

The ETYFish Project

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COMMENTS: 

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Order CICHLIFORMES (part 4 of 10)

Family CICHLIDAE Cichlids (part 4 of 7)

Subfamily Pseudocrenilabrinae African Cichlids (*Labeotropheus* through *Otopharynx*)

***Labeotropheus* Ahl 1926**

labeo, presumably referring to the Old World tropical cyprinid genus *Labeo*, whose upper lips are covered by a rostral cap (except when feeding), similar to fleshy snout projecting over upper jaw and lip of *L. fuelleborni*; *tropheus*, referring to Ahl's belief that genus is related to *Tropheus* and *Pseudotropheus*, differing mainly in the dentition and shape of mouth

***Labeotropheus alticodia* Phiri & Pauers 2023**

altus, deep; *codia*, head of a poppy, referring to its “striking” head depth

***Labeotropheus artatorostris* Pauers 2017**

artatus, constricted or shortened; *rostris*, snout, referring to shorter snout pad compared to *L. fuelleborni*

***Labeotropheus aurantinfra* Phiri & Pauers 2023**

aurantiacum, orange-colored; *infra*, below or underneath, referring to male nuptial color pattern in which ventrum, anterior abdomen and branchiostegals feature orange coloration

***Labeotropheus candipygia* Pauers & Phiri 2023**

candidum, white or brilliant; *pygia*, rump or buttocks, referring to bright-white or bluish-white ventrum of males

***Labeotropheus chirangali* Pauers & Phiri 2023**

Chichewa (Bantu language spoken in Malawi) word for beacon, referring to navigational beacon at Mphanga Rocks, Lake Malawi, Malawi, type locality

***Labeotropheus chlorosiglos* Pauers 2016**

chloros, green; *siglos*, earrings, referring to metallic green opercular tabs on both males and females

***Labeotropheus fuelleborni* Ahl 1926**

in honor of Friedrich Fülleborn (1866–1933), who collected holotype during his travels as a parasitologist and military physician

***Labeotropheus obscurus* Phiri & Pauers 2023**

Latin for dark, dusky or shadowy, referring to its muted and mostly gray male nuptial color pattern, unusual for a species of *Labeotropheus*

***Labeotropheus rubidorsalis* Phiri & Pauers 2023**

rubeus, red; *dorsalis*, of the back, referring to “brilliant” red dorsal fin of males

***Labeotropheus simoneae* Pauers 2016**

in honor of Pauers’ “beautiful daughter, Simone Josephine Pauers, whose rosy cheeks remind me of the bright orange opercula of the males of this species”

***Labeotropheus trewavasae* Fryer 1956**

in honor of Ethelwynn Trewavas (1900–1993), British Museum (Natural History), “whose grouping of the Nyasan [Malawian] cichlids paved the way for future research,” and for her interest in Fryer’s work

***Labidochromis* Trewavas 1935**

labido-, forceps, referring to forward-pointing anterior teeth of *L. vellicans*, giving it a forceps-like mouth which it uses to pick insects and ostracods from algal mats; *chromis*, a name dating to Aristotle, possibly derived from *chroemo* (to neigh), referring to a drum (Sciaenidae) and its ability to make noise, later expanded to embrace cichlids, damselfishes, dottybacks and wrasses (all perch-like fishes once thought to be related), often used in the names of African cichlid genera following *Chromis* (now *Oreochromis*) *mossambicus* Peters 1852

***Labidochromis caeruleus* Fryer 1956**

blue, referring to “startling light cobalt blue” color of both sexes

***Labidochromis chisumulae* Lewis 1982**

of Chisumulu Island, east-central Lake Malawi, where it is endemic

***Labidochromis flavigulis* Lewis 1982**

flavus, yellow; *gulis*, gular, referring to yellow gular region and branchiostegal membranes of adult males in life (less intense in females and immature males)

***Labidochromis freibergi* Johnson 1974**

in honor of Jacob Freiberg, African Fish Imports (Verona, New Jersey, USA), who brought this cichlid to Johnson's attention and first made it available to aquarium hobbyists in the USA

***Labidochromis gigas* Lewis 1982**

large, attaining >100 mm TL, the largest member of the genus

***Labidochromis heterodon* Lewis 1982**

heteros, different; *odon*, tooth, its dentition "rather different" from congeners since only central teeth in outer row of each jaw are unicuspid, the lateral teeth being unevenly bicuspid

***Labidochromis ianthinus* Lewis 1982**

violet-blue, referring to "Pronounced mauve iridescence over whole body"

***Labidochromis joanjohnsonae* Johnson 1974**

in honor of Joan Johnson, editor of *Today's Aquarist*, magazine in which description appeared

***Labidochromis lividus* Lewis 1982**

black and blue, referring to coloration of sexually active males, with thin pale blue bars that sometimes run onto dorsal fin

***Labidochromis maculicauda* Lewis 1982**

maculosus, spot; *cauda*, tail, referring to numerous large dark blotches (which sometimes fuse) on caudal fin of living females

***Labidochromis mathotho* Burgess & Axelrod 1976**

in honor of A. J. Mathotho, Chief Fisheries Officer, Malawi, "without whose help the discovery [of this and other new species] would not have been possible" [a noun in apposition, without the genitive "*i*"; *species inquirenda*, provisionally included here]

***Labidochromis mbenjii* Lewis 1982**

of Mbenji Island, Lake Malawi, type locality

***Labidochromis mylodon* Lewis 1982**

mylo-, grinder; *odon*, tooth, referring to "stout to massive pharyngeal bone with molariform central teeth"

***Labidochromis pallidus* Lewis 1982**

pale, referring to uniform white coloration in life

***Labidochromis shiranus* Lewis 1982**

-anus, belonging to: upper Shiré River at Mangochi, Malawi, between lakes Malawi and Malombe, type locality

***Labidochromis strigatus* Lewis 1982**

furrowed or grooved, presumably referring to "variably prominent" dark vertical bars in both sexes

***Labidochromis textilis* Oliver 1975**

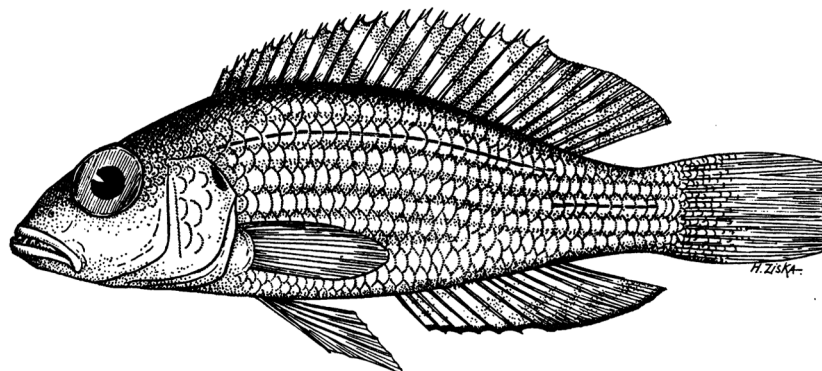
woven, referring to coloration in life, which suggests a brocade cloth

***Labidochromis vellicans* Trewavas 1935**

picking, allusion not explained but clearly referring to its forceps-like teeth, which it nips at mats of epilithic algae (per Lewis 1982) and not on small insects and ostracods feeding on the algae as Trewavas had assumed

***Labidochromis zebroides* Lewis 1982**

-oides, having the form of: zebra, allusion not explained, perhaps referring to prominent dark vertical bars on males



Lamprologus finalimus. From: Nichols, J. T. and F. R. La Monte. 1931. A new *Lamprologus* from Lake Tanganyika. *American Museum Novitates* No. 478: 1-2.

***Lamprologus* Schilthuis 1891**

etymology not explained, perhaps *lampros*, clear, bright or distinct; *logos*, word (i.e., marking) or expression, allusion not evident but here is a guess: referring to dark blotches between eye and gill opening and/or four or five dark vertical bands on sides of *L. congoensis*, which apparently were distinct even “in spirits!” (exclamation point in original)

***Lamprologus brevis* Boulenger 1899**

short, presumably referring to small size (described at 35 mm TL)

***Lamprologus callipterus* Boulenger 1906**

calli-, beautiful; *pterus*, fin, referring to dorsal fin with a yellow border finely edged with blackish (border continuing to upper third of caudal fin), and numerous small round whitish spots on vertical fins

***Lamprologus calliurus* Boulenger 1906**

calli-, beautiful; *oura*, tail, presumably referring to “rather indistinct darker bars” across caudal fin

***Lamprologus congoensis* Schilthuis 1891**

-ensis, suffix denoting place: Congo River basin of west-central Africa, where it is endemic

***Lamprologus finalimus* Nichols & La Monte 1931**

etymology not explained, perhaps a variant of *finalis*, pertaining to the end, referring to black margin on anal fin

***Lamprologus lemairii* Boulenger 1899**

in honor of Lt. Charles Lemaire (1863-1925), leader of the Congo Free State Expedition, which collected fishes in Lake Tanganyika, including type of this one

***Lamprologus lethops* Roberts & Stewart 1976**

lethos, to forget; *ops*, eye, referring to eyes of adults covered in a thick layer of skin with only a slight sensibility to light (eyes of juveniles are rudimentary and not covered by skin)

***Lamprologus markerti* Tougas & Stiassny 2014**

in honor of geneticist Jeffrey A. Markert, whose initial analyses of cichlid population structure in the region of the large Inga Rapids (Democratic Republic of the Congo) stimulated the authors’ morphological study

***Lamprologus mocquardi* Pellegrin 1903**

in honor of Pellegrin’s herpetological colleague François Mocquard (1834-1917)

***Lamprologus multifasciatus* Boulenger 1906**

multi-, many; *fasciatus*, banded, referring to 16-17 “very regular” dark brown bars on body

