pp. 1–566.

MEEK, S.E. & HILDEBRAND, S.F. 1925. The Marine Fishes of Panama, Part II. *Field Mus. nat. Hist. Publ.* No. 226, Zool. Ser. vol. 15, pp. 331–707.

METZELAAR, J. 1919. *Over Tropisch Atlantische visschen* ..... A.H. Kruyt, Amsterdam, pp. 1–314.

MONOD, Th. 1973. Pomacentridae. *In: Check-list of the Fishes of the North Eastern Atlantic and of the Mediterranean.* J.C. Hureau and Th. Monod, eds. U.N. Ed., Sci., Cult. Org., Paris, pp. 424–5.

MUNRO, I.S.R. 1955. *The Marine and Fresh Water Fishes of Ceylon.* Dept. External Affairs, Canberra, pp. 1–351.

——— 1967. *The Fishes of New Guinea.* Dept. Agr., Stock & Fish., New Guinea, pp. 1–651.

PARR, A.E. 1930. Teleostean shore and shallow-water fishes from the Bahamas and Turks Island. *In:* Scientific results of the third oceanographic expedition of the "Pawnee", 1927: Fishes. *Bull. Bingham Oceanogr. Coll.*, Vol. 3, Art. IV: 1–41.

RANDALL, J.E. 1968. *Caribbean Reef Fishes.* T.F.H. Publ., Inc., New Jersey, pp. 1–318.

SHIINO, SUEO M. 1976. *List of common names of fishes of the world, those prevailing among English-speaking nations.* Sci. Rep. of Shima Marineland, Japan, 4: 1–262.

SMITH, J.L.B. 1965. *The Sea Fishes of Southern Africa.* Central News Agency, Ltd., South Africa, pp. 1–580.

——— & SMITH, M.M. 1969. *The Fishes of Seychelles.* J.L.B. Smith Inst. Ichth., Grahamstown, S. Africa, pp. 1–223.

SPRINGER, V.G., SMITH, C.L. & FRASER, T.H. 1977. *Anisochromis straussi,* a new species of protogynous hermaphroditic fish, and synonymy of Anisochromidae, Pseudoplesiopidae, and Pseudochromidae. *Smithson. Contr. Zool.*, No. 252: i–iii, 1–15.

WOODS, LOREN P. & SCHULTZ, LEONARD P. 1960. Family Pomacentridae: Damselfishes. In, Fishes of the Marshall and Marianas Islands. *Bull. U.S. natl. Mus.*, 202 (vol. 2): 47–120.

TABLE 1

The genus *Chromis* and some other fish genera ending in *-chromis*. The approximate number of species of each in parentheses.[1]

POMACENTRIDAE

Acanthochromis Gill, 1863 (1)
Actinochromis Bleeker, 1877 (1)
Belochromis Fowler, 1944 (1)
Centrochromis Norman, 1922 (= *Glyphisodon*)
Chromis Cuvier, 1814 (*in* Desmarest, 1814) (50±)
Dorychromis Fowler and Bean, 1928 (= *Chromis*)
Hoplochromis Fowler, 1918 (= *Chromis*)
Lepicephalochromis Fowler, 1943 (= *Chromis*)
Lepidochromis Fowler & Bean, 1928 (= *Chromis*)
Pellochromis Fowler & Bean, 1928 (= *Dascyllus*)
Pomachromis Allen & Randall, 1974 (4)
Pycnochromis Fowler, 1941 (= *Chromis*)
Serrichromis Fowler, 1943 (1)
Siphonochromis Fowler, 1946 (= *Chromis*)
Thrissochromis Fowler, 1941 (1)

PSEUDOCHROMIDAE (including Anisochromidae; see Springer, Smith, and Fraser, 1977)

Anisochromis J.L.B. Smith, 1954 (2)
Leptochromis Bleeker, 1875 (= *Pseudochromis*)
Loxopseudochromis Fowler, 1934 (1)
Nematochromis Weber, 1913 (1)
Opsipseudochromis Fowler, 1934 (1)
Pseudochromis Rüppell, 1835 many

POMATOMIDAE

Chromis Gronow, 1854 (= preoccupied)

