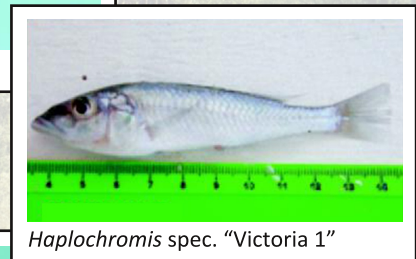


A PHOTOGRAPHIC GUIDE TO FRESHWATER FISHES OF KENYA

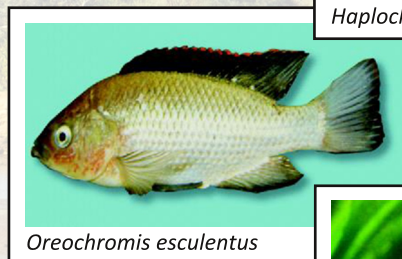
INCLUDING RIVERINE AND LACUSTRINE
HAPLOCHROMINES



Gnathonemus longibarbis



Haplochromis spec. "Victoria 1"



Oreochromis esculentus



Nothobranchius elongatus

DANIEL O. OKEYO &
WILLIAM O. OJWANG
COMPILERS

A Photographic Guide to Freshwater Fishes of Kenya

Main cover photo: Northern Ewaso Nyiro river, Samburu National Reserve, Kenya (photo credit: Peter R Steward)

Including:

- 10 colour site photos
- 171 colour fish photos
- 86 preserved fish photos
- 4 black and white fish drawings
- 2 missing fish photos
- 1 map
- 1 table

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A Photographic Guide to
**FRESHWATER FISHES
OF KENYA**

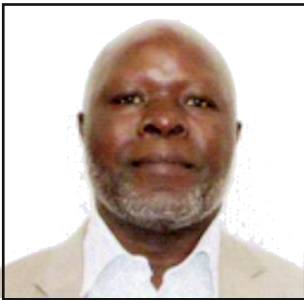


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FOREWORD

This book is dedicated to the original authorities of freshwater fishes of Kenya, who made tireless efforts to describe and name the fish species, before, during and post exploration times. The first recognized taxonomic description of fish of Kenya begun in the 18th Century, as recorded in 1758 in *Systema Naturae*, edited by Linnaeus. The century may be classified as post-exploration time with regards to Kenyan freshwaters. Linnaeus described non-indigenous (e.g. European eel, *Anguilla anguilla*; brown trout, *Salmo trutta*) as well as indigenous (e.g. Cornish Jack, *Mormyrops anguilloides*; Nile puffer, *Tetraodon lineatus*), in the historical edition. Further original descriptions of freshwater fish species of Kenya occurred during the century. For example, Nile distichodus, *Distichodus niloticus*, was described in 1762 by Linnaeus in an editorial by Hasselquist; the elephant nose fish, *Mormyrus kannume*, and milkfish, *Chanos chanos*, were described in 1775 by Forsskål; oxeve tarpon or Indo-Pacific tarpon, *Megalops cyprinoides*, was described in 1782 by Broussonet; rainbow trout, *Oncorhynchus mykiss*, was described in 1792 by Walbaum.

The description and naming of the majority of freshwater fishes of Kenya took place during the 19th Century. The century may be classified as exploration time with regards to fish of Kenyan freshwaters. Scientific interest began in the early 1800s with several surveys and expeditions made into the interior of Africa by naturalists and explorers including William Burchell, Ludwig Krebbs, and Wilhelm Peters. Fish collections from such adventures made it possible for the scientific description of Kenyan freshwater fish species by many authorities. For instance, the century kicked off with the description of dusky sleeper or brown gudgeon, *Eleotris fusca*, in 1801, by Schneider, edited by Bloch and Schneider; while the Nile bichir, *Polypterus bichir*, and Ngai, *Hyperopisus bebe*, were described in 1802 and in 1803 by Geoffroy Saint-Hilaire and La Cèpède, respectively.

A non-exhaustive list of authorities of freshwater fish of Kenya during this period also includes Mitchill (1815), Rafinesque (1819), Hamilton (1822), Cuvier (1829) De Joannis (1835), Rüppell (1835), Owen (1839), McClelland (1845), Valenciennes (1847), Gervais (1848), Smith (1849), Heckel (1851), Bleeker (1853), Castelnau (1861), Playfair (1866), Sauvage (1883), Fischer (1884), Hiltendorf (1888), Pfeffer (1889), Vaillant (1895), and Vinciguerra (1895). Several other European scientists, amongst them Steindachner, Weber, Günther, and Boulenger made exemplary contributions during the latter half of the 19th and early 20th Century. For example, Boulenger (1900, 1901, 1902), described the Ripon Falls barb, *Barbus altianalis*, the Victoria labeo, *Labeo victorianus*, and the short barbeled suckermouth, *Chiloglanis brevibarbis*. Other noteworthy publications of the latter period included Ahl (1924), Pellegrin (1926), Norman (1928), Graham (1928), Holly (1929), Lohberger (1929), Worthington (1929), Lowe-McConnell (1955), Daget (1957), Greenwood (1966), Bailey (1980), Hopson and Hopson (1982), Trewavas (1983), and Teugels (1986).

The most recently-described freshwater fish species of Kenya include: the dwarf Victoria mouthbrooder, *Pseudocrenilabrus multicolor victorianus* Seegers, 1990; the Boji Plains nothobranch, *Nothobranchius bojiensis* Wildekamp and Haas, 1992; the Mnazini nothobranch, *Nothobranchius willerti* Wildekamp, 1992; the Uganda nothobranch, *Nothobranchius ugandensis* Wildekamp, 1994; the feather-barbelled squeaker, *Synodontis manni* De Vos, 2001; the banded Somali nothobranch, *Nothobranchius* aff. *fasciatus* by Nagy, 2009.

This book is also dedicated to scientific researchers of the late 20th Century who have dedicated their efforts in conducting surveys and revisions, studying the biology, diversity, and distribution of fish species of Kenya, and sending the specimens to museums for preservation.

For example, riverine fish surveys were conducted in 1959 by Whitehead (Tana), in 1986 by Campbell & Saunders (Tana), in 1992 by Ochumba & Manyala (Sondou-Miriwu), and in 1999 by Mugo & Tweddle (Nzoia, Nyando, Sondou-Miriwu). Lacustrine fish surveys were conducted in 1938 by Copley (country-wide), in 1964 by Mann (Rudolf), in 1966 by Greenwood (Victoria), in 1974 by Ssentongo (Baringo), in 1982 by Hopson & Hopson (Turkana), in 1984 and in 1986 by Daget *et al.*, and in 1996 by Seegers (Rift Valley lakes).

Revisions were made for large *Barbus* (Banister, 1973), neoboline cyprinids (Howes, 1984), the family Cyprinidae (Reid, 1985), the genus *Clarias* (Teugels, 1986), and the family Schilbeidae (De Vos, 1995).

Additional accounts of freshwater fishes were given by Gee (1969) with regards to the biology of *Lates* species, Skelton (1984) and Okeyo (1998) with regards to diversity, Welcomme (1967) with regards to introduction and traslocation, and in 2000 by FishBase with regards to data electronic cataloguing.

Several other modern time researchers have made important contributions in terms of collection and preservation. Studies of specific freshwater fish or fish groups of Kenya have been conducted by Trewavas (1983; Tilapiine fishes), Lévêque & Daget (1984; Cyprinidae), Paugy (1984; Characidae), Maugé (1986; Gobiidae), Wildekamp (1994, 1995; killifishes), Huber (1996; killifishes), and Golubtsov & Berendzen (1999; electric catfishes).

Systematic ichthyology in Kenya should now focus on revision and studies of phylogenetic relationships. New approaches and techniques should be employed to study the early life history, behaviour, genealogy, and biochemical characteristics of our native fishes. The practical aspects of aquaculture and fisheries are being actively pursued by a new generation of scientists. Work on these recommended areas will be easier than before using this compilation of colour photographs depicting the Kenyan freshwater ichthyofauna.



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INTRODUCTION

To date there has been no comprehensive pictorial guide to the freshwater fishes of Kenya. The book by Copley (1958), based on the Kenyan ichthyofauna, is out of date and does not reflect our present knowledge of the fishes. The most recent annotated checklist (Seegers et al., 2003), only carried a few black and white images and was not fully reflective of our present knowledge of inland water fishes in Kenya.

Checklists of the freshwater fishes of neighbouring countries Uganda (Greenwood, 1966) and Tanzania (Bernacsek, 1980; Eccles, 1992) have been completed. Publication of this pictorial guide, which also covers the distribution of freshwater fishes in Kenya (including riverine and lacustrine shoreline haplochromines), thus represents an attempt to fill this gap. It is also intended to provide a solid basis for future studies and research, which are themselves essential for optimal conservation and utilisation of the biodiversity and natural resources of this country.

Some annotated remarks on the systematic status of certain species are included but this volume is not intended to serve as a revision of Kenyan freshwater fishes. Some groups, for example the families Protopteridae, Cyprinidae (especially members of the genus *Labeo*), Mochokidae, or Claroteidae to mention only a few, are in need of in-depth study.

Vernacular names accompany common and scientific names of all fishes in the book. Clear and useful information on the distribution of Kenyan fish also appears herein, and will hopefully offer some indications as to where additional research is necessary in order to identify all species present in Kenyan waters.

ICHTHYOLOGICAL HISTORY OF KENYA

The first collection of fishes for scientific reasons within the present borders of Kenyan territory was conducted between June and October 1861 by the Prussian Baron Von der Decken, and his accompanying naturalist R. Thornton (Kersten, 1869). There were some reports in Europe of a large mountain with snow in the interior of Africa, and Mount (herein Mt.) Kilimanjaro attracted many Europeans.

Baron Von der Decken started an expedition from Zanzibar Island to see the mountain for himself. He went by ship to Mombasa and continued on foot to Kasigua and Pare mountains, and following the Kenyan shore of Lake Jipe, to Taveta. Around Mombasa and on his way he collected some fishes which were sent to the Zoological Museum in Berlin and which were described by W.C.H. Peters in 1868. This first collection contained six fish species (Peters, 1868).

In 1882 and again in 1885/86 the German G.A. Fischer travelled to Africa and collected fish species throughout areas which now comprise northeastern Tanzania and northwards into Kenya. His first travel led him up the Pangani River and via Mt. Kilimanjaro along the rift valley to Lake Naivasha. Some important fish species he collected were described during 1884 in Hamburg by J.G. Fischer.

G.A. Fischer's second collection contained the first fishes from Lake Victoria known to science. His expedition took its way to the east of Lake Victoria and then into Uganda. The precise point where he collected the fishes is unknown since he repeatedly reached the lake itself. These Lake Victoria specimens were studied by F.M. Hilgendorf, curator of fishes at the Zoological Museum at Berlin, and their descriptions were published in 1888.

In 1890 Germany and Great Britain partitioned East Africa into spheres of influence, and from that point onwards the British became primary collectors of fish from the area which is now Kenya and Uganda. This material was sent to the British Museum of Natural History, and A. Günther and G.A. Boulenger published several times regarding fishes from Kenya.

The British collectors included names such as, A.B. Percival (different areas), H.C.V. Hunter and F.J. Jackson (Kilimanjaro), J.W. Gregory (Mt. Kenya), H.H. Johnston, E. Degen, E.G. Doggett and D. Radcliffe (Lake Victoria), S.L. Hinde (upper Tana drainage), and P.C. Zaphiro and W.W. McMillan (Omo drainage and northern Lake Turkana shore, which is today situated in Ethiopia or the Ethiopia/Kenya border region).

As both countries were then British protectorate, it is not always clear if fishes were from Kenya or Uganda, when the origin of the specimens was published alongside remarks such as "Lake Victoria" only. The intense collecting activities of H.H. Johnston et al. (although these may have been from Ugandan waters), permitted Boulenger to complete his book, 'Fishes of the Nile', in 1907.

There were other collectors in that part of Eastern Africa. For example an American, A. Donaldson Smith, made an expedition to the northern end of Lake Turkana. An Italian, E. Bayon, and a Frenchman, Ch. Alluaud, collected fishes from Lake Victoria.

Much of the material brought together by these collectors was also studied by G.A. Boulenger and contributed to the famous 'Catalogue of the freshwater fishes of Africa', published in four volumes (Boulenger, 1909, 1911, 1915 and 1916, respectively). Although out of date in some res-

pects, this piece of work is still a classic source of the knowledge on the freshwater fishes of Kenya. In recent times, a team comprising a Kenyan (Okeyo), a German (Seegers), and a Belgian (De Vos; see Seegers et al., 2003), collected and reported on riverine and lacustrine fishes of Kenya; while an Italian (Nagy; 2009, 2010) collected pool fishes.

Expeditions consisting of fishery scientists and students have also contributed to the knowledge of Kenyan ichthyofauna. For example, in the 1930's, the Cambridge expedition to the East African Lakes (Worthington, 1932; Trewavas, 1933; Wothington & Richardo, 1936), the French 'Mission Scientifique de l'Omo' (1932-33) and the George Vanderbilt African Expedition (1934), took place to the East African lakes and rivers. Lacustrine fishes (plus riverine fish species to a minor degree) were the main interest of the Cambridge Expedition, while the French 'Mission' not only collected fish from the River Omo and its delta, but also Lake Turkana. The specimens from the latter expedition were examined at the Paris Museum by Pellegrin (1935). The African expedition traversed the whole continent from east to west, and the Athi River was evidently crossed near Kibwezi from where a lot of fishes were collected and subsequently examined in Philadelphia, USA, by H.W. Fowler.

The increased interest in East African fishes and fisheries resulted in the establishment of an "on site" institution, the East African Fisheries Organization (EAFRO) at Jinja, Uganda, which existed between the late 1940's (EAFRO, 1949) and early 1960's, at which point the name changed to East African Fresh-water Fisheries Organization (EAFFRO, 1964) until the late 1970's (EAFFRO, 1976). EAFFRO continued to function even after the independence of the three East African countries (Uganda, 1961; Tanzania, 1962 and Kenya, 1963), under a new umbrella, the East African Community (EAC), but when the community broke down (around 1972) EAFFRO lost its supra-regional importance resulting in each of the three countries establishing her own fisheries research organization (Uganda Freshwater Fisheries Research Organization, UFFRO, 1977; Tanzania Fisheries Research Institute, TAFIRI, 1984, and Kenya Marine and Fisheries Research Institute, KMFRI, 1981), with their respective headquarters based at Jinja (Uganda), Mwanza (Tanzania) and Mombasa (Kenya).