***Lamprologus ocellatus* (Steindachner 1909)**

having little eyes, referring to ocellated spot on gill cover

***Lamprologus ornatipinnis* Poll 1949**

ornatus, decorated; *pinnis*, fin, presumably referring to numerous parallel black oblique bands on dorsal, caudal and anal fins

***Lamprologus similis* (Büscher 1992)**

similar, referring to the similarity of its melanin pattern with that of *L. multifasciatus*, its presumed closest relative

***Lamprologus speciosus* Büscher 1991**

beautiful, described as “strikingly beautiful” (translation)

***Lamprologus stappersi* Pellegrin 1927**

in honor of the late Louis Stappers (1883-1916), physician, biologist, and head of the Belgian mission to the Congo, who collected type in 1911 and died from an infection while serving as a military physician during World War I

***Lamprologus symoensi* Poll 1976**

in honor of Belgian botanist-ecologist Jean-Jacques Symöns (1927-2014), University of Lubumbashi, for his “interesting and fruitful” (translation) contribution to the study and faunal surveying of the Shaba (or Katanga) Plateau, Democratic Republic of the Congo, where this cichlid occurs

***Lamprologus teugelsi* Schelly & Stiassny 2004**

in memory of friend and colleague Guy Teugels (1954-2003), curator of fishes at the Musée Royale de l’Afrique Centrale, whose “leadership in the field of African ichthyology and his commitment to the training and support of African ichthyologists were an inspiration. He will be sorely missed.”

***Lamprologus tigripictilis* Schelly & Stiassny 2004**

tigris, tiger; *pictilis*, colored or painted, referring to characteristic pattern of dark bands on flanks

***Lamprologus tumbanus* Boulenger 1899**

-anus, belonging to: Lake Tumba, central Congo River basin, Democratic Republic of the Congo, where it is endemic

***Lamprologus weneri* Poll 1959**

in honor of A. Werner, possibly Arthur or Andreas Werner, German aquarium fish exporter (Transfish), who collected type

***Lepidiolamprologus Pellegrin* 1904**

lepto-, scale, referring to its small scales; *Lamprologus*, presumed to be related to that genus

***Lepidiolamprologus attenuatus* (Steindachner 1909)**

thin or tapered, referring to its slender body shape

***Lepidiolamprologus boulengeri* (Steindachner 1909)**

patronym not identified but clearly in honor of ichthyologist-herpetologist George A. Boulenger (1858-1937)

***Lepidiolamprologus elongatus* (Boulenger 1898)**

elongate, presumably referring to its shape, body depth 4 times in TL

***Lepidiolamprologus hecqui* (Boulenger 1899)**

in honor of Lieut. Célestin Hecq (1859-1910), who served in the Belgium Forces stationed in the Congo fighting the slave trade and commander of the fort at Albertville (now Mto), type locality; type specimen was found in the mouth of a large catfish (*Auchenoglanis scutatus* [= *occidentalis*]), collected by Hecq

***Lepidiolamprologus kamambae* Kullander, Karlsson & Karlsson 2012**

of Kamamba Island, Lake Tanganyika, Tanzania, type locality

***Lepidiolamprologus kendalli* (Poll & Stewart 1977)**

in honor of American fish ecologist Robert L. Kendall, who collected type

***Lepidiolamprologus meeli* (Poll 1948)**

in honor of botanist Ludo van Meel (1908-1990), member of the Belgian Hydrobiological Mission to Lake Tanganyika (1946-1947), during which type was collected

***Lepidiolamprologus mimicus* Schelly, Takahashi, Bills & Hori 2007**

imitative, referring to its feeding ecology, in which it blends into schools of its prey (yellow-finned cyprichromines) with the aid of imitative coloration

***Lepidiolamprologus pleuromaculatus* (Trewavas & Poll 1952)**

pleuros, side; *maculatus*, spotted, referring to intense black spot on sides

***Lepidiolamprologus profundicola* (Poll 1949)**

profundus, deep; *-colus*, living among, referring to its deep rocky habitat (4-5 m), making it difficult to catch by hook and line

***Lestradea* Poll 1943**

-ea, belonging to: Arthur Lestrade (1897-1990), who collected important series of fishes from Lake Tanganyika for the Royal Museum of the Belgian Congo (Tervuren), including type of this genus

***Lestradea perspicax* Poll 1943**

keen or clear-seeing (i.e., perspicacious), allusion not explained, perhaps referring to its large eyes

***Lethrinops* Regan 1922**

ops, appearance, etymology not explained, presumably referring to superficial resemblance of *L. lethrinus* with the marine genus *Lethrinus* (Lethrinidae)

***Lethrinops albus* Regan 1922**

white, referring to silvery coloration (presumably in alcohol since it is quite colorful in life)

***Lethrinops altus* Trewavas 1931**

high, referring to body form (per Eccles & Trewavas 1989)

***Lethrinops argenteus* Ahl 1926**

silvery, referring to “yellowish-silver” (translation) coloration of males in alcohol

***Lethrinops atrilabris* Turner 2022**

atri-, from *ater*, black; *labris*, plural of *labrum*, lip, referring to black lips of the males in breeding dress

***Lethrinops auritus* (Regan 1922)**

eared, referring to blackish opercular spot

***Lethrinops chilingali* Turner, Crampton & Genner 2023**

named for Lake Chilingali, Lake Malawi catchment, Malawi, only known area of occurrence [likely extinct in the wild]

***Lethrinops christyi* Trewavas 1931**

in honor of Cuthbert Christy (1863-1932), physician (specializing in sleeping sickness), zoologist, explorer, and Director of the Congo Museum (Tervuren, Belgium), who collected a large number of fishes from Lake Malawi

in 1925–1926, including type of this one

***Lethrinops furcifer* Trewavas 1931**

furca, fork; *fero*, to bear, referring to deeply forked caudal fin

***Lethrinops gosse* Burgess & Axelrod 1973**

in honor of Jean-Pierre Gosse (1924–2001), curator of vertebrates, Institut Royal des Sciences Naturelles de Belgique, for his “valuable” scientific contributions on African fishes

***Lethrinops leptodon* Regan 1922**

leptos, fine, small, delicate or thin; *odon*, tooth, allusion not explained, perhaps referring to small pharyngeal teeth (except for last few teeth of two middle series of lower pharyngeal); Eccles and Trewavas (1989) report that name refers to “weak dentition”

***Lethrinops lethrinus* (Günther 1894)**

etymology not explained, presumably referring to superficial resemblance with the marine genus *Lethrinus* (Lethrinidae)

***Lethrinops longimanus* Trewavas 1931**

longus, long; *manus*, hand, referring to longer pectoral fin compared to *L. auritus*

***Lethrinops longipinnis* Eccles & Lewis 1978**

longus, long; *pinnis*, fin, referring to elongate pectoral fins (per Eccles & Trewavas 1989)

***Lethrinops lunaris* Trewavas 1931**

of the moon, referring to “more deeply emarginate” caudal fin compared to *L. leptodon*

***Lethrinops macracanthus* Trewavas 1931**

macro-, long; *acanthus*, spine, referring to stout anal-fin spines (per Eccles & Trewavas 1989)

***Lethrinops macrochir* (Regan 1922)**

macro-, long; *cheiros*, hand, referring to pectoral fins longer than head, reaching middle of anal fin

***Lethrinops macrophthalmus* (Boulenger 1908)**

macro-, long or large; *ophthalmus*, referring to size of eye, 2½ times in length of head

***Lethrinops marginatus* Ahl 1926**

edged or bordered, referring to dark border on dorsal and caudal fins

***Lethrinops micrentodon* (Regan 1922)**

micro-, small; *entos*, within; *odon*, tooth, referring to “inner teeth of lower jaw minute, almost invisible”

***Lethrinops microdon* Eccles & Lewis 1977**

micro-, small; *odon*, tooth, referring to small, closely packed pharyngeal teeth (per Eccles & Trewavas 1989)

***Lethrinops microstoma* Trewavas 1931**

micro-, small; *stoma*, mouth, referring to small mouth, maxilla reaching, or almost reaching, level of front of orbit

***Lethrinops mylodon mylodon* Eccles & Lewis 1979**

mylo-, grinder; *odon*, tooth, referring to “massive molariform pharyngeal bones with greatly enlarged molariform teeth which form a powerful grinding mill”

***Lethrinops mylodon borealis* Eccles & Lewis 1979**

northern, referring to distribution in Nkhata Bay, north of the nominate form of this species

***Lethrinops parvidens* Trewavas 1931**

parvus, small; *dens*, teeth, referring to “weak dentition” (per Eccles & Trewavas 1989)

***Lethrinops stridei* Eccles & Lewis 1977**

in honor of Kenneth E. Stride, who brought the first successful commercial trawling to Lake Malawi, and oversaw hundreds of productive trawl hauls in the Experimental Trawling Program of the late 1960s into the early 1980s

***Lethrinops turneri* Ngatunga & Snoeks 2003**

in honor of George Turner, Bangor University (Wales), who has worked extensively on the fishes and fisheries of lakes Malawi and Lalombe, and who was the first to report this species from these two lakes

***Lichnochromis* Trewavas 1935**

lichnos, dainty (per Eccles & Trewavas 1989), allusion not explained nor evident (*lichnos* can also mean greedy or voracious, perhaps referring to its formidable-looking mouth); *chromis*, a name dating to Aristotle, possibly derived from *chroemo* (to neigh), referring to a drum (Sciaenidae) and its ability to make noise, later expanded to embrace cichlids, damselfishes, dottybacks and wrasses (all perch-like fishes once thought to be related), often used in the names of African cichlid genera following *Chromis* (now *Oreochromis*) *mossambicus* Peters 1852