CICHLIDAE

Aristochromis Trewavas, 1935 (1)
Astatochromis Pellegrin, 1905 (2)
Astatoreochromis Pellegrin, 1904 (3)
Boulengerochromis Pellegrin, 1904 (1)
Callochromis Regan, 1920 (2)
Chalinochromis Poll, 1974 (1)
Champsochromis Boulenger, 1916 (= *Cyrtocara* Boulenger; see Greenwood, 1979)
Chilochromis Boulenger, 1902 (1)
Chromis Cuvier, 1817 (in part = *Tilapia*)
Chromis (Cuvier) Günther, 1872 (= *Tilapia*)

Ctenochromis Pfeffer, 1893 (5)
Cyathochromis Trewavas, 1935 (1)
Cyprichromis Scheuermann, 1977 (3)
Genyochromis Trewavas, 1935 (1)
Gephyrochromis Boulenger, 1901 (2)
Gobiochromis Poll, 1939 (1)
Haplochromis Hilgendorf, 1888 (5)[2]
Hemichromis Peters, 1857 (2)
Hemihaplochromis Wickler, 1963 (= *Pseudocrenilabrus*)
Heterochromis Regan, 1922 (1)
Julidochromis Boulenger, 1898 (5)
Labidochromis Trewavas, 1935 (3)
Labrochromis Regan, 1920 (= *Haplochromis*, s.l.)
Labrochromis Daget, 1952 (preoccupied)
Leptochromis Regan, 1920 (preoccupied)
Lichnochromis Trewavas, 1935 (1)
Limnochromis Regan, 1920 (7)
Lipochromis Regan, 1920 (= *Haplochromis*, s.l.)
Melanochromis Trewavas, 1935 (5)
Mylochromis Regan, 1920 (= *Haplochromis*, s.l.)
Nannochromis (improper emendation for *Nanochromis*) auctorum
Nanochromis Pellegrin, 1904 (2)
Neochromis Regan, 1920 (= *Haplochromis*, s.l.)
Ophthalmochromis Poll & Matthes, 1962 (1)
Oreochromis Günther, 1889 (= *Tilapia*)
Orthochromis Greenwood, 1954 (4)
Papiliochromis Kullander, 1977 (= *Microgeophagus* Axelrod)
Parachromis Agassiz, 1856 (= *Cichlasoma*)
Parachromis Regan, 1922 (preoccupied)
Paralabiodochromis Greenwood, 1956 (1)
Pelmatochromis Steindachner, 1894 (3)
Pelvicachromis Thys van den Audenaerde, 1968 (= subgenus of *Pelmatochromis*)
Petrochromis Boulenger, 1898 (3)
Pharyngochromis Greenwood, 1979 (1)
Pterochromis Trewavas, 1973 (1)
Ptychochromis Steindachner, 1880 (1)
Reganochromis Whitley, 1929 (replacement for *Leptochromis* Regan) (2)
Rhamphochromis Regan, 1921 (8)
Rheohaplochromis Thys van den Audenaerde, 1963 (= *Orthochromis*)
Sargochromis Regan, 1920 (= subgenus of *Serranochromis*)
Serranochromis Regan, 1920 (17)
Simochromis Boulenger, 1898 (4)
Telmatochromis Boulenger, 1898 (5)
Thoracochromis Greenwood, 1979 (14)
Triglachromis Poll & Thys van den Audenaerde, 1974 (1)
Tylochromis Regan, 1920 (8)
Xenochromis Boulenger, 1898 (= *Perissodus*)

[1] We have indicated synonymies where dictated by recent studies but we

cannot attest to the correctness of these allocations. The classification of cichlid fishes in particular is unstable and authors vary in according generic or subgeneric ranking to various of these taxa.

[2] In recent years approximately 300 species (the majority living in Malawi [Nyasa], Victoria, and adjacent lakes) have been placed in the genus *Haplochromis* (sensu lato). Greenwood (1979) has restricted the genus to only five species from Lakes Victoria, Edward, George, Nabugabo, and Kivu. Many species have been transferred to other genera, especially the large assemblage of Malawi species assigned tentatively to *Cyrtocara*, but until reclassification is complete many species are retained temporarily in *Haplochromis* (s.l). Some genera listed as synonyms in this table will be resurrected.