Although EAFRO and EAFFRO focused on studies of Lake Victoria and Kioga some research were done on other waters as well, including the rivers of Kenya (e.g. Whitehead, 1958, 1959, 1960, 1962; Mann, 1964, 1966, 1969, 1971). In general EAFFRO became the international source of ichthyological research in eastern and central Africa, and the list of scientists who conducted studies there in the 1950's and 1960's represents something of a 'who is who' of ichthyology during that period since it includes G. Fryer, P.H. Greenwood, R. Lowe-McConnell, M.J. Mann, J. Oke-di, and P.J.P. Whitehead – many of whom later worked at the British Museum (Natural History) in London.

UFFRO, TAFIRI and KMFRI continued to collect fishes from Lake Victoria and other waters of eastern Africa, with most specimens stored in the National Museums and some institutions of higher learning in Uganda, Tanzania and Kenya. In 1994, UFFRO, TAFIRI and KMFRI were linked together in terms of research collaboration under the Lake Victoria Fisheries Organization (LVFO) at an inauguration at Kisumu, Kenya, which was sponsored and coordinated by the United Nations' Food and Agriculture Organization, FAO, Rome, Italy.

KMFRI was still actively collecting fishes from Lake Turkana in 2012 while LVFO, like EAFFRO before it, tends to focus on fisheries and limnological research in Lake Victoria and vicinity (excluding rivers). LVFO aims to avoid duplication of research and publish its results at an internationally-recognised level.

METHODOLOGY

This book presents photographs of fishes which have been or may be collected from the freshwaters of Kenya. The information included is the result of field studies and fish collections which covered the widest parts of the country. For example, some images were contributed by national and international field fish collectors, whose credits are indicated under each photo. Intensive study of literature and museum collections was also involved.

The book consists of a title page, table of contents, introduction, methods and acknowledgements, plus five major sections: (1) hydrography of Kenya (2) fish species from Kenyan freshwaters (3) glossary (4) references and (5) indexes of local, common and scientific fish names.

The hydrography section describes major inland water bodies of Kenya. The fish species are listed in systematical order and indexed into three subsections: (1) fishes which can be found in freshwaters of Kenya; (2) fishes which were introduced into Kenyan waters; (3) fishes which possibly occur in Kenyan waters, e.g., peripheral marine fishes, stragglers, or occasional migrants. This section also includes information pertaining to distribution, synonymies, selected useful notes, and a basic physical description of each species.

Only works cited in the book are included in the alphabetical reference list, but following this is an exhaustive bibliography listing all relevant literature and further reading.

It is difficult to classify fishes which can be found in the lower reaches of rivers and brooks, or in estuaries. Some of them are or may be species of marine origin which may be found sporadically in inland waters, and it seems probable that in the future more species of this type may be reported from freshwater biotopes along the Kenyan coast, for those parts of the country are virtually unexplored in terms of ichthyofauna.

Pelagic Lake Victoria haplochromines are omitted from the book, simply because at present our knowledge of this group of fishes is too weak to include a reliable list. The reasons for this include: 1) only a small proportion of the haplochromine species inhabiting Lake Victoria are known and described either scientifically, or at least in such a way that different populations can be distinguished for practical purposes; 2) it is unclear which of the described species can be found in Kenyan waters of Lake Victoria. While it was previously thought (Graham, 1929), that Lake Victoria haplochromines were spread throughout the entire lake we now know that only some species have a lake-wide distribution (Barel et al., 1991; Goldsmith & Witte, 1992) with others restricted to particular shores or islands, as it is the case in lakes Malawi (Eccles & Trewavas, 1989) and Tanganyika (Hori et al., 1993).

From a biological point of view, it is regrettable that the section covering the fishes which have been introduced into freshwaters of Kenya contains a total of 24 alien species. Some of these, such as trout and carp, were introduced for fisheries purposes. *Poecilia* species were thought to possibly function as a control against mosquitoes (Welcomme, 1988), while the third group which includes Nile perch were released by aquarists (Gee, 1964), sometimes inadvertently. In nearly all cases the establishment of non-native species has turned out to represent a threat for our indigenous fishes due to increased competition for ecological niches (Welcomme, 1988). In a number of cases one or more native fish species has been replaced by an alien species in its habitat.

Many photos presented in this book depict fishes collected and photographed alive in order to properly identify them. This proved to be very important, because important elements of colour

pattern often disappear when fish specimens are preserved, while it may also change with age, or depending on the mood or diet of the fish.

With few exceptions each fish species is portrayed by a colour photograph of a live specimen from Kenyan waters, although in a few cases images taken outside the country were used. When no photograph of a live fish was available authorisation for use was requested from known contributors, or an image of a preserved specimen(s) is included instead. Black and white illustrations from cited literature are also used when no photograph could be sourced. Where neither photo nor illustration proved available, blank spaces were left to fill with future contributions.

Classification of fishes broadly follows Eschmeyer (1990) with some modifications. For example, Protopteridae is considered a family in its own right following Nelson (1994); characins are excluded from the family Alestidae whereas Gery (1977) combines them. In contrast to Nelson (1994), Myers (1929), Gery (1977), and Paugy (1986), the genus *Brycinus* Valenciennes in Cuvier & Valenciennes, 1849, is listed as distinct from *Alestes* Muller and Troschel, 1844. Distichodontidae is treated as a valid family in accordance with Vari (1979). Mo (1991) is followed in recognising Clariidae as a distinct family and not included in Bagridae. *Aplocheilichthys* and related forms are herein placed in the fish family Aplocheilichthyidae as per Sethi (1960) and in accordance with the results of Meyer & Lydeard (1993), with Poeciliidae excluded (Eschmeyer, 1990). Mastacembelidae is retained in the order Synbranchiformes following Gosline (1983) and Travers (1984).

Spelling of fish names is based on original descriptions. For example, one 'i' or two 'ii' is (are) used depending on the respective authors (e.g. Jackson's barb *Barbus jacksoni* Günther, 1889, marble mountain catfish *Amphilius jacksonii* Boulenger, 1911). In the text, the scientific name of each species is followed by the most appropriate English, common and vernacular name(s) where possible. The most important synonyms or generalised names under which the respective species is or was known are also included (e.g. "Tilapia" for all the species which are currently included in the genus *Oreochromis*). In addition, a brief diagnostic procedure allowed us to better recognise a questionable species or discriminate between closely related taxa.

The known range of each fish species in Kenya is also presented, and the distribution indicates that certain fish species were collected in different parts of the country. Museum specimen numbers are only given in a few cases. These numbers distinguish specimens from different museums of natural history (e.g. the National Museums of Kenya, NMK, Nairobi, Kenya; the Natural History Museum, BMNH, London, UK; the Royal Museum of Central African Fishes, MRAC, Tervuren, Belgium; National Museum of Natural History, MNHN, Paris, France; Zoological Museum of Humboldt University, ZMB, Berlin, Germany; Zoologisches Institut und Museum Universität Hamburg (Zoological Museum of Hamburg University, ZMH), Germany; Senckenberg Museum, Frankfurt (SMF) am Main); Museums of Comparative Zoology, MCZ, Harvard University, USA; South African Institute of Aquatic Biodiversity, SAIAB, Grahamstown, RSA; Albany Museum, Grahamstown, AM, Grahamstown, RSA.

An overview of all fish species and hydrological systems in which they occur is provided. Where applicable comments are given regarding the systematic status or localities from where the respective specimens were collected.

Finally, fish descriptions follow original authors (e.g. Boulenger, 1900; see the bibliography list) and field observation, with unidentified species also listed. Some of the latter are only known from arbitrary numbers of specimens, and assigned temporary, informal names which generally refer to sites of collection (e.g. *Barbus* spec. "Baringo"; *Barbus* spec. "Nzoia 1"; *Barbus* spec. "Nzoia 2"; *Chiloglanis* spec. "Northern Ewaso Nyiro", etc.).

ABBREVIATIONS

AM	=	Albany Museum, Grahamstown, RSA
BMNH	=	British Museum of Natural History (The Natural History Museum, NHM), London, UK
CAFS	=	Chinese Academy of Fisheries Sciences
DATZ	=	Die Aquarien und Terrarien Zeitschrift (German Journal of e.g. killifishes)
DF-KMRD	=	(former) Department of Fisheries, Kenya Ministry of Regional Development
EAC	=	East African Community
EAFFRO	=	East African Fresh-water Fisheries Organization
EAFRO	=	East African Fisheries Organization
FAO	=	United Nations Food and Agriculture Organization, Rome, Italy
FL	=	Fork length (of a fish specimen)
FLI	=	Fitz Lipmann Institute, Germany
IAC	=	Inland Aquaculture Center, Omahenene, Namibia
ICIPE	=	International Center for Insect Physiology and Ecology
ICLARM	=	International Center for Living Aquatic Resources Management
ICZN	=	International Code of Zoological Nomenclature
KMFRI	=	Kenya Marine and Fisheries Research Institute
KMRD	=	(former) Kenya Ministry of Regional Development
LVFO	=	Lake Victoria Fisheries Organization
MCZ	=	Museums of Comparative Zoology, Harvard University, USA
MNHN	=	National Museum of Natural History, Paris, France
MRAC	=	Musee Royal de l'Afrique Centrale (Royal Museum of Central African Fishes), Tervuren, Belgium
NEA	=	New England Aquarium, USA
NMK	=	National Museums of Kenya, Nairobi, Kenya
NMK FW	=	Catalogue code letters of freshwater fish specimen kept at
ODA	=	Overseas Development Administration, London, UK
RSA	=	Republic of South Africa
SAIAB	=	South African Institute of Aquatic Biodiversity, Grahamstown, RSA
SL	=	Standard length (of a fish specimen)
SMF	=	Senckenberg Museum, Frankfurt am Main
TAFIRI	=	Tanzania Fisheries Research Institute
TL	=	Total length (of a fish specimen)
UFFRO	=	Uganda Freshwater Fisheries Research Organization
UK	=	United Kingdom
UNISWA	=	University of Swaziland
USA	=	United States of America
ZMB	=	Zoological Museum of Humboldt University, Berlin, Germany
ZMH	=	Zoological Museum of Hamburg University, Germany

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The compilation of this guide is intended to fill a deficit of information in respect of the distribution and identification of freshwater fishes in Kenya. It is based on decades of work conducted by fish lovers and institutions across the planet to all of which we express our gratitude:

In the initial stages of the project, Norbert Odero, former director of formerly DF-KMRDD, assigned Jane N. Kinya to assist the compiler in familiarising himself with the diversity of fishes in Kenya. Rosemary Lowe-McConnell of BMNH, London, advised the compiler in methods of engaging global researchers in contributing towards this book. Helida Oyieke, Dorothy Nyingi, Edward Njagi, Mercy N. Muiruri and Joseph Gathua (NMK, Nairobi), Benson Mwangi (Kenyatta University, Nairobi), Enos Were (Dominion Farms, Kenya), Julius O. Manyala and James Barasa (Moi University, Kenya), Herick Othieno and Obiero Ong'ang'a (OSIENALA, Kisumu, Kenya), Oliver Crimmen, Patrick D. Campbell, Lisa Di Tommaso, Trudy Brannan and Nancy Chillingworth (MNH, London), Tobias Musschoot and Jos Snoeks (MRAC, Tervuren, Belgium), Sherwyn C. Mack, Vanessa Rouhani and Mzwamdile Dwani (SAIAB, Grahamstown, RSA), Ferdi de Moor and Helen James (AM, Grahamstown, RSA), Irina Eidus (ZMH, Germany), Anne Previato, Philippe Keith and colleagues (MNHN, Paris, France), Peter Bartsch (ZMB, Berlin, Germany), Alexander Dorn (FLI, Germany), Helmut Wellendorf (Natural History Museum, Wien), Rachel Atanacio, Nicolas Bailly and Malcolm Beveridge (World Fish Center, Malaysia), Karsten Edward Hartel (MCZ, Harvard University, USA), Melanie Stiassny (American Museum of Natural History, USA), W. Linn Montgomery (Northern Arizona University, USA), Scott Dowd (NEA, USA), Jeffry Divino (University of Connecticut, USA), Leonard Lovshin (Auburn University, USA), Brian Walters (Nanaima, BC, Canada), and many colleagues at the Great Lakes University of Kisumu, Kenya, and University of Fort Hare, RSA, represented their institutions in responding to our questions and requests.

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Pete Liptrot and Paul Dixon of Bolton Museum Aquarium, UK, helped immensely in making this field guide become available to students and researchers around the world by introducing us to Matt Ford and Duncan Wraight of SeriouslyFish, the publishers. They believe that through this project updates and changes in taxonomy will be added quickly and therefore disseminated efficiently. They congratulate all contributors, authors and editors of this work, are honoured to have assisted in achieving its eventual completion, and will continue to support the project going forward. We also give gratitude to Arthur Sitebe and Aiste Chomiciute for cover page and book design.

We owe much to members of our global network without whom this project would have surely failed, and it is not deliberate if we did not include all names in the acknowledgements or contributors' list. We humbly request that omissions, corrections, comments or further high quality photographic contributions be submitted to the first compiler.

Most of the Kenyan portion (e.g. Winam Gulf) has a depth of less than 20 m. Many other small water bodies (e.g. Lake Kanyaboli, Lake Sare, Lake Simbi, Yala and Ahero Swamps) are dotted around the outskirts of Lake Victoria.

Kenyan Lake Victoria is characterised by clear blue water, island bays such as Kolo or Rusinga (Figure 2) where tilapia proliferate, Ugege or Rusinga (Figure 3) with populations of Lake Victoria sardine, and Got Ogeng'o or Rusinga (Figure 4) with Nile perch. Mainland shorelines such as Kisui (Figure 5) are typical habitats of robbers, and Port Victoria (Figure 6) of catfishes.

2) The Rift Valley lakes: the larger Rift Valley lakes located in Kenya are Turkana, Ogipi, Baringo, Bogoria (formerly Hannington), Nakuru, Elementaita, Naivasha, Magadi, and Natron.