***Lichnochromis acuticeps* Trewavas 1935**

acutus, pointed; *ceps*, head, probably referring to its long snout and extremely pointed mouth

***Limbochromis* Greenwood 1987**

limbo, i.e., “in limbo,” referring to how this genus represents a “taxonomic defeat,” established for two species [including *L. cavalliensis*, now placed in *Chromidotilapia*] which, “although clearly members of the group II pelmatochromine assemblage, cannot be included in any of the genera recognised here, nor can it be identified as a sister group to any of those taxa”; *chromis*, a name dating to Aristotle, possibly derived from *chroemo* (to neigh), referring to a drum (Sciaenidae) and its ability to make noise, later expanded to embrace cichlids, damselfishes, dottybacks and wrasses (all perch-like fishes once thought to be related), often used in the names of African cichlid genera following *Chromis* (now *Oreochromis*) *mossambicus* Peters 1852

***Limbochromis robertsi* (Thys van den Audenaerde & Loisel 1971)**

in honor of ichthyologist Tyson R. Roberts (b. 1940), who collected type

***Limnochromis* Regan 1920**

limno-, lake, presumably referring to occurrence in Lake Tanganyika; *chromis*, a name dating to Aristotle, possibly derived from *chroemo* (to neigh), referring to a drum (Sciaenidae) and its ability to make noise, later expanded to embrace cichlids, damselfishes, dottybacks and wrasses (all perch-like fishes once thought to be related), often used in the names of African cichlid genera following *Chromis* (now *Oreochromis*) *mossambicus* Peters 1852

***Limnochromis auritus* (Boulenger 1901)**

eared, referring to “very distinct” blue-black opercular spot

***Limnotilapia* Regan 1920**

limno-, lake, presumably referring to occurrence in Lake Tanganyika; *Tilapia*, described as “Very close” to that genus

***Limnotilapia dardennii* (Boulenger 1899)**

in honor of painter Léon Dardenne (1865–1912), illustrator for the Congo Free State Expedition, which collected fishes in Lake Tanganyika, including type of this one

***Lithochromis* Lippitsch & Seehausen 1998**

lithos, stone, referring to rocky habitats of this genus; *chromis*, a name dating to Aristotle, possibly derived from *chroemo* (to neigh), referring to a drum (Sciaenidae) and its ability to make noise, later expanded to embrace cichlids, damselfishes, dottybacks and wrasses (all perch-like fishes once thought to be related), often used in the names of African cichlid genera following *Chromis* (now *Oreochromis*) *mossambicus* Peters 1852

***Lithochromis rubripinnis* Seehausen, Lippitsch & Bouton 1998**

ruber, red; *pinnis*, fin, referring to diagnostic bright-red fins of males

***Lithochromis rufus* Seehausen & Lippitsch 1998**

red or russet, referring to bright-red coloration of nuptial males

***Lithochromis xanthopteryx* Seehausen & Bouton 1998**

xanthos, yellow; *pteryx*, fin, referring to bright-yellow anal fin in nuptial males

***Lobochilotes* Boulenger 1915**

lobos, lobe; *chilotes*, one with lips, referring to its protruding, fleshy lips

***Lobochilotes labiata* (Boulenger 1898)**

large-lipped, referring to “extraordinary development” of its lips, bearing a “curious resemblance” to the neotropical cichlid *Heros* (now *Amphilophus*) *labiatus*

***Lufubuchromis* Schedel, Kupriyanov, Katongo & Schliewen 2020**

Lufubu, referring to Upper Lufubu River and tributaries in northern Zambia, where it is endemic; *chromis*, a name dating to Aristotle, possibly derived from *chroemo* (to neigh), referring to a drum (Sciaenidae) and its ability to make noise, later expanded to embrace cichlids, damselfishes, dottybacks and wrasses (all perch-like fishes once thought to be related), often used in the names of African cichlid genera following *Chromis* (now *Oreochromis*) *mossambicus* Peters 1852

***Lufubuchromis relictus* Schedel, Kupriyanov, Katongo & Schliewen 2020**

a relict fish, referring to its restricted distribution in an isolated upper region of an ancient plateau; its basal phylogenetic position suggests that it represents a relict ancient evolutionary lineage that once may have had a wider distribution

***Maylandia* Meyer & Förster 1984**

-*ia*, belonging to: cichlid enthusiast and aquarium-fish author Hans Joachim Mayland (ca. 1928–2004; see *M. hajomaylandi*, below) [many authors recognize *Metriaclima* Stauffer, Bowers, Kellogg & McKaye 1997 as the valid name, arguing that *Maylandia* lacks a diagnosis and is therefore unavailable; we follow Eschmeyer’s Catalog of Fishes in treating the older name as valid but provide an etymology for the newer name just in case: *metrios*, moderate; *clima*, slope, referring to the “moderately sloped head” of its members]

***Maylandia aurora* (Burgess 1976)**

dawn or morning, referring to bright golden-yellow color of chest and lower head area impinging on blue color of body



Maylandia greshakei, male. Photo by Hans J. Mayland. From: Meyer, M. K. and W. Förster. 1984. Un nouveau *Pseudotropheus* du lac Malawi avec des remarques sur le complexe *Pseudotropheus-Melanochromis* (Pisces, Perciformes, Cichlidae). *Revue française d'Aquariologie Herpétologie* v. 10 (no. 4) (1983): 107-112.

***Maylandia barlowi* (McKaye & Stauffer 1986)**

in honor of ichthyologist George W. Barlow (1929-2007), for his behavioral studies on the benefits of gold coloration in cichlids

***Maylandia benetos* (Stauffer, Bowers, Kellogg & McKaye 1997)**

Greek for blue, referring to light-blue ground coloration of breeding males

***Maylandia callainos* (Stauffer & Hert 1992)**

turquoise, referring to blue ground color with green highlights of territorial males

***Maylandia chrysomallos* (Stauffer, Bowers, Kellogg & McKaye 1997)**

chrysos, gold; *mallos*, wool or fleece, referring to gold highlights on sides of both sexes

***Maylandia cyneusmarginata* (Stauffer, Bowers, Kellogg & McKaye 1997)**

cyneus, blue; *marginata*, margined, referring to blue marginal band in dorsal fin of both sexes

***Maylandia emmiltos* (Stauffer, Bowers, Kellogg & McKaye 1997)**

Greek for red-tinged, referring to orange dorsal fin of breeding males

***Maylandia estherae* (Konings 1995)**

in honor of Esther Grant, wife of cichlid exporter Stuart M. Grant (1937-2007), Salima, Malawi; she was “instrumental in the renewed opening up of the Mozambique waters for the collection of ornamental fishes”

***Maylandia fainzilberi* (Staack 1976)**

in honor of tropical-fish exporter Misha Fainzilber, who facilitated Staack's access to Lake Malawi

***Maylandia flavicauda* (Li, Konings & Stauffer 2016)**

flavus, yellow; *cauda*, tail, referring to yellow tail of territorial males

***Maylandia flavifemina* (Konings & Stauffer 2006)**

flavus, yellow; *femina*, female, referring to yellow color of females

***Maylandia gallireyae* (Miller, Konings & Stauffer 2021)**

of Gallireya Reef, local name for a reef in Youngs Bay, Lake Malawi, type locality

***Maylandia glaucos* (Ciccotto, Konings & Stauffer 2011)**

bluish gray, referring to blue-gray body and fin coloration of both sexes

***Maylandia greshakei* (Meyer & Förster 1984)**

in honor of Alfons Greshake, German importer of ornamental fishes

***Maylandia hajomaylandi* (Meyer & Scharl 1984)**

in honor of cichlid enthusiast and aquarium-fish author Hans Joachim Mayland (ca. 1928-2004), who has contributed “considerably” to the taxonomy and biology of cichlid fishes

***Maylandia koningsi* (Stauffer 2018)**

in honor of Adrianus (“Ad”) F. Konings (b. 1956), ichthyologist, cichlid aquarist and publisher, for his “comprehensive knowledge” and for teaching Stauffer most of what he knows about the fishes of Lake Malawi

***Maylandia lanisticola* (Burgess 1976)**

lanisti, from the snail genus *Lanistes*; *-cola*, dweller or inhabitant, referring to its living in empty snail shells

***Maylandia lombardoi* (Burgess 1977)**

in honor of John Lombardo, African Fish Imports, who brought this species to Burgess' attention and provided holotype

***Maylandia lundoensis* (Stauffer, Black & Konings 2013)**

-ensis, suffix denoting place: Lundo Island, Lake Malawi, Tanzania, only known area of occurrence

***Maylandia mbenjii* (Stauffer, Bowers, Kellogg & McKaye 1997)**

of Mbenji Island, Lake Malawi, where it is endemic

***Maylandia melissa* (Stauffer & Konings 2023)**

Greek for bee, referring to bee-like coloration of adult males at Chitande Island, Lake Malawi, Malawi, type locality (adult males from other locations lack the bee-like coloration)

***Maylandia midomo* (Stauffer, Black & Konings 2013)**

Swahili for lips, referring to its enlarged lips

***Maylandia mossambica* (Ciccotto, Konings & Stauffer 2011)**

-ica, belonging to: Mozambique shore of Lake Malawi, between Chiloele River and the village of Chinuni, only known area of occurrence

***Maylandia ngarae* (Miller, Konings & Stauffer 2021)**

of Ngara, Malawi, type locality

***Maylandia nigrodorsalis* (Stauffer, Black & Konings 2013)**

nigro-, black; *dorsalis*, of the back, referring to black submarginal band on dorsal fin of males and some females

***Maylandia nkhunguensis* (Ciccotto, Konings & Stauffer 2011)**

-ensis, Nkhungu Reef, Lake Malawi, Mozambique, type locality (also occurs at Minos Reef)

***Maylandia pambazuko* (Stauffer, Black & Konings 2013)**

Swahili for dawn or sunrise, referring to orange-red dorsal fin of males, like the orange-red sky of daybreak

***Maylandia phaeos* (Stauffer, Bowers, Kellogg & McKaye 1997)**

dusk, referring to dusky submarginal band on dorsal fin of both sexes

***Maylandia pulpican* (Tawil 2002)**

poulpican (also known as korrigan and poulpiquet), a local name for goblin-like dwarves in Breton mythology, referring to this cichlid's habit of harrying other fishes while defending its territory

***Maylandia pyrsonotos* (Stauffer, Bowers, Kellogg & McKaye 1997)**

pyrsos, fire; *notos*, back, referring to red-orange dorsal fin of breeding males

***Maylandia sciasma* (Ciccotto, Konings & Stauffer 2011)**

shadow, referring to black pelvic fins of males

***Maylandia tarakiki* (Stauffer, Black & Konings 2013)**

Swahili for slim or slender, referring to its elongate body shape

***Maylandia usisyae* (Li, Konings & Stauffer 2016)**

of Usisya, village on Lake Malawi, Malawi, near type locality

***Maylandia xanstomachus* (Stauffer & Boltz 1989)**

xanthos, yellow; *stomachus*, throat, referring to yellow gular region of both sexes

***Maylandia xanthos* (Ciccotto, Konings & Stauffer 2011)**

yellow, referring to yellow belly and dorsal fin of breeding males

***Maylandia zebra* (Boulenger 1899)**

named for zebra-like stripes on sides

***Mbipia* Lippitsch & Seehausen 1998**

latinization of *Mbipi*, the dark ones, Kisukuma (most common language spoken in the southeastern Lake Victoria region) word for most rock cichlids, referring to rather dark appearance of adult males

***Mbipia lutea* Seehausen & Bouton 1998**

saffron yellow, referring to conspicuous coloration of males

***Mbipia mbipi* Seehausen, Lippitsch & Bouton 1998**

Mbipi, the dark ones, Kisukuma (most common language spoken in the southeastern Lake Victoria region) word for most rock cichlids, referring to rather dark appearance of adult males

***Mchenga* Stauffer & Konings 2006**

Chichewa (indigenous language of Malawi) word for sand, referring to sand bowers constructed by breeding males

***Mchenga conophoros* (Stauffer, LoVullo & McKaye 1993)**

conus, cone; *phorus*, to bear, referring to cone-shaped bowers of breeding males

***Mchenga cyclicos* (Stauffer, LoVullo & McKaye 1993)**

circular, referring to courtship dance of breeding males

***Mchenga eucinostomus* (Regan 1922)**

eu-, very; *kineo*, to move; *stomus*, presumably referring to protrusible mouth

***Mchenga flavimanus* (Iles 1960)**

flavus, yellow; *manus*, hand, usually referring to pectoral fins but here referring to its pelvic fins, “conspicuously” colored orange or yellow, and an easy way to distinguish it in life from *Copadichromis virginalis*, its presumed congener at the time

***Mchenga inornata* (Boulenger 1908)**

plain or unadorned, presumably referring to silvery body and olive back

***Mchenga thinos* (Stauffer, Lovullo & McKaye 1993)**

Greek for sand hill, referring to sand bowers constructed by breeding males

***Melanochromis* Trewavas 1935**

melanos, black, allusion not explained, possibly referring to dark fins of *M. melanopterus* and/or basic melanin pattern consisting of two black solid horizontal lateral stripes, one straddling lower arm of lateral-line system and one between dorsal-fin base and mid-lateral stripe; *chromis*, a name dating to Aristotle, possibly derived from *chroemo* (to neigh), referring to a drum (Sciaenidae) and its ability to make noise, later expanded to embrace cichlids, damselfishes, dotty-backs and wrasses (all perch-like fishes once thought to be related), often used in the names of African cichlid genera following *Chromis* (now *Oreochromis*) *mossambicus* Peters 1852

***Melanochromis auratus* (Boulenger 1897)**

gilded, referring to golden yellow color of females and juveniles

***Melanochromis baliodigma* Bowers & Stauffer 1997**

balios, spotted; *digmatos*, pattern, referring to blotched color pattern of adults

***Melanochromis chipokae* Johnson 1975**

of Chipoka Island, Lake Malawi, Malawi, type locality

***Melanochromis dialeptos* Bowers & Stauffer 1997**

Greek for very small, referring to its “diminutive stature” (up to 72 mm SL)

***Melanochromis heterochromis* Bowers & Stauffer 1993**

heteros, different; *chroma*, color, referring to variations in body coloration among populations (although coloration within a population is fairly constant) [*chromis* could also allude to *Melanochromis* (genus), *Haplochromis* (being a haplochromine cichlid), or both]

***Melanochromis kaskazini* Konings-Dudin, Konings & Stauffer 2009**

“northern” in Kiswahili, language spoken along northeastern shores of Lake Malawi, where it occurs

***Melanochromis lepidiadaptes* Bowers & Stauffer 1997**

lepidos, scale; *daptēs*, devour, i.e., scale-eater, referring to its diet

***Melanochromis lorae* Johnson 1975**

in honor of Lori Lombardo, daughter of John Lombardo, African Fish Imports

***Melanochromis melanopterus* Trewavas 1935**

melanos, black; *pterus*, fin, allusion not explained, probably referring to its dark fins

***Melanochromis mossambiquensis* Konings-Dudin, Konings & Stauffer 2009**

-ensis, suffix denoting place: Mozambique shore of Lake Malawi, where it appears to be endemic

***Melanochromis mpoto* Konings & Stauffer 2012**

derived from ChiTumbuka, language spoken along northwestern shore of Lake Malawi, meaning “northern,” referring to its distribution pattern

***Melanochromis robustus* Johnson 1985**

stout, referring to its size, described at 140 mm SL (actually 124.2 mm according to subsequent authors), the “largest species in the genus known to date”

***Melanochromis simulans* Eccles 1973**

resembling, referring to its “striking” resemblance in color pattern to *M. auratus*; a very similar pattern is also shown by *Julidochromis ornatus*, “yet another parallel” between the fishes of lakes Tanganyika and Malawi

***Melanochromis vermivorus* Trewavas 1935**

vermis, worm; *vorare*, to swallow or devour, allusion not explained; according to Konings (2008), probably referring to the fact that Cuthbert Christy (collector of the types) noted that this species was easily caught by local

fishermen using worms as bait

***Melanochromis wochepea* Konings-Dudin, Konings & Stauffer 2009**

derived from Chinyanja (local language around Lake Malawi) word for “small,” referring to its small adult size (41.7–65.1 mm SL)

***Microdontochromis* Poll 1986**

micro-, small and *odontos*, tooth, referring to minute oral teeth of *M. tenuidentatus*; *chromis*, a name dating to Aristotle, possibly derived from *chroemo* (to neigh), referring to a drum (Sciaenidae) and its ability to make noise, later expanded to embrace cichlids, damselfishes, dottybacks and wrasses (all perch-like fishes once thought to be related), often used in the names of African cichlid genera following *Chromis* (now *Oreochromis*) *mossambicus* Peters 1852

***Microdontochromis rotundiventralis* Takahashi, Yanagisawa & Nakaya 1997**

rotundus, circular; *ventralis*, underside or belly, referring to rounded distal margin of pelvic fins

***Microdontochromis tenuidentatus* (Poll 1951)**

tenuis, thin; *dentatus*, toothed, referring to teeth of lower pharyngeal jaw, all of which are slender, compared to its presumed congeners in *Xenotilapia*, which have at least some enlarged central teeth

***Myaka* Trewavas 1972**

first half of *myakamyaka*, Barombi name for this cichlid at Lake Barombi-Mbo, Cameroon, where it is endemic

***Myaka myaka* Trewavas 1972**

second half of *myakamyaka*, Barombi name for this cichlid at Lake Barombi-Mbo, Cameroon, where it is endemic

***Mylochromis* Regan 1920**

mylo-, grinder, referring to large and obtuse middle pharyngeal teeth of *M. lateristriga*; *chromis*, a name dating to Aristotle, possibly derived from *chroemo* (to neigh), referring to a drum (Sciaenidae) and its ability to make noise, later expanded to embrace cichlids, damselfishes, dottybacks and wrasses (all perch-like fishes once thought to be related), often used in the names of African cichlid genera following *Chromis* (now *Oreochromis*) *mossambicus* Peters 1852

***Mylochromis anaphyrmus* (Burgess & Axelrod 1973)**

Greek for confusion, referring to its status (uncertain?) within its original genus, *Haplochromis*

***Mylochromis balteatus* (Trewavas 1935)**

girdled, presumably referring to prominent black band obliquely running from dorsal-fin origin to base of caudal fin

***Mylochromis chekopae* Turner & Howarth 2001**

of Chekopa, trawl station at southeastern arm of Lake Malawi, type locality

***Mylochromis durophagus* Turner 2024**

duro-, from *durus* (L.); *phagus*, from *phagein* (Gr. φαγεῖν), to eat, referring to its presumed diet of hard-shelled invertebrates as indicated by its molariform pharyngeal dentition

***Mylochromis ensatus* Turner & Howarth 2001**

shaped like a two-edged sword, referring to shallow, straight, elongate body form and acutely pointed head

***Mylochromis epichorialis* (Trewavas 1935)**

epichorialis, in or of the country, i.e., according to prevailing fashion, referring to its oblique stripe (Eccles & Trewavas 1989), common in the genus

***Mylochromis ericotaenia* (Regan 1922)**

ereiko, to break; *taenia*, band, referring to blackish band, more or less broken up into a series of spots from nape to middle of caudal-fin base