Lake Turkana shared a connection with the River Nile in ancient times, but today is situated in a closed basin with no outlet (Figure 1). The Omo River flows into the north of Lake Turkana, which is situated entirely within Ethiopian boundaries. The Swam River rises from Mount Elgon in the south west and later becomes the Turkwell River, which only arrives to the lake during times of rain. This is also the case with the north-flowing Kerio and Suguta rivers, albeit more so, with the latter in particular only seldom reaching Lake Turkana.

Lake Baringo is situated in one of the interior basins within the Rift Valley, but certain elements of its ichthyofauna such as Nile tilapia *Oreochromis niloticus* (Linnaeus, 1758) demonstrate a previous connection to Lake Turkana. The seasonal rivers Molo and Perakera bring water into the lake at its southern end.

Lake Bogoria is a salt water lake but the Waseges River which enters from the north carries freshwater. There are fishes in the river which survive part of the year in rest water pools since it becomes desiccated during dry seasons.

Lake Nakuru has a very small catchment and dries up from time-to-time. Lake Magadi tilapia *Alcolapia grahami* (Boulenger, 1912) has been introduced repeatedly here and seems to be the only fish which is able to survive in the strongly alkaline water.

In fact, the three salt lakes Bogoria, Nakuru and Elementaita all lack autochthonous fishes, although some species inhabit affluents of Lake Bogoria, while recent reports of tilapia in Lake Elementaita suggest artificial introduction.

Lake Naivasha contains freshwater, and a few fish species formerly occurred in its basin including one, possibly two, lampeyes of the genus *Aplocheilichthys*, and straightfin barb *Barbus paludinosus* Peters, 1852 (formerly referred to as *B. amphigramma* Boulenger, 1903). These native species have disappeared since the lake was stocked with different species of *Oreochromis* and *Tilapia* alongside non-African fishes such as black bass, *Micropterus salmoides* La Cepède, 1802, and mirror carp *Cyprinus carpio carpio* Linnaeus, 1758. The rivers Gilgil and Malewa drain the Aberdare Mountains and flow into the lake.

The Lake Magadi basin is a relict portion of a larger ancient lake which also contained Lake Natron. Lake Magadi is the natural habitat of *Alcolapia grahami*, which inhabits some springs producing relatively fresh water.

The Lake Natron basin occupies a large part of the southern Kenyan Rift Valley. It is fed by the Southern Ewaso Nyiro river which rises in the Mau escapement and flows southwards before emptying into the lake via the Shombole Swamps at the border between Kenya and Tanzania.



Figure 2. Kolo Bay Rusinga Island, Lake Victoria – location of Nile tilapia *Oreochromis niloticus* (Photo credit: Daniel O. Okeyo). Clear, blue, shallow waters; brown area to the top right of the photo is low-lying ground appropriate for aquaculture (tilapia and catfish).



Figure 3. Ugege Bay, Ngodhe Island front – location of Lake Victoria sardine *Rastrineobola argentea* (Photo credit: Daniel O. Okeyo). The island acts as a wave/current barrier making the area in front of it calm.



Figure 4. Got Ogeng'o, Rusinga Island – location of Nile perch *Lates niloticus* (Photo credit: Daniel O. Okeyo). Water deepens abruptly from the shore line.



Figure 5. Kisui Beach, Lake Victoria – location for Victoria robber *Brycinus jacksonii* (Photo credit: Daniel O. Okeyo). Man in the photo is fishing with traditional pole and line.



Figure 6. Port Victoria, Lake Victoria – location for Lake Victoria squeaker *Synodontis victoriae* (Photo credit: Daniel O. Okeyo). The broad-leaved plant in the center of the photo is rooted water Hyacinth.



Figure 7. Mnazini, lower Tana – location of blue nothobranch *Nothobranchius jubbi* and 'Mnazini' nothobranch *N. aff. fasciatus* (Photo credit: Béla Nagy).

Several small water bodies, some of which are seasonal but nevertheless rich in fish species are dotted around the country (see Figure 1). Lakes Jipe, Chala, Amboseli (plus its associated swamps) lie between Kenya and Tanzania. Many others, e.g., lakes Kabongo, Bilisa, Gamti and Shalu, and the wetlands of Jarach, Ol Bolosai, and Lorian, are located entirely within Kenya, with several on the lower floodplains of the Tana and Sabaki rivers.

Water holes, river pools, and oxbows located in floodplains and coastal areas serve as important habitats for killifishes. For example, following Nagy (2009, 2010) the blue nothobranch *Nothobranchius jubbi* Wildekamp & Berkenkamp, 1979, and ‘Mnazini’ nothobranch *N. aff. fasciatus* are found at Mnazini (Figure 7). The Kikambala nothobranch *N. interruptus* Wildekamp & Berkenkamp, 1979 at Kikambala (Figure 8), the elongate nothobranch *N. elongatus* Wildekamp, 198 at Mariakani (Figure 9), the Pangani nothobranch *N. palmqvisti* (Lonningberg, 1907) and the blackspotted nothobranch *N. melanospilus* (Pfeffer, 1896) at Ramisi (Figure 10).

The fluvial systems of Kenya are largely influenced by the Great Rift Valley with seven major drainage basins as follows:

1) Lake Victoria: a large basin containing nine river systems of significant size (the Sio, Nzoia, Yala, Nyando, Sondu, Miriu, Kuja, Migori, and Mara). The Nzoia and Yala are the largest rivers discharging into Lake Victoria on Kenyan territory to the north, with the Sondu and the Miriu entering to the south, the Sio near the Ugandan border, and the Kuja and Migori near the border with Tanzania.

The Mara has its source in the Mau Escarpment in Kenya but flows into the lake near Musoma, Tanzania. In total this group of rivers drains nearly half of Kenya’s runoff and carries it westward into Lake Victoria. Their catchment comprises the area west of the Rift Valley delineated by Mount Elgon in the north.

2) Rift Valley: an area with its own internal drainage, the largest affluent of which is the Omo River in the north which is situated entirely in Ethiopian territory. Rising from Mount Elgon in the southwest of Lake Turkana, the Turkwel River does not reach the lake on a regular basis, falling dry in times of little rain. This is also the case with the Kerio and especially the Suguta systems which flow northwards towards Lake Turkana.

There are some smaller temporal rivers, such as the Molo and Perakera, which are mainly located in the south and supply water to Lake Baringo when actively flowing. The Waseges River enters Lake Bogoria from the north and also dries up in drought period although some perennial restwater pools evidently remain since there are resident *Clarias* catfishes and cyprinid species. The Njoro is another seasonal drainage which brings water from the Njoro Hills into Lake Nakuru during rains. The Malewa and Gilgil Rivers transport water from the Aberdare Mountains to Lake Naivasha.

3) Southern Ewaso (Uaso) Nyiro: this river rises in the Mau Escapement alongside several sub-drainages and lakes and flows southwards to empty into Lake Natron via the Shombole Swamps at the border between Kenya and Tanzania. Fish species reported to inhabit the lake and swamps include Shombole tilapia *Alcolapia spec. aff. alcalicus* (Hilgendorf, 1905), *A. ndalalani* and *A. latilabris* (Seegers & Tichy, 1999) although presence of the latter pair is currently considered questionable.

4) Pangani: this river drains the southern and southeastern flanks of Mount Kilimanjaro and the majority of it is situated in Tanzania, with only parts of the upper basin such as the Lumi River and eas-

tern half of Lake Jipe (Figure 1) in Kenya. Lake Challa or Chala, an isolated crater Lake shared with Tanzania, may have a subterranean connection with the Pangani drainage system but has no surface outflow, .

5) Voi: A relatively minor east-flowing river which rises near Voi and enters the Indian Ocean as the River Geshi at a point near Kilifi, more-or-less equidistant between Malindi and Mombasa.

6) Athi: The southern catchment east of the Rift Valley arising in the central highlands. Its source is in the Ngong Hills south of Nairobi and it is the second largest east-flowing river of Kenya (Figure 1). It drains the Kipiti Plains south of Nairobi, the southern slopes of the Aberdares Mountains, part of the Yatta Plateau and the eastern slope of Mount Kilimanjaro.

The Nairobi and Tsavo Rivers represent its major tributaries with the latter being born at Masima Springs. Below the confluence of the Athi and the Tsavo at Lugards Falls, the river is referred to as Galana while in its lower course it is called the Sabaki.

7) Tana: Kenya's longest river drains the northeastern portion of the Aberdares and the southern and eastern slopes of Mount Kenya (Figure 1) from where it flows eastward to the Indian Ocean. The Thika, Sagana, Thuchi and Kathita systems are its major affluents.

The Tana does not flow directly to the ocean, and in its upper course is oriented northwards towards the Equator before turning southward via a large bend to reach Garissa. From Garissa it meanders over a broad floodplain with partial coverage by riverine forest (Figure 11) where ox-bows, cut-offs and other such features are common. It finally enters the ocean at Kipini, southwest of Lamu.

The river thus passes through most of Kenya's agro-climatic zones from humid and cold areas on Mount Kenya and the Aberdares, to very arid and very hot zones over much of its lower basin.

The cold upper reaches are above 1,500 m AMSL and were stocked with trout in colonial times, while downstream the upper Tana is impounded by the Masinga, Kamburu, Gitaru, Kindaruma, and Kiambere dams which contain increasing numbers of tilapia and common carp (escapees from Sagana fish farm), and mudfish (Jumbe, 1997). The fish communities of the lower courses, below the rapids at Kora, seem to be fairly undisturbed. They are subjected to large seasonal fluctuations in the amount of water carried to the Indian Ocean, normally with peaks in November and May.

8) Northern Ewaso (Uaso) Nyiro: the most extensive but driest catchment in Kenya. This river drains the northern parts of Mount Kenya and the Aberdare Mountains, and its major headwaters are the Ewaso Narok, Suguroi and Nanyuki rivers, plus the seasonal Dariora and Merillo systems.

The Northern Ewaso Nyiro was historically an affluent within the lower Juba basin but today terminates at the Lorian Swamps, although in exceptional floods flow may continue into Somalia. Chanler's Falls are a remarkable interruption of the uniform flow of muddy water, and since the falls represent a natural barrier to fishes the areas above and below them may harbour distinct species.



Figure 8. Kikambala, north coast – location of Kikambala nothobranch *Nothobranchius interruptus*. (Photo credit: Béla Nagy). Water lilies in the pool serve as refuge.



Figure 9. Mariakani near and northwest of Mombasa, Voi-Mombasa road - location of elongate nothobranch *Nothobranchius elongatus* (Photo credit: Béla Nagy).



Figure 10. Ramisi, lower Ramisi River, south coast - location of Pangani nothobranch *Nothobranchius palmqvisti* and blackspotted nothobranch *N. melanospilus* (Photo credit: Béla Nagy). Notice the overhanging trees which provide shade and crevices for refuge.



Figure 11. Tana River flood plains (Photo credit: Béla Nagy). See associated forests on edges.

FISH SPECIES ACCOUNTS HOW TO USE THIS PHOTO GUIDE

The various sections of this book are interrelated and sometimes several should be consulted to ensure accurate identification. It is usually most efficient to first identify a fish to family level, for which a brief search through photographs or illustrations should prove sufficient. Otherwise, the guide to **Orders and Families** contains the necessary information. Once the family is established the relevant species accounts, of which the majority are accompanied by an illustration or photo, can be consulted to obtain additional information including description and distribution.

Text is restricted to information regarding scientific, common, and vernacular names, adult size, distribution, and description. Vernacular names are presented between open and closed inverted commas and the words in brackets following them indicate the local language(s) in which the fish have been named and the localities from where the names have been obtained (e.g. Luo, L. Victoria; Pokomo, Lower Tana). Localities are not provided for names with widespread use (e.g. "Mamba" (Swahili); "Kasulubana" (Gusii, Luhya)).

Information regarding vernacular names is scarce (Copley, 1941, 1952, 1958; Hopson & Hopson, 1982), with the majority having been obtained from local fishers in the field. Seegers et al. (2003) attempted to present a selection but a great deal more data should be obtained. It is hoped that additional vernacular names will be made available to the compilers by readers of this guide.

Scientific names are accompanied by the name of the authority who originally described the species plus the date of publication.

Abbreviations used are as follows for fins: dorsal fin (D), first dorsal fin (D1), second dorsal fin (D2), dorsal adipose fin (D adipose), anal fin, (A), caudal fin (C), pectoral fin (P1), pelvic fin or ventral fin (P2); for morphometric measurements: total length (TL), standard length (SL), fork length (FL), head length (HD or HL), body depth (BD), predorsal length (PDL), caudal peduncle (CP), caudal peduncle length (CPL), caudal peduncle depth (CPD), orbit or eye diameter (OD); scales in mid-lateral line (LL); fin bony spines (cap Roman letter e.g. I, II, ...), fin hard-ray (low case Roman letter – e.g. i, ii, ...), fin ray (imperial number – 1, 2, ...); for metric length and mass units: millimeters (mm), centimeters (cm), meters (m), kilometers (km).

Each species account is accompanied by a **photograph(s)** of a live specimen(s) where possible. In cases where such an image proved unavailable a photograph of a preserved specimen or black and white **illustration** or outline is included instead. Preserved specimens and illustrations are archived at world museums with an interest in ichthyology, e.g., National Museums of Kenya (NMK, Nairobi, Kenya), Natural History Museum (BMNH, London, UK), Museum of Central African Fishes (MRAC, Tervuren, Belgium), National Museum of Natural History (MNHN, Paris, France), Zoological Museum of Humboldt University (ZMB, Berlin, Germany), Zoologisches Institut und Museum Universität (ZMH, Hamburg, Germany), and the Senckenberg Museum am Main (SMF, Frankfurt, Germany). Illustrations in particular may differ in appearance from live specimens encountered in the field or captivity, and should therefore never be the sole means of identification.

Distribution as currently known and brief annotations are included for each species, accuracy of the former having been verified by field excursions. New distribution records from the public are welcomed and should be addressed to the compilers. The annotations are intended to supply additional information regarding taxonomy, nomenclature, and other noteworthy points. Data relating to introductions, distribution, and taxonomic status of each species is also included when possible.

Older records are often cited, some of which are based on misidentification or the use of antiquated names, but none earlier than the list of Kenyan fishes published by Copley (1941). For the large tilapiines the nomenclature proposed by Trewavas (1983) is followed, and the reader is referred to this authoritative work for additional information.