***Mylochromis formosus* (Trewavas 1935)**

beautiful or handsome, allusion not explained, possibly referring to continuous (vs. interrupted) oblique black band from nape to base of caudal seen in some specimens and/or black lachrymal stripe

***Mylochromis gracilis* (Trewavas 1935)**

slender, probably referring to slender shape compared to most congeners

***Mylochromis guentheri* (Regan 1922)**

in honor of ichthyologist-herpetologist Albert Günther (1830–1914), who reported this species as *Chromis lateristriga* in 1864

***Mylochromis incola* (Trewavas 1935)**

inhabitant, allusion not explained, perhaps referring to its occurrence in *Vallisneria* beds

***Mylochromis labidodon* (Trewavas 1935)**

labidos, forceps; *odon*, tooth, referring to large anterior teeth of lower jaw grading rather sharply into the posterior

***Mylochromis lateristriga* (Günther 1864)**

lateris, side; *striga*, streak, referring to black band running from nape of neck, along upper part of side, to base of caudal fin

- Mylochromis melanonotus* (Regan 1922)**
melano-, black; *notos*, back, presumably referring to blackish band from nape to upper half of caudal-fin base
- Mylochromis melanotaenia* (Regan 1922)**
melano-, black; *taenia*, band, referring to blackish band from nape to caudal-fin base
- Mylochromis mola* (Trewavas 1935)**
millstone, referring to its enlarged pharyngeal dentition (Eccles & Trewavas 1989)
- Mylochromis mollis* (Trewavas 1935)**
soft, allusion not explained, perhaps referring to its thin or weak oral jaws (Ad Konings, pers. comm.)
- Mylochromis obtusus* (Trewavas 1935)**
blunt, allusion not explained nor evident
- Mylochromis plagiotaenia* (Regan 1922)**
plagio, oblique; *taenia*, band, presumably referring to dark band that obliquely runs from nape to middle of caudal-fin base
- Mylochromis rotundus* Turner 2024**
Latin for round or circular, referring to its rounded body shape and short, rounded snout in particular
- Mylochromis semipalatus* (Trewavas 1935)**
semi-, partial; *palatus*, like a shovel, referring to how lower jaw shows a less extreme form of flattening compared to *M. melanonotus* (Eccles & Trewavas 1989)
- Mylochromis sphaerodon* (Regan 1922)**
sphaero, ball; *odon*, tooth, referring to spherical crowns on middle pharyngeal teeth
- Mylochromis spilostichus* (Trewavas 1935)**
spilos, spot; *stichus*, line or row, referring to oblique series of ~10 dark bars on upper half of body from nape to base of caudal fin
- Mylochromis subocularis* (Günther 1894)**
sub-, below; *ocularis*, referring to the eye, allusion not explained, perhaps referring to three series of scales below eye
- Naevochromis* Eccles & Trewavas 1989**
naevus, spot or birthmark, referring to suprapectoral spot below and covering upper lateral line, a supraanal spot between the lines, and a spot before the caudal fin; *chromis*, a name dating to Aristotle, possibly derived from *chroemo* (to neigh), referring to a drum (Sciaenidae) and its ability to make noise, later expanded to embrace cichlids, damselfishes, dotty-backs and wrasses (all perch-like fishes once thought to be related), often used in the names of African cichlid genera following *Chromis* (now *Oreochromis*) *mossambicus* Peters 1852
- Naevochromis chrysogaster* (Trewavas 1935)**
chrysos, gold; *gaster*, belly, referring to ventral coloration of territorial males
- Nanochromis* Pellegrin 1904**
nanus, dwarf, referring to their small size; *chromis*, a name dating to Aristotle, possibly derived from *chroemo* (to neigh), referring to a drum (Sciaenidae) and its ability to make noise, later expanded to embrace cichlids, damselfishes, dotty-backs and wrasses (all perch-like fishes once thought to be related), often used in the names of African cichlid genera following *Chromis* (now *Oreochromis*) *mossambicus* Peters 1852
- Nanochromis consortus* Roberts & Stewart 1976**
partner, sharer or mate, i.e., a consort, allusion not explained; “I do not remember the precise thinking about that name at the time, but they were mixed with a good sample of *N. splendens* at station 41, so it may be a reference to sympatry of those two species — ‘sharing’ the habitat” (Donald J. Stewart, pers. comm.)
- Nanochromis minor* Roberts & Stewart 1976**
small, referring to its “tiny” adult size (described at up to 23.3 mm SL)
- Nanochromis nudiceps* (Boulenger 1899)**
nudus, bare or naked; *ceps*, head, referring to scaleless nape
- Nanochromis parilus* Roberts & Stewart 1976**
equal, referring to “slight” sexual dichromatism compared to congeners from the lower Zaire rapids, i.e., males and females are “equal”
- Nanochromis splendens* Roberts & Stewart 1976**
beautiful, referring to canary yellow and orangish-red pigments on gill covers of both sexes at maturity, and males with long, filamentous black pelvic fins and vertical carmine bars on lower half of caudal fin
- Nanochromis teugelsi* Lamboj & Schelly 2006**
in honor of the late Guy Teugels (1954–2003), former curator of fishes at the Musée Royale de l’Afrique Centrale

***Nanochromis transvestitus* Stewart & Roberts 1984**

trans-, cross or over; *vestitus*, clothed, referring to reverse sexual dichromatism: strikingly colored females and drab males

***Nanochromis wickleri* Schliewen & Stiassny 2006**

in honor of zoologist Wolfgang Wickler (b. 1931), for his behavioral studies of cichlids in general and of benthic Congolese cichlids in particular; as former director of the Max Planck Institut for Behavioral Physiology (Seewiesen, Germany), he “generously” supported studies on central African cichlid fishes conducted by the senior author

***Neochromis* Regan 1920**

neo-, new, i.e., a new genus “closely related” to *Haplochromis*

***Neochromis gigas* Seehausen & Lippitsch 1998**

giant, referring to size of adults, considerably larger than congeners

***Neochromis greenwoodi* Seehausen & Bouton 1998**

in honor of the late Peter Humphry Greenwood (1927-1995), who “devoted much of his life to the study of the evolution and systematics of the Lake Victoria cichlid species flock and laid the foundation for the modern systematics of these fishes”

***Neochromis nigricans* (Boulenger 1906)**

blackish, described as “Blackish or steel-grey above, somewhat lighter beneath; seven ill-defined black bars on the body and a vertical black bar below the anterior third of the eye; a black opercular spot; dorsal and ventral fins dark brown or black; other fins dark greyish brown”

***Neochromis omnicaeruleus* Seehausen & Bouton 1998**

omnis, all; *caeruleus*, blue, referring to entirely blue male coloration of the most common color morph

***Neochromis rufocaudalis* Seehausen & Bouton 1998**

rufus, red; *caudalis*, tailed, referring to deep-red color of caudal fin in life

***Neochromis simotes* (Boulenger 1911)**

one with a flat- or pugnose, allusion not explained, perhaps referring to its “broadly rounded” snout, “much broader than long, as long as eye”

***Neolamprologus* Colombé & Allgayer 1985**

neo-, new, i.e., a new genus of *Lamprologus*, genus in which many species had previously been placed

***Neolamprologus bifasciatus* Büscher 1993**

bi-, two; *fasciatus*, banded, referring to conspicuous longitudinal bands on body

***Neolamprologus brichardi* (Poll 1974)**

in honor of aquarium fish exporter Pierre Brichard (1921-1990), based in Lake Tanganyika [replacement name for *Lamprologus savoryi elongatus* Trewavas & Poll 1952, preoccupied by *L. elongatus* Boulenger 1898]

***Neolamprologus buescheri* (Staeck 1983)**

in honor of German ichthyologist (living in Switzerland) Heinz H. Büscher (b. 1942), who collected type

***Neolamprologus cancellatus* Aibara, Takahashi & Nakaya 2005**

lattice or cross-barred, referring to grid-like stripes on body [probably a natural *Lamprologus callipterus* × *Telmatochromis vittatus* hybrid per Konings 2015]

***Neolamprologus caudopunctatus* (Poll 1978)**

caudo-, tail; *punctatus*, spotted, referring to black dots on posterior half of caudal fin

***Neolamprologus christyi* (Trewavas & Poll 1952)**

in honor of Cuthbert Christy (1863-1932), physician (specializing in sleeping sickness), zoologist, explorer, and Director of the Congo Museum (Tervuren, Belgium), who collected type in 1926 or 1927

***Neolamprologus cunningtoni* (Boulenger 1906)**

in honor of William Alfred Cunnington (1877-1958), British zoologist and anthropologist, who led Tanganyika expedition that collected type [see *Cunningtonia*]

***Neolamprologus cylindricus* Staeck & Seegers 1986**

cylindrical, referring to its roundish, cylindrical body shape

***Neolamprologus falcicula* (Brichard 1989)**

diminutive of *fālx*, sickle, referring to its “exaggerated crescentic” caudal fin

***Neolamprologus furcifer* (Boulenger 1898)**

furca, fork; *fero*, to bear, presumably referring to its “deeply notched, crescentic” caudal fin

***Neolamprologus gracilis* (Brichard 1989)**

slender, referring to its shallow and relatively elongate body

***Neolamprologus kungweensis* (Poll 1956)**

-ensis, suffix denoting place: Kungwe Bay, Lake Tanganyika, type locality

***Neolamprologus laparogramma* (Bills & Ribbink 1997)**

lapara, side or flank; *gramma*, line, referring to 5-9 nearly vertical lines on anterior flank and upper belly, formed by linked pigmented scales

***Neolamprologus leleupi* (Poll 1956)**

in honor of entomologist Narcisse Leleup (1912-2001), who collected type and many other Tanganyikan cichlids described by Poll in the same publication [not to be confused with *N. leloupi*, described by the same author from the same lake but differing by one letter]