Descriptions are based on field notes, preserved specimens, and both published and unpublished literature. They include dorsal (D) and anal (A) fin formulae plus maximum adult size in terms of length. Readers are cautioned in respect of fish colour pattern descriptions; colour is extremely variable depending on a variety of factors such as the nature and condition of the environment, the condition, age and social status of the specimen and even the conditions under which the fish is photographed or held prior to being photographed. The colour pattern depicted in photographs and illustrations may thus differ considerably from a specimen encountered in the field or captivity meaning identification of a species should never be based on colour alone.

Glossary contains an alphabetical list of terms alongside their definitions as used in this book according to Webster's Dictionary (Allee, 1983).

References are listed according to published research on Kenyan fish species including original authorities. The list is not comprehensive in terms of literature used to compile this book but represents an extensive index of recommended reading.

It is hoped that updates will continue to be made to the book in the future. Besides more-detailed meristics, it would be desirable to include images of other life stages (ova, larvae, juveniles), details regarding sexual dimorphism, additional data regarding ecology (habitats, diet, etc.), level of exploitation, catch methods, folklore, etc.

Readers are invited to **contact the authors/compilers** (see names and contact addresses at the front of the book) with new information or queries about freshwater fishes of Kenya that are not answered herein.

THE KENYAN ICHTHYOFAUNA

This pictorial guide contains 236 fish species belonging to 95 genera and 38 families, and gives a fairly accurate picture of the current status and knowledge of freshwater fish diversity in Kenya.

At least 24 non-native species have been introduced, either deliberately or via accidental escapes from fish farms: European eel *Anguilla anguilla* Linnaeus, 1758; *Chanos chanos* (Forsskål, 1775); grass carp *Ctenopharyngodon idella* Valenciennes in Cuvier & Valenciennes, 1844; goldfish *Carassius auratus* Linnaeus, 1758; common carp *Cyprinus carpio* Linnaeus, 1758; rainbow trout *Onchorynchus mykiss* (Walbaum, 1792); brown trout *Salmo trutta* Linnaeus, 1758; brook trout *Salvelinus fontinalis* (Mitchill, 1814); eastern mosquito fish *Gambusia holbrooki* Girard, 1859; guppy *Poecilia reticulata* Peters, 1859; *Lates niloticus* (Linnaeus, 1758); green sunfish *Lepomis cyanellus* Rafinesque, 1819; bluegill, *Lepomis macrochirus* Rafinesque, 1819; *Micropterus salmoides* (La Cepède, 1802); three-spotted tilapia *Oreochromis andersonii* (Castelnaud, 1861); blue-spotted tilapia *Oreochromis leucostictus* (Trewavas, 1933); *Oreochromis mossambicus* (Peters, 1852); *Oreochromis niloticus* (Linnaeus, 1758); *Sarotherodon galilaeus* (Linnaeus, 1758); redbreast tilapia *Tilapia rendalli* (Boulenger, 1897); *Tilapia zillii* (Gervais, 1848); *Haplochromis* spec. "Chala".

Four of these (*A. anguilla*, *S. fontinalis*, *L. cyanellus*, and *L. macrochirus*) most likely did not establish as self-sustaining populations after their introduction, and it is currently unclear if three others (*C. carassius*, *C. idella*, and *O. andersonii*) are successfully established. According to Welcomme (1988) and Lever (1996) *O. andersonii* was probably introduced into Kenya from Zambia in 1955 for aquaculture and started reproducing in ponds, but the program was abandoned and it has not been recorded in recent years. When the wild status of a species is unknown it is accompanied by a question-mark (?) in the guide.

The information contained in this guide cannot be considered final. The taxonomic status of several Kenyan fishes is currently unresolved and several species await formal description. New collections from Lakes Victoria and Turkana are likely to reveal new haplochromine species, and additional field surveys are required in various hydrographic systems.

For instance taxonomists now recognise that the genus *Barbus* (family Cyprinidae) is restricted to a small number of species inhabiting Europe, Southwest Asia and Northeast Africa. Most of the African species which are currently included in the genus do not appear to be closely related to the genus *Barbus* and are best considered incertae sedis, i.e., of uncertain taxonomic position. Unfortunately attempts have yet to be made at an adequate revision so the quoted term '*Barbus*' is thus used in this guide following Berrebi et al. (1996).

Taxonomy of the larger species is not completely resolved either despite a revision of the east and central African forms (Banister, 1973). Although the four-spotted barb '*Barbus*' *quadrimaculatus* Pfeffer, 1896 which occurs in the Pangani drainage in Tanzania may also enter Kenya, it is not included in the guide, whereas undescribed '*Barbus*' species from the Turkwell, Tsavo (two each), Athi, Sabaki, and Nzioa (each contributing a single species) are included.

The taxonomy of several labeos (Cyprinidae, genus *Labeo*) is highly confused plus at least three undescribed species occur in coastal stretches of Kenyan rivers. *Carassius auratus* (Linnaeus, 1758) is currently used for aquaculture purposes in the Sagana fish farm on the Upper Tana River. So far the species is not established in the wild but there is always the risk of it escaping from the farm like other species have done in the past. The taxonomy of Nile perches (Latidae, genus *Lates*)

from Lakes Victoria and Turkana needs revision. These species previously belonged to the fish family Centropomidae. Three unidentified mormyrids (Mormyridae, genus *Marcusenius*) currently known from scientific collections (one collected from the Omo River) are probably new to science and are in need of description. The taxonomy of the genus *Mormyrus* is largely unresolved and should be considered tentative.

Various suckermouth (Mochokidae, genus *Chiloglanis*) populations require taxonomic study to establish their precise status. Some *Synodontis* species (e.g. the squeaker group "*S. zanzibaricus*") also require detailed investigation. One unidentified suckermouth collected from the Kerio River, Lake Turkana drainage and previously considered new to science is currently referred to as *Chiloglanis* spec. aff. *niloticus*. An unnamed squeaker from the lower Tana is considered to represent a new species.

Two lampeyes (family Aplocheilichthyidae, genus *Aplocheilichthys*) from lakes Baringo and Lake Naivasha, respectively are known as *A. spec. "Baringo"* and *A. spec. "Naivasha"*. The Lake Baringo population is threatened by competition with the introduced guppy, *Poecilia reticulata*, while the species from Lake Naivasha may become extinct before a scientific description has been published. The taxonomic status of a peculiar species of *Nothobranchius* (family Aplocheilichthyidae) from Lake Victoria is also uncertain.

Riverine haplochromine species from the Migori and Sio drainages in the Lake Victoria system are known from scientific collections but remain in need of formal description. The same is true for an unidentified *Haplochromis* species from Lake Amboseli, another from Lake Chala, and three from Lake Turkana. The generic name *Haplochromis* is used for the species of this group pending future studies. The taxonomic status of the haplochromines from Lakes Chala and Jipe (Pangani drainage) is still under investigation. Descriptions are also required for three near-shore 'chromis'; a *Paralabidochromis* species, a *Prognathochromis* species and a *Ptyochromis* species from Lake Victoria.

Andersonia leptura Boulenger, 1900 was reported from the delta of the Omo River system, the only permanent tributary of Lake Turkana on Ethiopian territory (see Hopson & Hopson, 1982, Howes, 1984), but seems to be absent from the lake itself and is not included here. Ngai, *Hyperopisus bebe* (La Cepède, 1803), eastern bottlenose *Mormyrus longirostris* Peters, 1852, and *Polypterus senegalus* Cuvier, 1829 have been collected from the Omo delta and are included since their occurrence in Kenyan parts of the Lake Turkana basin seems likely.

Some species with uncertain taxonomic status are referred to using the abbreviation "aff." (*affinis*; confer, compare), e.g., Kenyan lungfish *Protopterus* aff. *amphibius* (Peters, 1844), (Migori?) sand catlet *Leptoglanis* aff. *rotundiceps* (Hilgendorf, 1905). This suggests a close affinity or possible conspecific status with the nominal species reported.

A number of occurrence records relating to Kenyan fishes are erroneous and consequently omitted. For example, a record of *Polypterus ansorgii* Boulenger, 1910 in FishBase 2000 (FishBase, 2000) is based on a misinterpretation of a locality in West Africa. Records in FishBase 2000 of *Chelaethiops congicus* (Nichols & Griscom, 1917) and *Alestopetersius leopoldianus* (Boulenger, 1899), based on information retrieved from CLOFFA, are incorrect. The former species was not reported from Kenya, while the latter is a misidentification of a fish from Lake Victoria by Paugy (1984). A record of *Anguilla bengalensis* (Gray, 1831) from FishBase 2000 is also unsubstantiated.

Records of *Nothobranchius taeniopygus* Hilgendorf, 1891 from western Kenya by Wourms (1965), and southwestern Kenya by Huber (1996) are based on misidentifications. Records of

Marcusenius livingstonii (Boulenger, 1899), '*Barbus*' *innocens* Pfeffer, 1896, '*B.*' *laticeps* Pfeffer, 1893, '*B.*' *quadripunctatus* Pfeffer, 1896, *Brycinus imberi* (Peters, 1852), *Synodontis maculipinna* Norman, 1922, *Aplocheilichthys kongoranensis* (Ahl, 1924), *Nothobranchius foerschi* Wildekamp & Berkenkamp, 1979, *N. janpapi* Wildekamp, 1977, *N. lourensi* Wildekamp, 1977, and *N. steinforti* Wildekamp, 1977 from the Galana (Lower Athi) by Skelton (1994) do not appear to be legitimate, in fact the sources quoted do not mention their presence in the Galana.

The inventory of species reported to inhabit Lake Natron and the Sombole Swamps by Seegers and Tichy (1999), including Shombole tilapia *Oreochromis* spec. aff. *alcalicus* (Hilgendorf, 1905), *O. ndalalani* and *O. latilabris* is debatable. A record of an introduction of the sailfin molly *Poecilia latipinna* (LeSueur, 1821) and occurrences of *Carcharhinus leucas* (Muller & Henle, 1839), *Pristis microdon* (Latham, 1794), *Hippichthys cyanospilus* (Bleeker, 1854), *Kuhlia rupestris* (Lacepède, 1802), *Monodactylus argenteus* (Linnaeus, 1758), *Scatophagus tetracanthus* (Lacepède, 1802), *Mugil cephalus* (Linnaeus, 1758), *Butis butis* (Hamilton, 1822) and *Acentrogobius simplex* (Sauvage, 1880) by Okeyo (1998) are in need of confirmation.

PHOTOGRAPHIC GUIDE TO FISH FAMILIES AND SPECIES

This guide will aid the reader to identify freshwater fishes of Kenya.

It comprises:

All indigenous freshwater species, some of which occur throughout the entire Great Lakes region.

19 marine and estuarine fish commonly entering freshwater habitats of Kenya.

Species accounts, most with a colour live photo, including known distribution and brief description of major physical characters.

Other annotations include scientific, common and local fish names, as well as some remarks on the systematic status and validity of certain nominal taxa

CLASS: OSTEICHTHYES
ORDER: LEPIDOSIRENIFORMES
FAMILY PROTOPTERIDAE - African Lungfishes

Protopterus aethiopicus Heckel, 1851

Marbled Lungfish

“Mamba” (Swahili); “Kamongo” (DhoLuo, L. Victoira); “Monye” (DhoLuo, Lake Kanyaboli)



(Source: KMFRI)

DISTRIBUTION AND NOTES:

Throughout the Lake Victoria drainage, specifically the Nzoia, Yala (including Yala River flood plains, swamps, lakes Kanyaboli and Sare), Nyando (including floodplains: Kano-Ahero), Sondu-Miriwu, and Kuja-Migori rivers. Lacustrine records from Victoria itself include Mbita Point and Rusinga Island, and its range is expected to extend to the lower reaches of the Mara River, Tanzania. There currently exist only 3 records from Lake Turkana (KMFRI station, Kalokol, Turkana) where it seems to be very rare. Introduced into Lake Baringo in 1974 but records from elsewhere in Kenya are the result of misidentifications.

DESCRIPTION:

Maximum known length 200.0 cm TL; D origin closer to vent than head, \approx equidistant from occiput and vent; P1 and P2 slender and filamentous, P1 longer, 2x HL with well-developed fringe, no fringe on P2; 55-70 LL scales; scales thin, deeply embedded in skin, with distinct *ganoine* deposits; body elongate, sub-cylindrical; C pointed, confluent with D and A; snout broadly rounded; eye very small; vent dextral; live specimens dark slaty-grey or olive-brown to blackish dorsally, yellowish white-grey or pinkish ventrally, sensory canals brown or black, body and fins often with numerous dark spots or flecks.

CLASS: OSTEICHTHYES
ORDER: LEPIDOSIRENIFORMES
FAMILY PROTOPTERIDAE - African Lungfishes

Protopterus aff. *amphibius* (Peters, 1844)

Kenyan Lungfish

“Nyangoro” (Pokomo, Lower Tana); “Ngumbi” (Giriama, Lower Tana);
“Talakute” (Swahili); “Mamba” (Swahili)



(NMK FW 1364/1)

DISTRIBUTION AND NOTES:

Northern Ewaso Nyiro system, plus lower parts of coastal drainages including the Tana and Galana-Sabaki rivers. Reported from Lake Jilore (Sabaki system) which is now dessicated.

Taxonomic status of Kenyan populations is uncertain and they are most likely distinct from *P. amphibius sensu stricto*.

DESCRIPTION:

Maximum known length 45.0 cm TL; D origin close to head; D and A with soft rays only; P1 and P2 slender and tapered, P1 with broad membranes; 40-50 LL scales; scales soft, cycloid; body elongate, tapered; head serpentine, generally large; mouth large; nostril beneath upper lip; gill opening short, restricted to side of body anterior to P1 origin; small external gill present above opening; anus posterior to P2, offset on side of body; live specimens uniform blue or slaty-grey, with small or inconspicuous black spots or pseudo-reticulations, pale grey ventrally, head dark ventrally, with white spots or vermiculations.

CLASS: OSTEICHTHYES
ORDER: LEPIDOSIRENIFORMES
FAMILY PROTOPTERIDAE - African Lungfishes

Protopterus annectens (Owen, 1839)

Tana Lungfish

“Mamba” (Swahili and Pokomo, Lower Tana); “Tonzi” (Giriama, Lower Tana)



(Photo credit: Frank Teigler)

DISTRIBUTION AND NOTES:

Lower Tana and Sabaki Rivers, coastal drainages.

Also reported as *P. annectens annectens*, but the taxonomic status of Kenyan populations is unclear.

DESCRIPTION:

Maximum known length 100.0 cm TL; D origin closer to occiput than vent; D and A with soft rays only; P1 and P2 slender and tapered, P1 longer than P2 and with a well-developed fringe, P2 with a weakly distinct or rudimentary fringe; 40-50 LL scales; scales soft, cycloid; body elongate, tapered; head robust, serpentine; snout broadly rounded; nostril beneath upper lip; mouth large; eye small; gill opening short, restricted to side of body anterior to P1 origin; anus posterior to P2, offset on side of body; live specimens greyish-brown with dark brown spots and blotches, or olive dorsally, lighter ventrally, with or without round blackish spots; sensory canals brown or black, forming wavy lines over the head.

CLASS: OSTEICHTHYES
ORDER: POLYPTERIFORMES
FAMILY POLYPTERIDAE - Bichirs

Polypterus bichir Geoffroy Saint-Hilaire, 1802

Nile Bichir
“Nagiri” (Turkana, Lake Turkana)



(Photo credit: Edwin Tan)

DISTRIBUTION AND NOTES:

Lake Turkana basin.

Also reported as *P. bichir bichir*.

DESCRIPTION:

Maximum known length 72.0 cm TL; plated D XIV-XVIII, overlapping when fin adpressed; A 11-15; 63-70 LL scales; head strongly flattened with large carapace bones; eye supero-lateral; lower jaw projecting slightly beyond upper; P1 and P2 lobed; P1 reaching beyond vertical through anterior D plate; live specimens greyish or olive dorsally, yellowish ventrally; juvenile with 10-13 cross-bars on the dorsum and 2-3 darker flank stripes, indistinct or absent in adult; a few scattered black spots sometimes present; paired fins with variably distinct transverse streaks or series of spots, other fins plain.

CLASS: OSTEICHTHYES
ORDER: POLYPTERIFORMES
FAMILY POLYPTERIDAE - Bichirs

Polypterus senegalus Cuvier, 1829

Senegal Bichir
“Nagiri”, “Nagir” (Turkana, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Lake Turkana basin; in 2010 specimens were collected from the Omo River delta.

Also reported as *P. senegalus senegalus*.

DESCRIPTION:

Maximum known length 50.5 cm TL; plated D VIII-XI, widely separated when fin adpressed; A 14-17; P1 not reaching vertical through anterior D plate; 53-61 LL scales; body cylindrical or slightly compressed; eyes orientated laterally; snout projecting slightly beyond lower jaw; live juvenile conspicuously marked with dark longitudinal bands, but these markings disappear at an early age; live adult uniformly grey, olive, or green dorsally, white or yellow ventrally; fins immaculate.

CLASS: OSTEICHTHYES
ORDER: OSTEOGLOSSIFORMES
FAMILY OSTEOGLOSSIDAE - Bonytongues

Heterotis niloticus (Cuvier, 1829)

African Bonytongue
“Dese”, “Remej” (Turkana, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Lake Turkana.

DESCRIPTION:

Maximum known length 105 cm. TL. D 32-37, origin slightly posterior to A origin; A 34-39; P1 obtusely pointed; C short, rounded; CP very short; 32-38 LL scales; lateral line straight, extending from above opercle to centre of CP; head short, thick, convex above; snout short, rounded; eye lateral; lips thick; mouth straight and transverse anteriorly, sides curved obliquely, squarish when fully open, extending to or slightly beyond anterior margin of eye; opercle bordered by large dermal flap; live specimens brown, grey, or olive; in juvenile D and A marked with indistinct longitudinal streaks, a round dark spot on each scale in posterior portion of body.

CLASS: OSTEICHTHYES
ORDER: OSTEOGLOSSIFORMES
FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Gnathonemus longibarbis (Hilgendorf, 1888)

Longnose Stonebasher
“Ondhuri”, “Obobo” (DhoLuo, Lake Victoria); “Bobo” (Lake Victoria)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Type locality is Lake Victoria, where it is especially abundant in northeastern parts of the basin (e.g. lower Sio River). Lacustrine records from Mbita Point, Rusinga Island.

DESCRIPTION:

Maximum known length 36.0 cm TL; D iii, 19-22, origin of anterior branched ray slightly posterior to A origin; A i-iii, 27-28; P2 origin \approx opposite posterior fifth of adpressed P1; C strongly forked, lobes pointed, almost entirely scaled, distal margin naked; 45-64 LL scales; dorsal profile of head gently curved; mouth cleft very short, level with centre of eye; mouth terminal; chin pronounced into a long, fleshy, cylindrical, appendage, \geq snout length; live specimens dark or blackish brown, obscure olivaceous tints dorsally, paler ventrally; iris grey; fins duller than body.

CLASS: OSTEICHTHYES
 ORDER: OSTEOGLOSSIFORMES
 FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Hippopotamyrus grahami (Norman, 1928)

Graham's Stonebasher
 "Kamtontoru" (Lunyoro), "Kuumpi" (Lake Victoria)



(Photo credit: Luc de Vos/NMK)



(Photo credit: Denis Tweddle/SAIAB 57024)

DISTRIBUTION AND NOTES:

Endemic to the Lake Victoria basin, especially southeastern and northeastern portions (e.g. Sondu-Miriu and lower Sio rivers), but occurs in most tributaries and throughout the lake itself.

Also reported as *Marcusenius grahami* Norman 1928, as per the original description.

DESCRIPTION:

Maximum known length 25.0 cm TL; D 29-31, base < PDL; A 23-36, origin below D rays 14-16, slightly closer to C base than P2 origin; P1 pointed, extending beyond P2 origin; C lobes pointed; 60-69 LL scales; scales small; HL ≤ HD; snout rounded, projecting beyond mouth; mouth below nostril, angle below anterior margin of eye; chin slightly prominent; nostril level with ventral margin of eye, closer to latter than snout tip; live specimens dark golden-brown dorsally, light silvery-white to yellowish ventrally, sometimes with irregular darker markings.

CLASS: OSTEICHTHYES
ORDER: OSTEOGLOSSIFORMES
FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Hyperopisus bebe (La Cepède, 1803)

Ngai



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Lake Turkana system. The specimen pictured is from the Omo River delta, and local fishers have also confirmed its presence in the northern part of the lake.

The name of the author of this species (La Cepède), is spelled in various ways in earlier literature (e.g. Lacépède, Lacépède or Lacepede). However, the title page of Volume 5 of his own work of 1803 (La Cepède, 1803), gives the spelling La Cepède, which is used here.

DESCRIPTION:

Maximum known length 55.0 cm TL. D ii-iii, 10-13; A 54-68, origin \approx equidistant from snout tip and C base; P1 obtusely pointed; C scaled, lobes obtusely pointed; 90-120 LL scales; HL > HD, dorsal profile strongly-curved; OD small to moderate; mouth small, terminal; live specimens plumbeous, sometimes iridescent grey-olive or purple dorsally, silvery ventrally.

CLASS: OSTEICHTHYES
ORDER: OSTEOGLOSSIFORMES
FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Marcusenius aff. *macrolepidotus* (Peters, 1852)

Tana-bulldog
"Mbelewele" (Pokomo, Lower Tana)



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Middle Sabaki drainage, e.g., at Garsen, and lower Tana basin.

The taxonomic status of Kenyan populations is uncertain.

DESCRIPTION:

Maximum known length 20 cm TL. D 19-25, origin posterior to A origin; A kinked in male; A 25-32; 50-70 LL scales; body moderately elongate with median fins in posterior portion; lower jaw with prominent mental lobe; live specimens with variable colour pattern, from light golden-brown to dark olive or grey with bronze flecking and dark brown blotches.

CLASS: OSTEICHTHYES
 ORDER: OSTEOGLOSSIFORMES
 FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Marcusenius victoriae (Worthington, 1929)

Victoria Stonebasher



(Photo Source: KMFRI)



(Photo credit: Denis Tweddle/SAIAB 57053)

DISTRIBUTION AND NOTES:

Type locality is Lake Victoria, with specific records from the northeast, e.g., lower Sio and Nyando rivers near Ahero. Lacustrine records exist from the entire Winam Gulf, Mbita Point, Rusinga Island and Muhuru Bay. A single occurrence from the River Omo Delta in the Lake Turkana system was reported as *Gnathonemus victoriae* Worthington 1929.

Gnathonemus rheni Fowler 1936, described from the Ugandan portion of Lake Victoria, is most likely a junior synonym of *Marcusenius victoriae* (see Greenwood, 1966).

DESCRIPTION:

Maximum known length 26.0 cm TL. D 22-25, origin above A rays 2-8; A 27-31, closer to C base than P2 origin; P1 pointed, extending to or slightly beyond P2 origin; C lobes pointed; CP slender; 60-70 LL scales; scales large; head tapered; mouth small; HL almost equal to HD, head with straight to slightly concave dorsal profile; chin with a globular dermal appendage apparent as a fleshy swelling; live specimens golden-brown dorsally, yellow or golden ventrally.

CLASS: OSTEICHTHYES
ORDER: OSTEOGLOSSIFORMES
FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Marcusenius spec. "Turkwell"

Turkana Stonebasher



(NMK FW 5026/1-2)

DISTRIBUTION AND NOTES:

Turkwell River basin in the Lake Turkana drainage, including the Malimalite and Wei Wei rivers, e.g., at Kainuk.

Appears to be a new taxon in need of formal description.

DESCRIPTION:

D origin posterior to P2 origin.

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: OSTEOGLOSSIFORMES
FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Marcusenius spec. "Omo"

Omo Delta Stonebasher



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

River Omo Delta, Lake Turkana drainage.

Unidentified taxon which may represent *M. macrolepidotus* (Peters 1852), *M. stanleyanus* (Boulenger 1897), or a new species.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: OSTEOGLOSSIFORMES
FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Marcusenius spec. "Lake Victoria"



(Photo credit: Denis Tweddle/SAIAB 57025)

DISTRIBUTION AND NOTES:

Lake Victoria basin, e.g., at Sondu Miriu.

Unidentified taxon and a probable new species.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: OSTEOGLOSSIFORMES
FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Mormyrops anguilloides (Linnaeus, 1758)

Cornish Jack



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Known from the Omo River Delta in the Lake Turkana system, Northern Ewaso Nyiro watershed, and eastward-flowing rivers including the Tana and Athi/Sabaki.

The record of *M. anguilloides* from the Athi River basin is discussed by Okeyo (1998), but is not mentioned in some other works (Seegers et al. 2003). Taxonomic position of the Kenyan population is considered uncertain since it may be conspecific with *M. citernii* Vinciguerra 1913, which was described from the Juba system in Somalia.

Previously reported as *Mormyrops deliciosus* (Leach 1818), a junior synonym of *M. anguilloides* (see Bigorne 1987).

DESCRIPTION:

Maximum known length 150.0 cm TL. D 21-30, origin 2x further from snout than C base, shorter than A; A 38-51, origin markedly anterior to D; median fins in posterior portion of body; C relatively small, forked, lobes rounded; 85-100 LL scales; scales small; body and head elongate; head smooth, upper profile slightly concave, depressed anteriorly; HL fits $\approx 4x$ in TL; mouth terminal; snout rounded, projecting beyond mouth; eye small; gill opening restricted to side of body, inclined at an angle; live specimens grey dorsally, light silver-white ventrally, often with a bronze or yellow sheen; juvenile darker greyish-blue or brown; preserved specimens olive or yellowish-brown dorsally, whitish ventrally.

CLASS: OSTEICHTHYES
ORDER: OSTEOGLOSSIFORMES
FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Mormyrus bernhardi Pellegrin, 1926

Bernhard's Elephant Nose



NMK FW 836/1-2)

DISTRIBUTION AND NOTES:

Endemic to the Athi River drainage.

Taxonomic validity doubtful, possibly a junior synonym of *Mormyrus hildebrandti* Peters 1882, *M. kannume* Forsskål 1775, or *M. tenuirostris* Peters 1882.

DESCRIPTION:

Maximum known length 30 cm TL. D iii, 62, almost 4 times longer than A; A iii, 16, origin equidistant from P1 and C, anterior to P2; P1 14, almost extending to P2 origin; P2 6; C scaled, lobes prominent; CPL 2x CPD; 95 LL scales; scales small; dorsal profile of head slightly curved; snout length slightly greater than depth, with a globular mental extension; mouth opening extending to below eye border; eye large, oval-shaped; live specimens yellowish-brown with golden sheen dorsally, brownish olive ventrally; fins greenish.

CLASS: OSTEICHTHYES
ORDER: OSTEOGLOSSIFORMES
FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Mormyrus hildebrandti Peters, 1882

Hildebrandt's Elephant Nose



(NMK FW 3437)

DISTRIBUTION AND NOTES:

Endemic to the Athi River basin, including the Tsavo and Ol-lapni drainages, upper reaches near Ziwani, and Mzima springs.

Sometimes misspelled *Mormyrus hildebrandi*. The tentative synonymy of *M. hildebrandti* with *M. kannume* Forsskål 1775 by Boulenger (1898) is not followed here.

DESCRIPTION:

Maximum known length 20.0 cm SL; D 68, origin posterior to P1 origin; A 18, length shorter than its distance from posterior D base; scales small; snout elongate, orientated ventrally; mouth small, teeth bicuspid; preserved specimens dark silvery-brown dorsally, yellowish to pale golden-brown ventrally; eye membrane smoky grey.

CLASS: OSTEICHTHYES

ORDER: OSTEOGLOSSIFORMES

FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Mormyrus kannume Forsskål, 1775

Elephant Nose

“Mkale”, “Lomakale” (Turkana, Lake Turkana); “Shubule” (Samburu, North Ewaso Nyiro); “Suma”, “Aduoyo” (DhoLuo, Lake Victoria); “Kasulubana” (Gusii, Luhya)



(Photo Source: KMFRI)



(Photo credit: Denis Tweddle/SAIAB 65060)

DISTRIBUTION AND NOTES:

Lower reaches of most major rivers in the region, but most abundant in the Lake Victoria drainage. There are lacustrine records from Winam Gulf, Kasungu and Rusinga Islands, Mbita Point (in front of the ICIPE research station), and Muhuru Bay. Also known from the Lake Turkana basin, including the Turkwell River and Omo delta, plus Lake Kamnarok (Kerio system) and the Northern Ewaso Nyiro watershed.

Identity of the latter population remains unconfirmed, while records from the Tana and Athi basins are dubious.