***Neolamprologus leloupi* (Poll 1948)**

in honor of malacologist Eugène Leloup (1902-1981), chief of the Belgian Hydrobiological Mission to Lake Tanganyika (1946-1947), during which type was collected [not to be confused with *N. leleupi*, described by the same author from the same lake but differing by one letter]

***Neolamprologus longicaudatus* Nakaya & Gashagaza 1995**

longus, long; *caudatus*, tailed, referring to very long filamentous caudal fin

***Neolamprologus longior* (Staeck 1980)**

longer, proposed as a subspecies of *N. leleupi* with a more slender body

***Neolamprologus marunguensis* Büscher 1989**

-ensis, suffix denoting place: Marungu highlands, which overlook type locality, near Kapampa, 80 km south of Moba, Lake Tanganyika, Democratic Republic of the Congo

***Neolamprologus modestus* (Boulenger 1898)**

modest or unassuming, allusion not explained, possibly referring to its uniform brown coloration in alcohol

***Neolamprologus mondabu* (Boulenger 1906)**

local name for this cichlid at Lake Tanganyika

***Neolamprologus mustax* (Poll 1978)**

moustache, referring to dark markings under eye, which contrast with white lower cheek

***Neolamprologus niger* (Poll 1956)**

black, referring to very dark coloration of adults due to black spot covering large portion of each scale

***Neolamprologus nigriventris* Büscher 1992**

nigri-, black; *ventris*, belly, referring to dark-black underside

***Neolamprologus obscurus* (Poll 1978)**

dark, referring to its overall dark-brown coloration

***Neolamprologus pectoralis* Büscher 1991**

of the chest, referring to its distinctively broad pectoral fin

***Neolamprologus petricola* (Poll 1949)**

petra, rock; *-cola*, living among, referring to rocky bottom habitat in Lake Tanganyika

***Neolamprologus prochilus* (Bailey & Stewart 1977)**

pro-, forward; *cheilos*, lip, referring to “notably protractile mouthparts”

***Neolamprologus pulcher* (Trewavas & Poll 1952)**

beautiful, proposed as a subspecies of *N. savoryi*, allusion not explained, perhaps alluding to more attractive markings on gill cover

***Neolamprologus savoryi* (Poll 1949)**

in honor of Bryan Wyman Savory (1904-1988), District Commissioner of Kigoma (Tanganyika Territory), for the “excellent reception” (translation) he gave the Belgian Hydrobiological Mission to Lake Tanganyika (1946-1947), during which type was collected

***Neolamprologus schreyeni* (Poll 1974)**

in honor of Andre Schreyen, “collaborateur” (and nephew) of aquarium fish exporter Pierre Brichard (1921-1990), who collected type

***Neolamprologus sexfasciatus* (Trewavas & Poll 1952)**

sex, six; *fasciatus*, banded, referring to six broad, dark vertical bands: one on nape, four on body, one at end of caudal peduncle

***Neolamprologus signatus* (Poll 1952)**

marked, allusion not explained, presumably referring to black markings on dorsal fin of male and/or black spot on caudal fin of female

***Neolamprologus splendens* (Brichard 1989)**

magnificent, referring to its “striking” coloration (dark purple or black body, metallic crimson opercular spot, unpaired fins edged in sky-blue, lemon-yellow crescent on caudal fin)

***Neolamprologus tetracanthus* (Boulenger 1899)**

tetra-, four; *acanthus*, spine, referring to four anal-fin spines, a low number among lamprologines

***Neolamprologus timidus* Kullander, Norén, Karlsson & Karlsson 2014**

shy, referring to its elusive or shy behavior in nature (almost always found upside down in a cave with belly close to the substrate or on a vertical substrate with the head pointing downwards)

***Neolamprologus toae* (Poll 1949)**

of Toa Island, also known as Kavala Island, Lake Tanganyika, type locality [sometimes placed in *Paleolamprologus*, treated here as a synonym of *Neolamprologus*]

***Neolamprologus tretocephalus* (Boulenger 1899)**

tretos, perforated; *cephalus*, head, referring to large pits of sensory canals on head

***Neolamprologus variostigma* Büscher 1995**

vario-, variable; *stigma*, mark or spot, referring to variable color pattern depending on mood

***Neolamprologus ventralis* Büscher 1995**

ventral, referring to its elongate ventral (or pelvic) fins

***Neolamprologus walteri* Verburg & Bills 2007**

in honor of cichlid aquarist Horst Walter Dieckhoff, who first recognized it as an undescribed species in the 1980s

***Neolamprologus wauthioni* (Poll 1949)**

in honor of René Wauthion, Provincial Commissioner in the Belgian Congo, for “encouragement and help” (translation) given to the Belgian Hydrobiological Mission to Lake Tanganyika (1946-1947), during which type was collected

Nimbochromis Eccles & Trewavas 1989

nimbus, rain cloud, referring to irregularly shaped, dark-clouded melanin patches on sides; *chromis*, a name dating to Aristotle, possibly derived from *chroemo* (to neigh), referring to a drum (Sciaenidae) and its ability to make noise, later expanded to embrace cichlids, damselfishes, dottybacks and wrasses (all perch-like fishes once thought to be related), often used in the names of African cichlid genera following *Chromis* (now *Oreochromis*) *mossambicus* Peters 1852

***Nimbochromis fuscotaeniatus* (Regan 1922)**

fusco-, dark or dusky; *taeniatus*, banded, referring to dark lateral band from eye to base of caudal fin

***Nimbochromis linni* (Burgess & Axelrod 1974)**

in honor of DeVon Wayne Linn, Chief Fisheries Officer, Malawi, whose assistance to the junior author made his field trip to Lake Malawi possible

***Nimbochromis livingstonii* (Günther 1894)**

patronym not identified, probably in honor of David Livingstone (1813-1873), Scottish missionary and explorer in Africa, who claimed to have discovered Lake Malawi (source of the Shiré River, type locality) in 1859; during one of his expeditions, the first fishes from Lake Malawi were collected for scientific purposes

***Nimbochromis polystigma* (Regan 1922)**

poly, many; *stigma*, mark or spot, referring to large irregular brown spots on body (tending to run together to form three longitudinal bands), numerous small dark spots covering head, body, and vertical fins, covered with numerous small dark spots, and a series of spots on pectoral-fin rays

***Nimbochromis venustus* (Boulenger 1908)**

beautiful or elegant, presumably referring to peacock-blue coloration with large deep-blue spots dotted with red, and top of head and broad edge to fins orange

Nyassachromis Eccles & Trewavas 1989

Nyassa, a lake or large expanse of water in many Bantu languages, alternate name of Lake Malawi, where all species are endemic; *chromis*, a name dating to Aristotle, possibly derived from *chroemo* (to neigh), referring to a drum (Sciaenidae) and its ability to make noise, later expanded to embrace cichlids, damselfishes, dottybacks and wrasses (all perch-like fishes once thought to be related), often used in the names of African cichlid genera following *Chromis* (now *Oreochromis*) *mossambicus* Peters 1852

***Nyassachromis boadzulu* (Iles 1960)**

named for Boadzulu Island, South East Arm, Lake Malawi, type locality

***Nyassachromis breviceps* (Regan 1922)**

brevis, short; *ceps*, head, referring to relatively small head, less than 1/3 of SL

***Nyassachromis leuciscus* (Regan 1922)**

leukiskos, Greek word for chub, probably derived from *leukos*, white, presumably referring to silvery coloration

(possibly a juvenile coloration as adults are greenish or blue)

***Nyassachromis microcephalus* (Trewavas 1935)**

micro-, small; *cephalus*, head, referring to short head, <30% of SL

***Nyassachromis nigritaeniatus* (Trewavas 1935)**

niger, black; *taeniatus*, banded, referring to black stripe, as broad as one scale, from opercular spot to base of caudal fin (Eccles & Trewavas 1989)

***Nyassachromis prostoma* (Trewavas 1935)**

pro-, before; *stoma*, mouth, referring to its protrusible mouth (Eccles & Trewavas 1989)

***Nyassachromis purpurans* (Trewavas 1935)**

purple- or dark-colored, referring to appearance of preserved male type (Eccles & Trewavas 1989)

***Nyassachromis serenus* (Trewavas 1935)**

serene, referring to its form, which suggests a “serene temperament” (Eccles & Trewavas 1989)

***Ophthalmotilapia* Pellegrin 1904**

ophthalmus, eye, referring to large eye of *O. boops*; *Tilapia*, a “neighbor” (translation) of that genus

***Ophthalmotilapia boops* (Boulenger 1901)**

bo, ox; *ops*, eye, presumably referring to large eye diameter, 2½ times in length of head

***Ophthalmotilapia heterodonta* (Poll & Matthes 1962)**

heteros, different; *odontos*, tooth, proposed as a subspecies with different lower pharyngeal jaw dentition (posterior median teeth tend to become more molariform)

***Ophthalmotilapia nasuta* (Poll & Matthes 1962)**

long-nosed, referring to its long snout, made even longer by a fleshy appendage in adults

***Ophthalmotilapia ventralis* (Boulenger 1898)**

ventral, referring to elongate ventral (pelvic) fins with yellow tips (egg mimics), extending far beyond anal-fin origin, and even reaching end of caudal fin in males

***Oreochromis* Günther 1889**

oreos, mountains, referring to Mt. Kilimanjaro (Kilimanjaro District, Tanzania), location of *O. hunteri*, type species; *chromis*, a name dating to Aristotle, possibly derived from *chroemo* (to neigh), referring to a drum (Sciaenidae) and its ability to make noise, later expanded to embrace cichlids, damselfishes, dottybacks and wrasses (all perch-like fishes once thought to be related), often used in the names of African cichlid genera following *Chromis* (now *Oreochromis*) *mossambicus* Peters 1852