DESCRIPTION:

Maximum known length 100.0 cm TL; D 55-75, origin above or slightly anterior to P2 origin; A 17-22, short, origin equidistant from P1 origin and C base; P1 slightly pointed; C lobes slightly pointed; 80-116 LL scales; dorsal profile of head straight to strongly curved; snout pronounced, stout, thickness and angle in relation to head variable, about as long as post-ocular portion of head in adult; mouth very small, terminal, lips thick; eye small; live specimens brownish, dull bronze, or olive dorsally, pale to white ventrally.

CLASS: OSTEICHTHYES

ORDER: OSTEOGLOSSIFORMES

FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Mormyrus longirostris Peters, 1852

Eastern Bottlenose

“Mkale”, “Lomakale” (Turkana, Lake Turkana); “Shubule” (Samburu, North Ewaso Nyiro); “Suma”, “Aduoyo” (DhoLuo, Lake Victoria); “Kasulubana” (Gusii, Luhya)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Omo River delta, Lake Turkana system.

DESCRIPTION:

Maximum known length 75.0 cm TL. D 65-75, almost 4x longer than A; A 17-19, origin below centre of D; P1 almost extending to P2 origin; C lobes prominent, similarly-sized; 85-100 LL scales; scales small, fine; predorsal region and head strongly decurved; snout long; mouth terminal; eye concealed beneath translucent membrane; female smaller and deeper-bodied than male; live specimens olive-grey or brown dorsally, paler ventrally.

CLASS: OSTEICHTHYES
ORDER: OSTEOGLOSSIFORMES
FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Mormyrus tenuirostris Peters, 1882

Athi Elephant Nose
“Mwana hamari” (Pokomo, Lower Tana); “Tangu” (Athi River)



(NMK FW/625/1)

DISTRIBUTION AND NOTES:

Known from the Athi and Tana River systems, e.g., at Michilelo Research Camp, Baomo Village.

The status of this taxon is doubtful, and it may be conspecific with *M. bernhardi* Pellegrin 1926 (see Whitehead and Greenwood 1959).

DESCRIPTION:

Maximum known length 33.2 cm SL. D 60-61, origin posterior to P2 origin; A 19-20; P1 14; P2 6; 92-97 LL scales; body with small scales, head naked; snout pronounced, attenuate, orientated ventrally; eye in centre of head; preserved specimens dark brown dorsally, reflective golden-brown ventrally; dorsal surface of head grey-black; operculum silvery; fins yellowish-grey.

CLASS: OSTEICHTHYES
 ORDER: OSTEOGLOSSIFORMES
 FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Petrocephalus catostoma (Günther, 1866)

Churchill
 "Abobo", "Obobo" (DhoLuo, Lake Victoria)



(Photo Source: KMRD)

DISTRIBUTION AND NOTES:

Lake Victoria drainage, especially northeastern parts of the lake including the lower Sio River and River Nzoia (e.g. near Lwambwa), although lacustrine records exist as well (e.g. near Kisumu).

Has been referred to as *Petrocephalus degeni* Boulenger 1906, while Seegers *et al.* (2003) list it as a sub-species, *Petrocephalus catostoma catostoma* (Günther 1866).

DESCRIPTION:

Maximum known length 15.0 cm SL; D ii-iii, 16-21, origin slightly closer to C base than occiput, above or slightly posterior to rays 4-5; A iii-iv, 22-27, equidistant from P2 origin and C base; P1 pointed or sharply rounded, 2x as long as P2 and C, extending beyond P2 origin; distal margin of A slightly concave in female, deeply concave in male; C lobes pointed; 34-41 LL scales; HL equal to HD, dorsal profile convex; snout very short, rounded, projecting beyond mouth; mouth opening below eye; OD moderate to large; nostril close to lower eye margin; live specimens dusky-silver dorsally, whitish ventrally; fins colourless; preserved specimens brownish dorsolaterally, grey ventrolaterally; orange pigmentation on side of head, snout and above eye, tending to fade in preserved specimens.

CLASS: OSTEICHTHYES
ORDER: OSTEOGLOSSIFORMES
FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Petrocephalus catostoma tanensis Whitehead & Greenwood, 1959

Tana-churchill
"Kiawara" (Pokomo, Lower Tana)



(Photo credit: Luc de Vos/NMK)

DISTRIBUTION AND NOTES:

Endemic to the middle and lower Tana River, e.g., the Garsen area.

Characters mostly agree with those of *P. c. catostoma* (Günther 1866), but that subspecies possesses more dorsal rays.

DESCRIPTION:

Maximum known length 15.2 cm TL; D iii, 22-25, origin \approx above A origin; A ii-iii, 22-27, origin equidistant from P2 origin and C base; P1 pointed or sharply rounded, extending to P2 origin; distal margin of A slightly concave in female, deeply concave in male; 35 LL scales; snout short, rounded, projecting anterior to mouth; mouth opening below eye; nostril close to lower eye margin; live specimens dusky-silver dorsally, whitish ventrally; fins colourless; preserved specimens brownish above dorsolaterally, grey ventrolaterally; orange pigmentation on side of head, snout and above eye, tending to fade in preserved specimens.

CLASS: OSTEICHTHYES
 ORDER: OSTEOGLOSSIFORMES
 FAMILY MORMYRIDAE - Snoutfishes, Elephant Nose fishes

Pollimyrus nigricans (Boulenger, 1906)

Dark stonebasher
 "Abobo" (DhoLuo, Lake Victoria)



(Photo Source: KMFRI)



(Photo credit: Denis Tweddle/SAIAB 57016)

DISTRIBUTION AND NOTES:

Lake Victoria basin, especially the northeastern (e.g. lower Sio River) and southeastern portions. Lacustrine records exist from Lake Kanyaboli and Kendu Bay.

This species has also been reported as *Marcusenius nigricans* Boulenger 1906.

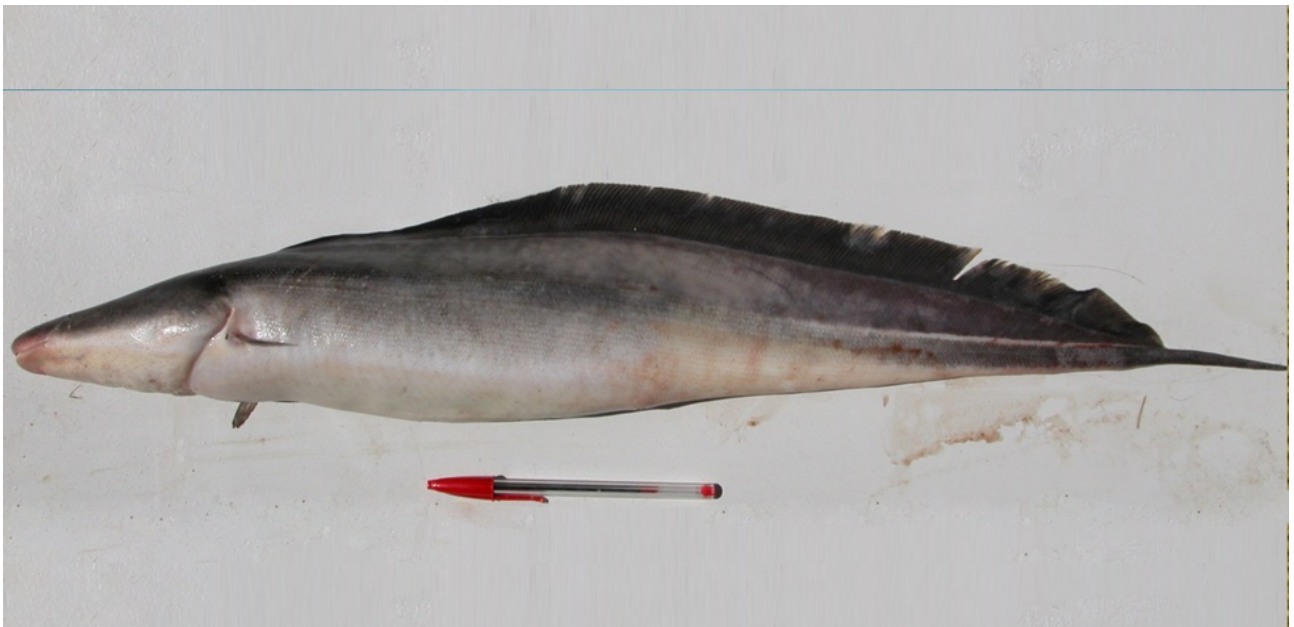
DESCRIPTION:

Maximum known length 10.0 cm TL. D 15-18, origin above A rays 5-6; A 21-25; P1 pointed, subfalcate; C forked, lobes rounded, basal portion covered with small scales; 46-53 LL scales; snout rounded, projecting slightly beyond mouth; mouth opening below nostril; anterior nostril midway between eye and snout tip; live specimens uniformly dark or blackish brown, paler ventrally.

CLASS: OSTEICHTHYES
ORDER: OSTEOGLOSSIFORMES
FAMILY GYMNARCHIDAE - Gymnarchids

Gymnarchus niloticus Cuvier, 1829

Aba
“Lowarayame” (Turkana, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Northern Lake Turkana basin.

DESCRIPTION:

Maximum known length 151.0 cm TL. D 183-230; P1 rounded; C pointed, extended; HL > HD; snout rounded, scarcely projecting beyond lower jaw; eye very small; a strong fold of skin connecting gill opening across isthmus; scales very small, largest located midlaterally; live specimens olive or brown dorsally, whitish ventrally, tip of C blackish.

CLASS: OSTEICHTHYES
ORDER: ELOPIFORMES
FAMILY MEGALOPIDAE - Tarpons

Megalops cyprinoides (Broussonet, 1782)

Ox-eye tarpon, Indo-Pacific tarpon
“Tazanda” (Pokomo, Lower Tana); “Pawale” (Swahili, Lower Tana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Littoral, entering lagoons and estuaries, but also ascending rivers. In Kenya it is known from the Lower Tana and Sabaki rivers, plus lower courses of small coastal drainages.

DESCRIPTION:

Maximum known length 100.0 cm TL. D 17-21, origin above P2 origin, \approx equidistant from snout and C base, upper margin concave, tip of posterior ray extended into a long filament in adult male; C deeply forked, lobes more expanded in immature individuals; A 24-31; 36-42 LL scales; prominent elongate scales at base of paired fins; body streamlined, compressed; head without scales; mouth large, posterior extremity below eye; lower jaw projecting beyond upper; upper jaw prominent, covering sides of mouth when closed; maxillary extending to or beyond posterior border of eye; eye large with narrow adipose lids; live adult silvery to bluish green dorsally, juvenile paler; dorsal surface of head dark olive; abdomen silvery with bluish sheen; scale margins, lateral line and sides of head brilliant silver; centre of jaws black; D and C greyish with minute black dots and blackish margins; extended D ray in male blackish; P1, P2, and A diaphanous, with some black dots; posterior A ray dark.

CLASS: OSTEICHTHYES
ORDER: ANGUILLIFORMES
FAMILY ANGUILLIDAE -Freshwater Eels

?Anguilla anguilla (Linnaeus, 1758)

European eel



(Photo credit: V. Tachos & Dimitra Bobori; photo taken from Fishbase (Froese & Pauly, 2011) with permission from D. Bobori)

DISTRIBUTION AND NOTES:

Introduced in the Lake Victoria catchment via affluents of the lake, having escaped some years ago from fish farms in Uganda. Not reproducing therefore should not survive long-term.

In its native habitats, small larvae hatch from bathypelagic eggs and subsequently become flattened, with transparent leptocephali carried towards continental shelves by ocean currents. Metamorphosis, with development of pigmentation and the typical body shape, begins here, and juveniles later enter coastal waters as 'glass eels', where they grow into pigmented 'elvers'. Elvers swim actively at night, ascending rivers (see Coupley 1958).

DESCRIPTION:

Maximum known length 150.0 cm TL; fins reduced; D origin anterior to A origin, posterior to P1; tip of C enclosed by continuous D and A; skin smooth; scales minute, embedded in skin; body long, thin, serpentine; jaws subequal, lower slightly longer; angle of jaw under eye; gill opening small, lateral, orientated vertically; live specimens brownish dorsally, yellowish ventrally during freshwater phase; migrating adults blackish dorsally, silverish ventrally, with snout noticeably pointed.

CLASS: OSTEICHTHYES
ORDER: ANGUILLIFORMES
FAMILY ANGUILLIDAE -Freshwater Eels

Anguilla bengalensis Peters, 1852

African mottled eel, spotted eel
“Mukunga”, “Mkunga”, “Fiyoka” (Pokomo, Lower Tana); “Panga”, “Mkongge” (Swahili)



(AM 14323)

DISTRIBUTION AND NOTES:

Eastward flowing rivers, including the Athi, Tana, Ragati and Gura drainages. An eel population inhabiting Mzima Springs (Tsavo West National Park, Tsavo River system) probably belongs to this species.

A migratory, diadromous species breeding in the ocean. Previously reported under the names *Anguilla bengalensis labiata* (Peters 1852) and *A. nebulosa labiata* (Peters 1852).

DESCRIPTION:

Maximum known length 145.0 cm TL. D origin between P1 origin and vent; mouth extending to or beyond posterior border of eye; jaw articulation posterior to eye, lower jaw projecting beyond upper; tail longer than body; live specimens olive dorsally, often with blackish, dark brown, and yellowish-brown mottling.

CLASS: OSTEICHTHYES
 ORDER: ANGUILLIFORMES
 FAMILY ANGUILLIDAE -Freshwater Eels

Anguilla bicolor McClelland, 1845

Shortfin eel
 “Mukunga”, “Mkunga” (Pokomo, Lower Tana)



(Photos source: Denis Tweddle/SAIAB)

DISTRIBUTION AND NOTES:

Eastward flowing rivers, e.g., the Tana basin.

A migratory, diadromous species, breeding in the ocean. *Anguilla unicolor* (Artedi 1738), reported by Copley (1941) from the Athi River is most likely a lapsus for this species or can be considered a nomen nudum.