Subgenus ***Oreochromis***

***Oreochromis andersonii* (Castelnau 1861)**

patronym not identified, probably in honor of Charles John Anderson (1827-1867), Swedish explorer, hunter, trader, and amateur naturalist, who explored Namibia (where type locality is situated)

***Oreochromis aureus* (Steindachner 1864)**

golden, referring to golden-yellow body color

***Oreochromis esculentus* (Graham 1928)**

edible, an important edible commercial species of Lake Victoria

***Oreochromis hunteri* Günther 1889**

in honor of Henry C. V. Hunter (1861-1934), Fellow of the Zoological Society of London, who collected type and provided notes about its distribution

***Oreochromis ismailiaensis* Mekkawy 1995**

-ensis, suffix denoting place: Ismailia Canal, Ismailia, Egypt, type locality

***Oreochromis jipe* (Lowe 1955)**

named for Lake Jipe, borders of Kenya and Tanzania, where it is endemic

***Oreochromis korogwe* (Lowe 1955)**

of Korogwe, Tanzania, where type locality (ponds at an experimental fish farm) was situated [author later known as Lowe-McConnell]

***Oreochromis leucostictus* (Trewavas 1933)**

leukos, white; *stiktos*, spotted or blotched, presumably referring to body scales, “in part dark, in part pearly grey”

***Oreochromis mortimeri* (Trewavas 1966)**

in honor of M. A. E. Mortimer, Research and Administrative Officer of the Zambian Department of Game and Fisheries, for his work on the *Tilapia* (original genus) of Zambia; in addition, he arranged a “memorable” trip to the Luangwa Valley for Trewavas so she could study this species in its environment

***Oreochromis mossambicus* (Peters 1852)**

-*icus*, belonging to: Mozambique, where type locality (Zambezi River) is situated (occurs throughout southeastern Africa and is widely introduced elsewhere)

***Oreochromis niloticus niloticus* (Linnaeus 1758)**

-*icus*, belonging to: Nile River, referring to native distribution in the Nile River valley (widely introduced throughout Africa and the world)

***Oreochromis niloticus baringoensis* Trewavas 1983**

-*ensis*, suffix denoting place: Baringo Lake, Kenya, where it is endemic

***Oreochromis niloticus cancellatus* (Nichols 1923)**

latticed or cross-barred but defined by Nichols to simply mean “barred,” referring to ~9 narrow dark cross-bars on sides

***Oreochromis niloticus eduardianus* (Boulenger 1912)**

-*iana*, belonging to: presumably referring to Lake Edward (border between Democratic Republic of the Congo and Uganda), one of the lakes where it occurs (but described from nearby Lake Kikorongo, a crater lake in Uganda)

***Oreochromis niloticus filoa* Trewavas 1983**

Amharic word for hot spring, referring to its occurrence in hot springs of the Awash River system of Ethiopia

***Oreochromis niloticus sugutae* Trewavas 1983**

of the Suguta River system, Kenya, where it is endemic

***Oreochromis niloticus tana* Seyoum & Kornfield 1992**

named for Lake Tana, Ethiopia, where it is endemic

***Oreochromis niloticus vulcani* (Trewavas 1933)**

of a volcano, referring to Crater Lake A, Central Island, Lake Rudolf (now Turkana), type locality (although subspecies appears to occurs throughout Lake Turkana per Trewavas 1983)

***Oreochromis placidus placidus* (Trewavas 1941)**

mild, quiet or gentle, allusion not explained; according to Trewavas (1983), it “prefers quiet pools with marginal vegetation”

***Oreochromis placidus ruvumae* (Trewavas 1966)**

of the upper Ruvuma River on the Tanzania-Mozambique border, type locality

***Oreochromis schwebischi* (Sauvage 1884)**

in honor of physician Paul-Victor Schwebisch, assistant medical officer of expedition that collected type

***Oreochromis shiranus shiranus* (Boulenger 1897)**

-*anus*, belonging to: upper Shiré River, between lakes Malawi and Malombe, type locality (also occurs in lakes Chilwa and Chiuta)

***Oreochromis shiranus chilwae* (Trewavas 1966)**

of Lake Chilwa, southeast of Lake Malawi, where it appears to be endemic

***Oreochromis spilurus spilurus* (Günther 1894)**

spilos, spot; *oura*, tail, referring to blackish spot on sides of caudal peduncle and/or rows of blackish spots on tail

***Oreochromis spilurus niger* (Günther 1894)**

black, referring to greenish-black body and/or “deep black” opercular spot and vertical and ventral fins

***Oreochromis spilurus percivali* Boulenger 1912**

in honor of Arthur Blaynoy Percival (1875-1941), Game Ranger (later Warden) in Kenya, who collected type

***Oreochromis urolepis urolepis* (Norman 1922)**

oura, tail; *lepis*, scale, referring to scaly covering on caudal fin

***Oreochromis urolepis hornorum* (Trewavas 1966)**

-*orum*, commemorative suffix, plural: in honor of the brothers Horn, Adolf and Albin, who explored German East-Africa (present-day Burundi and Tanzania), collecting specimens for the Vienna Museum, including syntypes of this taxon [see *Bathybates hornii*]

Subgenus ***Alcolapia* Thys van den Audenaerde 1969**

etymology not explained but clearly a combination of *alkali*, referring to highly alkaline habitats of *O. alcalica* and *O. grahami*, and *-lapia*, proposed as a subgenus of *Tilapia*

***Oreochromis alcalica* (Hilgendorf 1905)**

-*ica*, belonging to: *alkali*, referring to occurrence in highly alkaline waters of Lake Natron, Tanzania, type locality

***Oreochromis grahami* (Boulenger 1912)**

in honor of J. W. Graham (no other information available), who collected type in a hot soda lake at up to 48°C

***Oreochromis latilabris* Seegers & Tichy 1999**

latus, wide; *labris*, lip, referring to its “large and distinctly thickened” lips

***Oreochromis ndalalani* Seegers & Tichy 1999**

named for the Ndalalani area of Tanzania; name is derived from the Massai language and means “area with two streams,” referring to the two streams that enter the Southern Lagoon of Lake Natron, where it is endemic

Subgenus ***Neotilapia* Regan 1920**

neo-, new, proposed as a new genus related and similar to *Tilapia*

***Oreochromis tanganyicae* (Günther 1894)**

of Lake Tanganyika, where it is endemic

Subgenus ***Nyasalapia* Thys van den Audenaerde 1969**

Nyasa, referring to first four included species (*squamipinnis*, *karongae*, *sake*, *lidole*) all endemic to Lake Nyasa (Tanzanian name for Lake Malawi); *-lapia*, proposed as a subgenus of *Tilapia*

***Oreochromis angolensis* (Trewavas 1973)**

-ensis, suffix denoting place: Angola, where type locality (Quanza River at Cambambe) is situated

***Oreochromis chungruruensis* (Ahl 1924)**

-ensis, suffix denoting place: Lake Chunguru, Tanzania, where it is endemic

***Oreochromis karomo* (Poll 1948)**

local name for this cichlid at Lake Tanganyika (where it is endemic)

***Oreochromis karongae* (Trewavas 1941)**

of Karonga, near northern end of Lake Malawi, type locality

***Oreochromis lepidurus* (Boulenger 1899)**

lepid, scale; *oura*, tail, referring to “densely scaled” caudal fin

***Oreochromis lidole* (Trewavas 1941)**

Lodole, native name (plural: *Madole*) for this cichlid in Fort Johnston (now called Mangochi) and Monkey Bay (also called Lusumbwe), both near southern end of Lake Malawi

***Oreochromis macrochir* (Boulenger 1912)**

macro-, long; *cheiros*, hand, referring to longer pectoral fin (reaching beyond origin of anal fin) compared to *O. andersonii*

***Oreochromis malagarasi* Trewavas 1983**

named for Malagarasi swamps at Katere, Tanzania, type locality

***Oreochromis mweruensis* Trewavas 1983**

-ensis, suffix denoting place: Mweru, Democratic Republic of the Congo, type locality

***Oreochromis rukwaensis* (Hilgendorf & Pappenheim 1903)**

-ensis, suffix denoting place: Lake Rukwa, southwestern Tanzania, where it is endemic

***Oreochromis saka* (Lowe 1953)**

local name for this cichlid at south end of Lake Malawi [author later known as Lowe-McConnell]

***Oreochromis salinicola* (Poll 1948)**

salis, salt; *-cola*, dwelling in, referring to occurrence in saline springs at Mwashia, Democratic Republic of the Congo, where it appears to be endemic

***Oreochromis squamipinnis* (Günther 1864)**

squamus, scale; *pinnis*, fin, referring to caudal fin “densely covered with minute scales”

***Oreochromis upembae* (Thys van den Audenaerde 1964)**

of Upemba, Democratic Republic of the Congo, type locality

***Oreochromis variabilis* (Boulenger 1906)**

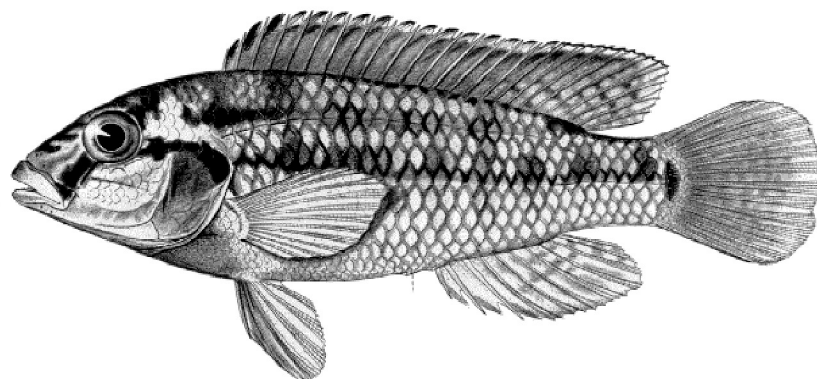
referring to “very variable” coloration, “some specimens olive-brown, others brilliant vermilion on the sides, others bright yellow with black markings and the dorsal and caudal fins edged with red, &c.”

Subgenus ***Vallicola* Trewavas 1983**

vallis, valley; *-cola*, dwelling in, allusion not explained, perhaps referring to its occurrence in the Eastern Rift Valley of Tanzania

***Oreochromis amphimelas* (Hilgendorf 1905)**

amphi-, both sides or double; *melas*, black, presumably referring to dark back (with white spots) and black chest, belly, and anal and ventral fins



Orthochromis machadoi. From: Poll, M. 1967. Contribution à la faune ichthyologique de l'Angola. Publicações Culturais, Companhia de Diamantes de Angola (DIAMANG), Lisboa No. 75: 1-381, Pls. 1-20.

***Orthochromis* Greenwood 1954**

orthos, straight, allusion not explained, perhaps referring to elongate body of *O. malagaraziensis*; *chromis*, a name dating to Aristotle, possibly derived from *chroemo* (to neigh), referring to a drum (Sciaenidae) and its ability to make noise, later expanded to embrace cichlids, damselfishes, dottybacks and wrasses (all perch-like fishes once thought to be related), often used in the names of African cichlid genera following *Chromis* (now *Oreochromis*) *mossambicus* Peters 1852

***Orthochromis geckii* Schedel, Vreven, Manda, Abwe, Manda & Schliewen 2018**

in honor of Jakob Geck, a “passionate, German fish naturalist,” for his “dedicated volunteer work and untiring support” for the ichthyology section of the Bavarian State Collection of Zoology (Munich); his “great experience in keeping rheophilic cichlids [in aquaria] contributed to the knowledge of behaviour and ecology of many cichlid taxa, including *O. katumbii* and *O. indermauri*”

***Orthochromis indermauri* Schedel, Vreven, Manda, Abwe, Manda & Schliewen 2018**

in honor of Swiss ichthyologist Adrian Indermaur (b. 1984), who was the first to document this new species with underwater photographs, videos, and with aquarium observations, “thereby contributing to a large extent to our knowledge of behavior and ecology of this species”

***Orthochromis kalungwishiensis* (Greenwood & Kullander 1994)**

-*ensis*, suffix denoting place: Kalungwishi River, Northern Province, Zambia, only known area of occurrence

***Orthochromis kasuluensis* De Vos & Seegers 1998**

-*ensis*, suffix denoting place: Kasulu village, western Tanzania, type locality

***Orthochromis katumbii* Schedel, Vreven, Manda, Abwe, Manda & Schliewen 2018**

in honor of Moïse Katumbi (b. 1964), businessman and former governor of Katanga (Democratic Republic of the Congo), a “great fish enthusiast” who supported part of the 2015 ichthyological research field expedition of the Mbisa Congo project; some specimens of this species were collected on his farm

***Orthochromis kimpala* Schedel, Vreven, Manda, Abwe, Manda & Schliewen 2018**

local Sanga language name for this cichlid in the Democratic Republic of the Congo

***Orthochromis luichensis* De Vos & Seegers 1998**

-*ensis*, suffix denoting place: small affluents of the Luiche River, itself an affluent of Lake Tanganyika, western Tanzania, only known areas of occurrence

***Orthochromis luongoensis* (Greenwood & Kullander 1994)**

-*ensis*, suffix denoting place: Luongo River, Northern Province, Zambia, only known area of occurrence

***Orthochromis machadoi* (Poll 1967)**

in honor of António de Barros Machado (1912-2002), zoologist of the Musée de Dundo, who collected type

***Orthochromis malagaraziensis* (David 1937)**

-*ensis*, suffix denoting place: Malagarazi (also spelled Malagarasi) River system of Lake Tanganyika, Tanzania, type locality

***Orthochromis mazimeroensis* De Vos & Seegers 1998**

-*ensis*, suffix denoting place; Mazimero River, a small affluent of the Malagarasi River, Burundi, type locality

***Orthochromis mosoensis* De Vos & Seegers 1998**

-*ensis*, suffix denoting place: Moso region, southeast Burundi, where type locality (upper Malagarasi River drainage)

is situated

***Orthochromis mporokoso* Schedel, Vreven, Manda, Abwe, Manda & Schliewen 2018**

Mporokoso, a town in the Northern Province of Zambia, near type locality

***Orthochromis polyacanthus* (Boulenger 1899)**

poly, many; *acanthus*, spine, referring to high number (19) of dorsal-fin spines

***Orthochromis rubrolabialis* De Vos & Seegers 1998**

ruber, red; *labialis*, of the lips, referring to red lateral spots on lips

***Orthochromis rugufuensis* De Vos & Seegers 1998**

-ensis, suffix denoting place: upper Rugufu River system, an affluent of Lake Tanganyika, western Tanzania, type locality

***Orthochromis stormsi* (Boulenger 1902)**

in honor of Lieut. Maurice Joseph Auguste Marie Raphael Storms (1875-1941), Belgian Army, who collected type and presented it to the Brussels Museum; Boulenger said he is cousin of the late Raymond Storms, “so well known for his important contributions to paleoichthyology”

***Orthochromis torrenticola* (Thys van den Audenaerde 1963)**

torrens, rushing waters; *-cola*, dwelling in, referring to its occurrence in the rapids of the Lufira River, just above the main falls at Kuibo, Democratic Republic of the Congo

***Orthochromis uvinzae* De Vos & Seegers 1998**

-ensis, suffix denoting place: Uvinza village, western Tanzania, type locality

***Otopharynx* Regan 1920**

otos, ear; *pharynx*, throat, referring to participation of prootic bone in articulation of upper pharyngeal jaw in some specimens of *O. auromarginatus* (Eccles & Trewavas 1989)

***Otopharynx aletes* Oliver 2018**

a grinder, referring to “well-defined” group of conspicuously enlarged molariform teeth on lower pharyngeal bone

***Otopharynx alpha* Oliver 2018**

first letter of Greek alphabet, referring to suprapectoral spot and posterior stripe, which suggest a dot and dash, an “A” in International Morse Code

***Otopharynx antron* Cleaver, Konings & Stauffer 2009**

cave or cavity, referring to how breeding males defend small sand-bottomed caves against conspecific males

***Otopharynx argyrosoma* (Regan 1922)**

argyros, silver; *soma*, body, referring to silvery body color (of females and immature males, and all specimens in alcohol)

***Otopharynx auromarginatus* (Boulenger 1908)**

aureus, gold; *marginata*, margined, referring to dorsal and anal fins edged in yellow

***Otopharynx brooksi* Oliver 1989**

in honor of John Langdon Brooks (1920-2000), Yale University, an early theorist on evolution in great lakes [coined by Oliver in 1984 but authorship might also involve Eccles and Trewavas, who made the name available in 1989]

***Otopharynx decorus* (Trewavas 1935)**

elegant or decorative, allusion not explained, probably reflecting Trewavas’ opinion about its shape and/or coloration [may belong in *Mylochromis*]

***Otopharynx heterodon* (Trewavas 1935)**

heteros, different; *odon*, tooth, referring to variety of forms of outer teeth in the jaws (bicuspid or tricuspid, or simple in larger specimens)

***Otopharynx lithobates lithobates* Oliver 1989**

lithos, rock; *bates*, a frequenter, referring to its distribution in rocky areas of southern Lake Malawi [coined by Oliver in 1984 but authorship might also involve Eccles and Trewavas, who made the name available in 1989]

***Otopharynx lithobates walteri* Konings 1990**

in honor of cichlid aquarist Horst Walter Dieckhoff, who discovered, photographed, and filmed many new cichlids in the Great Lakes of Africa

***Otopharynx mumboensis* Oliver 2018**

-ensis, suffix denoting place: Mumbo Island, southwest arm of Lake Malawi, only known area of occurrence

***Otopharynx ovatus* (Trewavas 1935)**

oval, referring to its shape (Eccles & Trewavas 1989)

***Otopharynx pachycheilus* Arnegard & Snoeks 2001**

pachys, thick; *cheilos*, lip, referring to greatly enlarged, fleshy lips that are folded back into the head

***Otopharynx panniculus* Oliver 2018**

a small cloth patch, referring to its quadrate suprapectoral spot, which appears to be “neatly ‘stitched’” between two vertical bars

***Otopharynx peridodeka* Oliver 2018**

peri-, around or near; *duodeka*, twelve, referring to its usually 12 lower-limb gill rakers, compared to the similar *O. panniculus*, which has 13-15

***Otopharynx selenurus* Regan 1922**

selene, moon; *oura*, tail, presumably referring to its “deeply emarginate” tail, shaped like the crescent of the moon

***Otopharynx speciosus* (Trewavas 1935)**

showy or brilliant, referring to coloration of males (Eccles & Trewavas 1989)

***Otopharynx spelaeotes* Cleaver, Konings & Stauffer 2009**

Greek for cave or cavern dweller, referring to its preference inside large caves formed by large boulders

***Otopharynx styrax* Oliver 2018**

a metal spike at the lower end of a spear shaft, referring to resemblance of this elongate cichlid with pointed head to the shape of that classical object

***Otopharynx tetraspilus* (Trewavas 1935)**

tetra, four; *spilos*, spot, referring to opercular spot and three other large dark spots (on upper lateral line, between lateral lines, at end of caudal peduncle)

***Otopharynx tetrastigma* (Günther 1894)**

tetra, four; *stigma*, mark or spot, referring to four large black spots on body (on operculum, on lateral line opposite to 9th and 10th dorsal spines, at beginning of lower lateral line, and on root of caudal fin)