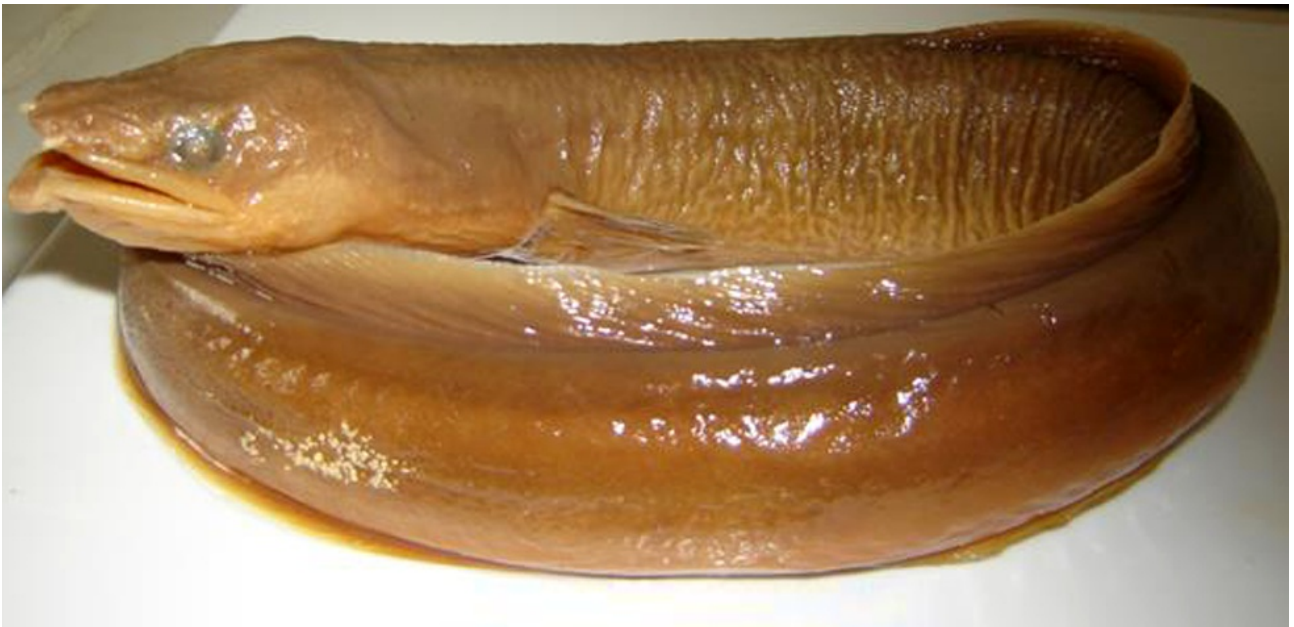
DESCRIPTION:

Maximum known length 80.0 cm TL; D 245, origin above vent, closer to A origin than gill opening, > half TL; A 221; jaws depressed, upper shorter and less broad than lower; eye anterior to jaw articulation; live specimens dark olive to bluish dorsally, whitish or generally paler ventrally, side of head light brown; mature adult bronzy-silver.

CLASS: OSTEICHTHYES
ORDER: ANGUILLIFORMES
FAMILY ANGUILLIDAE -Freshwater Eels

Anguilla mossambica Peters, 1852

Longfin eel, African longfin eel
“Mukungu”, “Mkunga” (Pokomo, Lower Tana)



(AM/AMPf 1300)

DISTRIBUTION AND NOTES:

Eastward flowing rivers such as the Athi, Tana and Ragati systems (Copley 1941, 1958).

A migratory, diadromous species, breeding in the ocean.

DESCRIPTION:

Maximum known length 120.0 cm TL; D origin anterior to A origin, \approx midway between P1 origin and vent; D and A confluent with C; scales minute, embedded in thick, smooth skin; body and head elongate; mouth opening large, extending beyond posterior border of eye; lips thick; lower jaw projecting strongly; gill opening small, restricted to side of head anterior to P1; live specimens olive-brown, grey or dark green dorsally, yellowish to whitish or generally paler ventrally; sexually mature individuals dark bronze dorsally, pale yellow to silverish ventrally prior to entering marine phase.

CLASS: OSTEICHTHYES
ORDER: CLUPEIFORMES
FAMILY PRISTIGASTERIDAE - Pellonas

Pellona ditchela Valenciennes in Cuvier & Valenciennes, 1847

Indian pellona, Jlisha
“Simi koko”, “Simu” (Swahili, Lower Tana and Sabaki), “Dagaa-papa” (Swahili, east coast)



(Photo credit: Thomas Gloerfelt-Tarp)

DISTRIBUTION AND NOTES:

Marine species occasionally entering the lower reaches of eastward flowing rivers such as the Tana and Sabaki.

DESCRIPTION:

Maximum known length 16.0 cm SL; D iii, 12-16, origin closer to snout than C base, entirely anterior to A; A iii, 33-37; 40-44 LL scales; abdominal scutes well-developed, strongly-keeled, 23 anterior and 10 posterior to P2 base; eye very large; ventral profile of body more convex than dorsal; maxilla extending to below centre of orbit; anterior tooth-bearing bone rather than a ligament connecting premaxillaries to maxilla; live specimens silvery with burnished lateral band; upper margin of D dark.

CLASS: OSTEICHTHYES
ORDER: GONORYNCHIFORMES
FAMILY CHANIDAE - Milkfishes

Chanos chanos (Forsskål, 1775)

Milkfish
"Kuwazi", "Matiko" (Swahili, Lower Sabaki)



(Photo Source: Luc de Vos/NMK)

DISTRIBUTION AND NOTES:

Marine species entering estuaries, coastal streams, and rivers, e.g., lower reaches of the Sabaki River (Whitehead 1960).

DESCRIPTION:

Maximum known length 100.0 cm TL; D 13-17, equidistant from occiput and C base; anterior rays longer, upper margin concave, two rows of basal scales; A 8-11, very small, lower margin concave with two rows of basal scales; P1 pointed with elongate scaled basal appendage; P1 widely separated from P2; C deeply forked, lobes long, pointed; 75-90 LL scales; body scales small, with exception of a single large scale covering nape; body elongate; dorsal surface of head flat; interorbital region flat; upper jaw extends beyond lower; snout rounded; live specimens brilliant glossy blue or silvery-bluish dorsally, D darker, silverish ventrolaterally, snout light brown; D and C rays greyish with light brown dots and black margins, C and A margins dusky; P1, P2 and A white, with minute dark brown dots on anterior portion; elongated appendages bright silver.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' apleurogramma Boulenger, 1911

East African redfinned barb
 "Adel" (DhoLuo, Lake Victoria)



(Photo credit: Martin Grimm)

DISTRIBUTION AND NOTES:

Lake Victoria basin, especially lower reaches of the Nzoia river, including pools near Siaya Town, and Yala system. Lacustrine records exist from Lake Kanyaboli and the Winam Gulf area. Also known from the Amboseli swamps, Athi River system (including Mzima springs, Tsavo drainage), springs near Taveta (Lumi system), and the Pangani watershed.

The population from Taveta is aberrant and in need of investigation. *Barbus amboseli* Banister 1980 is a junior synonym of *B. apleurogramma* from the Tana River that was listed as questionable by Skelton (1994), and current knowledge suggests that it does not occur in the Tana system.

DESCRIPTION:

Maximum known length 5.5 cm TL. D iii, 7-8, equidistant from eye and C base, margin straight, posterior simple ray strong, ossified, serrated posteriorly, almost equal to HL; A iii, 5, not reaching C; P1 not reaching P2; P2 origin below or slightly anterior to D origin; 20-25 LL scales; no clear lateral line; snout rounded, often with scars of nuptial tubercles; mouth small, terminal, a single barb on each side, which may be absent in juvenile and well-developed in adult; lips feebly developed; live specimens dull silver or dark brownish dorsally, a well-defined dark marking immediately posterior to operculum covering three scales before forming a thin mid-lateral stripe, a dark spot on C base, scale margins dark brown, especially prominent on flank D blackish with a whitish band and reddish spot, A and P2 blackish distally, reddish medially, whitish basally, a small concentration of pigment cells around insertion of unbranched A rays, C tinged with orange, blackish distally.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'*Barbus*' *bynni* (Forsskål, 1775)

Nile barb

"Momwara", "Toto Chibule" (Turkana, Lake Turkana); "Kisinya" (Lunyoro);
"Arite" (El Molo, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Lake Turkana.

Also reported as *Barbus meneliki* Pellegrin 1905 and *B. bynni rudolfianus* Worthington 1932, both junior synonyms.

DESCRIPTION:

Maximum known length 82.0 cm TL. D iii, 7-8, equidistant from eye and C base, margin straight, posterior simple ray strong, ossified, serrated posteriorly; A iii, 5, not reaching C; P1 not reaching P2; P2 origin below or slightly anterior to anterior D rays; 20-25 LL scales; no clear lateral line; snout rounded, often with scars of nuptial tubercles; mouth small, terminal, a single barbel on each side may be absent in juvenile but well-developed in adult; lips weakly developed; live specimens dull silver or dark brownish dorsally, a dark spot covering three scales immediately posterior to operculum from which originates a thin, clearly-defined mid-lateral stripe; flank scales edged with dark brown; D blackish, with whitish cross-band; one dark spot surrounding unbranched D rays, another at termination of mid-lateral stripe at base of C; A and P2 blackish, a large white spot at base; small concentration of pigment cells around insertion of unbranched A rays; C tinged with orange, blackish distally.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' cercops Whitehead, 1960

Luambwa barb

"Adel", (DhoLou, Lake Victoria); "Obaduba", "Mandhe", "Tsimanze" (Luhya, Lake Victoria)



(Photo Source: KMFRI)



(Photo credit: Denis Tweddle/SAIAB 56998)

DISTRIBUTION AND NOTES:

Exclusively fluvial in the Lake Victoria drainage. Records also exist from rivers of western Kenya (e.g. Nzoia basin) and Nyanza Province (e.g. Sondu-Miriu and Awach systems). It is expected to occur in the Mara River.

Victorian populations have been misidentified as *Barbus trispilopleura* Boulenger 1902, and those from the Southern Ewaso Nyiro (e.g. at Narok) referred to as *Barbus* spec. aff. *cercops* (Seegers *et al.* 2003).

DESCRIPTION:

Maximum known length 7.4 cm TL. D iii, 7-8, posterior unbranched D ray thin, flexible; A ii-iii, 5-6; P1 tip not reaching P2 base; P2 origin below anterior branched D ray; CP slender; 29-32 LL scales; body slightly compressed; snout acute; mouth sub-inferior; 5 or 6 rows of small pores on cheek, radiating from lower margin of orbit; preserved specimens of all sizes dark dorsally, whitish ventrally, a thin dark mid-lateral stripe extending from C base to above P1 base, three small black spots distributed along this stripe of which most posterior located at C base; often a faint dark spot at A base in juveniles < 2.5 cm TL.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Labeobarbus altianalis (Boulenger, 1900)

Ripon Falls barb
"Kasinja", "Odhadho", "Fwani" (DhoLuo, Lake Victoria)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Type locality is Lake Victoria. Recorded from the following rivers: Sio, Nzoia, Yala, Nyando, Sondu, Kuja-Migori, and Mara. Lacustrine records from Lake Victoria include Ugandan and Tanzanian portions of the basin.

Also reported from Lake Victoria under the current synonyms *Labeo rüPELLII* Pfeffer 1896, *Barbus radcliffii* Boulenger 1903, *B. lobogenys* Boulenger 1906, *B. bayoni* Boulenger 1911, *B. pietschmanni* Lohberger 1922, *B. hollyi* Lohberger 1922 and *B. altianalis radcliffii* Boulenger 1903, with records of latter from the Tana (see Mann, 1966, 1968) based on misidentifications. '*Barbus*' *procathopus* Boulenger 1916 was originally described from "The Amala River, entering the east side of Lake Baringo", and Banister (1973) stated that it is a junior synonym of '*B.*' *intermedius australis*. However, the type locality of *B. procathopus* is erroneous, since the Amala River is not in the Baringo area but refers to a tributary of the Mara River in the Lake Victoria basin. *B. procathopus* is thus a junior synonym of *L. altianalis*.

DESCRIPTION:

Maximum known length 90.0 cm TL; D iii-iv, 8-9, origin equidistant from occiput and C base, margin weakly concave, posterior simple ray strong, ossified, unserrated; A iii, 5, almost reaching C; P1 acutely pointed, not reaching P2; P2 origin below anterior D rays; C deeply forked; 31-39 LL scales; sometimes a marked hump on nape; snout rounded or slightly acute, not projecting; mouth terminal, subinferior; lips vary in form from thin to fleshy, probably becoming thicker in older individuals; two pairs of barbels, posterior pair slightly shorter; live adult uniform brown or golden-green dorsally, yellow or yellowish-green ventrally, often with blackish markings; body scales darker at base; juveniles uniform dullish silver.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Labeobarbus intermedius australis Banister, 1973

Baringo barb
"Libili", "Fwani" (Baringo)



(Photo credit: Chrisphine Nyamweya)

DISTRIBUTION AND NOTES:

Known only from the Lake Baringo system, affluents of Lake Bogoria, and the Turkwell River.

Günther (1894) referred a number of specimens collected from the el Narua and Nyuki rivers by J.W. Gregory to *Barbus intermedius* (Rüppell 1835), a species described from Lake Tana, Ethiopia. Boulenger subsequently considered these same specimens to represent *B. gregorii* (Boulenger 1902), a species also described from Ethiopia. Later still, Barnister (1973) researched the travels of Gregory (1896) and discovered that the Guasso el Narua is located east of Lake Hannington (Bogoria), while Guasso Nyuki is a stream southeast of nearby Lake Baringo. Banister synonymised almost 50 nominal species and subspecies, including *B. gregorii*, under *B. intermedius* on the basis that they represent a single, highly variable species. Exceptionally, he assigned subspecific status to these Kenyan populations based on their longer fin spines and geographical isolation. Some current sources consider the taxon synonymous with *B. intermedius*, however, while it has also misidentified as *Barbus lineomaculatus* (Mann, 1971; Ssentongo, 1974, 1996).

DESCRIPTION:

Maximum known length 12.8 cm SL.

[Incomplete]

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Labeobarbus intermedius Rüppell, 1835

Ethiopia barb
 "Libili", "Fwani" (Baringo)



(Photo Source: DF-KMRD poster)

DISTRIBUTION AND NOTES:

Northern Kenya in the Ewaso Nyiro and Ewaso Narok systems, Lake Baringo drainage, affluents of Lake Bogoria, Lake Turkana basin (Turkwell, Kerio and Ngeny rivers), Marun River at Marun Pass, on the road from Eldoret to Lodwa, and the Suguta drainage.

Records of *Barbus gregorii* Boulenger 1902, a junior synonym of *L. intermedius*, from the Tana system (Boulenger, 1911) are based on misidentification (Mann, 1971; Banister, 1973), and the taxonomic status of Kenyan populations is unresolved.

Other currently synonymous names applied to Kenyan populations include *B. plagiostomus* Boulenger 1902 and *B. erlangeri* Boulenger 1903. Seegers *et al.* (2003) pointed out that former synonym *B. procatopus* Boulenger 1916, is a junior synonym of *L. altianalis*.

According to Skorepa (1992), the nominate subspecies *L. intermedius intermedius* Rüppell 1835 is distributed throughout Southern Ethiopia and Northern Kenya.

Banister (1973) gave the year of publication of *L. intermedius* as 1837, Lévêque & Daget (1984) considered 1836 to be correct, and Daget *et al.* (1986) amended this to 1835. Rüppell published the first description of the species in separates which are dated 1835 on the title page, therefore the latter is correct, as per articles 21.2 and 21.8 of the International Code of Zoological Nomenclature (1999).

DESCRIPTION:

Maximum known length 59 cm TL. D iv, 8-9, origin slightly closer to occiput than C base, margin concave, free edge emarginate, posterior simple ray robust, ossified, unserrated; A iii, 5, often reaching C; P1 not reaching P2; P2 origin below anterior D rays; 30-38 LL scales; snout rounded; mouth inferior; lips moderately-developed, lower with a median interruption; two pairs of barbels, anterior pair slightly shorter; live specimens olive or green dorsally, yellowish or pinkish ventrally; fins brown or olive, C sometimes green.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' jacksoni Günther, 1889

Jackson's barb
 "Adel" (DhoLuo, Lake Victoria, Kenya)



(Photo Source: KMFRI)



(Photo credit: Denis Tweddle/SAIAB 59208)

DISTRIBUTION AND NOTES:

Lower reaches of major rivers in the Lake Victoria basin, the lake itself, plus the Pangani and Athi river systems.

Also reported under the currently synonymous name *Barbus nummifer* Boulenger 1904.

DESCRIPTION:

Maximum known length 14 cm TL. D i-iii, 8, origin above P2 origin, closer to snout tip than C base, osseous ray strong and unserrated; P2 origin below, or slightly anterior to, anterior D rays; C forked; A 8; 36-39 LL scales; body compressed; head small; snout rounded; mouth small, terminal or slightly inferior; upper jaw projecting slightly; lips not thickened; two pairs of barbels, posterior pair longer; eye large; interorbital space convex; live specimens sandy dorsally, silverish ventrally; three well-defined black spots on side of body, first slightly anterior to D, second posterior to D, third on CP.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'*Barbus*' *kerstenii* Peters, 1868

Kersten's barb, Redspot barb
 "Adel" (DhoLuo, Lake Victoria)



(Photo Source: KMFRI)



(Photo credit: Denis Tweddle/SAIAB 56984)

DISTRIBUTION AND NOTES:

Confirmed in the Lake Victoria basin but also expected to occur in the Mara River. Lacustrine in lakes Kanyaboli and Victoria with additional records from the Pangani (e.g. "Rufu bei Korogwe"), Athi (e.g. Lumi, Taveta), Tana (e.g. Sagana at Maro, Ragati), Northern and Southern Ewaso Nyiro river systems.

This taxon is in need of urgent revision, since geographically-separated populations might represent distinct taxa. Previously reported as *Barbus nigrolinea* Pfeffer 1889, *B. salmo* Pfeffer 1896, *B. lumiensis* Boulenger 1903, *B. minchini* Boulenger 1906 and *B. akeleyi* Hubbs 1918, all of which are now considered synonymous.

The subspecific distinctions *B. kerstenii kerstenii* and *B. kerstenii luhondo* Pappenheim & Boulenger 1914 are not currently in use (see De Vos & Thys van den Audenaerde 1990).

DESCRIPTION:

Maximum known length 10 cm. TL. D iii, 7, origin equidistant from posterior margin of eye and C base, margin straight; posterior simple D ray strong, ossified, posterior edge strongly serrated; A iii, 5-6, not reaching C; P1 sometimes reaching P2; P1 large, longer in males; P2 almost entirely anterior to D; 23-27 LL scales; body relatively deep; snout rounded; mouth terminal, lips thin; two pairs of barbels, anterior pair reaching origin of posterior pair; live specimens light brownish or golden-silver dorsally, silvery or shading to silver on flanks and ventral surface; operculum with a bright yellow, bright orange or red spot, remainder of head bright silver; scales sometimes with dark margins; scales above lateral line with dark centers; a rather indistinct dark lateral streak; C and A clear orange, D faintly orange; a black zigzag stripe ending in a spot at base of CP usually present; other fins colourless.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' lineomaculatus Boulenger, 1903

Line-spotted barb



(Photo credit: Luc de Vos/NMK)

DISTRIBUTION AND NOTES:

Upper Pangani drainage and Lake Baringo (Mann, 1971; Ssentongo, 1974).

This taxon requires revision, preferably including genetic data, since several populations exterior to Kenya, e.g., the Pangani drainage in Tanzania and Lake George in Uganda, may represent distinct taxa.

DESCRIPTION:

Maximum known length 8.2 cm TL. D iii, 8, origin closer to occiput than C base, margin weakly emarginate; posterior simple D ray not enlarged, flexible, unserrated; A iii, 5; P1 not reaching P2; P2 origin below anterior D rays; 26-32 LL scales; body slender; snout rounded; mouth small, sub-inferior; lips moderately developed, lower with a median interruption; two pairs of long barbels; live specimens translucent brownish dorsally, silvery-white ventrally, some scales dark brown at base; a series of 4-7 black spots along each side of body connected by dark lateral streaks, all above lateral line except larger CP spot; operculum iridescent gold; nuptial males bright golden.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' loveridgii Boulenger, 1916

Loveridge's barb
"Adel" (DhoLuo, Lake Victoria)



(NMK FW 1456/1-2)

DISTRIBUTION AND NOTES:

Rivers in the Lake Victoria basin including the Migori (at Migori Town) and Mara, plus the Lake Baringo drainage (Boulenger, 1916, p. 245). Type locality is given as "Amala river, entering the east side of Lake Baringo" (Mann, 1971), but this appears doubtful.

DESCRIPTION:

Maximum known length 7.0 cm TL. D iii, 7, origin equidistant from occiput and C base; margin straight; posterior simple D ray robust, ossified, strongly serrated; A iii, 5, not reaching C; P1 equal to HL, reaching or almost reaching P2; P2 base entirely anterior to a vertical through D; 26-30 LL scales; snout rounded; mouth small, subinferior, lips feeble; 2 pairs of barbels, anterior pair very short, sometimes rudimentary; live specimens brownish dorsally, silvery-white ventrally; some scales black at base; a thin, black, posterior lateral streak.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' luikae Ricardo, 1939

Luika barb
"Adel" (DhoLuo, Lake Victoria)



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Lake Victoria basin (e.g. Sio River at Busia).

DESCRIPTION:

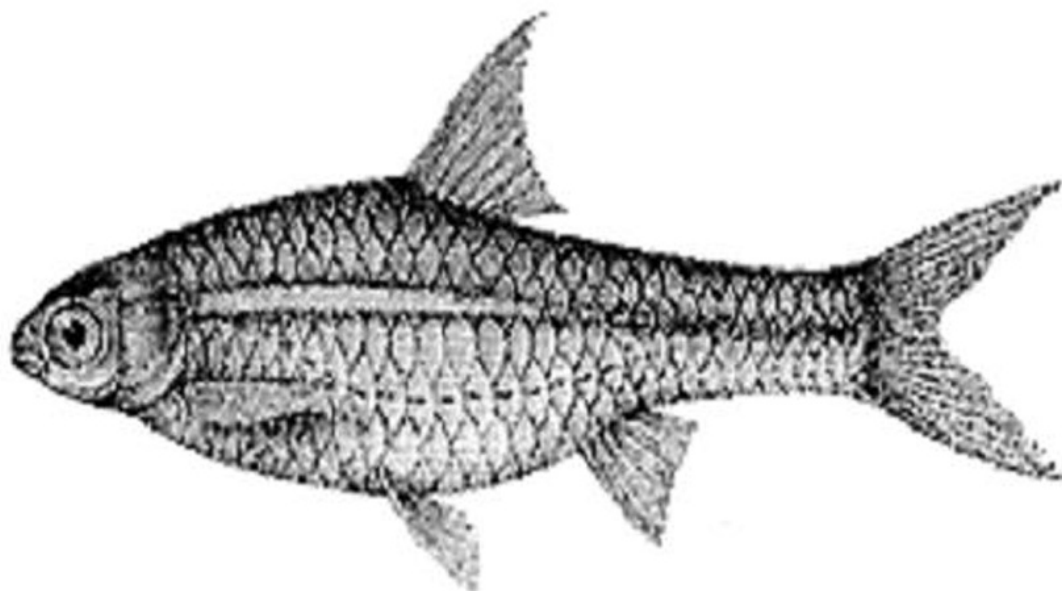
Maximum known length 6.6 cm SL.

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' magdalenae Boulenger, 1906

Bunjako barb
"Fani" (Luo, Lake Victoria)



(after Boulenger, 1911/specimen syntype (BMNH 1906.5.30:125-133) at BMNH, London)

DISTRIBUTION AND NOTES:

Endemic to the Lake Victoria basin. Mostly inhabits lower reaches of rivers, especially those associated with marginal water-lily swamps, but also occurs in the lake itself. No specimens have been collected recently and it might be restricted to Uganda, since the type specimens at the BMNH originated from Bunjako.

DESCRIPTION:

Maximum known length 9 cm TL. D iii, 8, origin equidistant from anterior margin of eye and C base, margin weakly notched, posterior simple ray not enlarged, ossified, or serrated; A iii, 5, not reaching C; P1 not reaching P2; P2 origin below or anterior to D; 29-32 LL scales; lateral line descending abruptly towards P2; snout variable in shape from strongly-to-moderately rounded, not prominent; mouth opening small, terminal, lips very thin; no anterior barbels or barbels completely absent; eye large; live specimens silvery to yellowish olive dorsally, with a silvery mid-lateral stripe which darkens post-mortem and is often black in preserved specimens; fins yellow.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'*Barbus*' *mariae* Holly, 1929

Rhino fish

"Domo" (Kamba, Athi River); "Kasinja" (Athi River); "Kovoo" (Tana River); "Matonzi",
 "Kambale" (M'kamba)



(Photo credit: Leonard Fleming)

DISTRIBUTION AND NOTES:

Athi (Kitui River) and Tana (upper courses, i.e., Kora, Tana River District) river systems.

Taxonomic status uncertain. According to Banister (1973), *Barbus matris* Holly 1928 from the Athi River is probably a senior synonym of *B. mariae*, and both these nominal species may represent junior synonyms of *B. oxyrhynchus* Pflüger 1889. Copley included *B. mariae* under the nomen nudum *B. rhinoceros* Copley 1938.

DESCRIPTION:

Maximum known length 34.2 cm TL; D iv, 9, origin in posterior portion of body \approx above P2 origin, equidistant from occiput and C base; posterior simple D ray robust, ossified, unserrated, 4th unbranched ray heavily ossified, smooth; dorsal margin of D markedly concave; A iii,5, almost reaching C; first P2 ray anterior to D origin; 30-37 LL scales; mouth inferior, lower lip usually with median interruption; upper jaw with a remarkable median protrusion ("rhinoceros horn" of Copley, 1958) when mouth open; anteroventral edge of labial premaxilla gently curved and projecting beyond lower jaw; two pairs of very short barbels; body shallow, elongate; live specimens steel-blue or olive brown dorsally, whitish or silverish ventrally; preserved specimens dark ochre-brown dorsally, silvery-yellow ventrally; fins pale brown; scales with dark margins.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' mimus Boulenger, 1912

Ewaso Nyiro barb



(NMK FW 304/1-46)

DISTRIBUTION AND NOTES:

Known from the Northern Ewaso Nyiro below Chandler's falls, Lake Baringo, and the Turkwell River (Lake Turkana drainage).

Name sometimes misspelled '*Barbus' minimus*.

DESCRIPTION:

Maximum known length 5.5 cm TL. D iii, 8, origin equidistant from posterior portion of eye and C base, weakly concave in shape, posterior simple ray not enlarged, unserrated; A iii, 5, not reaching C; P1 equal to HL, almost reaching P2; P2 origin below D origin; 25-26 LL scales; snout rounded; mouth small, subinferior; lips weakly developed; two pairs of barbels, anterior pair shorter; live specimens pale yellowish-brown with a silvery lateral band sometimes edged dorsally with a streak of black pigment; fins white, transparent, occasionally pale orange at base.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'*Barbus*' *neumayeri* Fischer, 1884

Neumayer's barb; spotted form (a), plain form (b)
"Adel", "Fwani" (DhoLuo, Lake Victoria), "Fwani" (Bogoria drainage, Baringo) - (a)
"Adel", "Kandhira" (DhoLuo, Lake Victoria), "Libili" (South Ewaso Nyiro) - (b)



(Photo credit: Denis Tweddle/SAIAB 5920)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Exclusively fluvial, occurring in major rivers of the Lake Victoria basin (e.g. Nzoia and Yurith). Both spotted and unmarked phenotypes inhabit the Northern and Southern Ewaso Nyiro drainages (e.g., Ewaso Mara between Isiolo to Archer's Post, Luazomela River above Chandler's Falls). Also known from the Athi (e.g. Nairobi River; Makindu, Tsavo Rivers), Tana (e.g. Riara, Thika), and Seya (Isiolo District) river systems, the Sinet stream near Loitokitok, and the Narok region, plus lakes Turkana (e.g. Suam River) and Bogoria, (e.g. Waseges and Subikia Rivers; Mann, 1971).

Also reported as *Barbus percivali* Boulenger 1903, *B. nairobiensis* Boulenger 1911 and *B. luazomela* Lönnberg 1911, all current synonyms.

The '*Barbus*' *neumayeri* group is in need of revision. Some populations currently considered to represent this species possess variable patterns of irregular black spots along the midline of the body. In most there are three such spots, but they may also merge to form an interrupted longitudinal stripe. Recent collections by BNHM from the Southern

Ewaso Nyiro and by KMFRI from Lake Victoria contained unmarked specimens, and it is unclear if these represent a previously-unrecorded phenotype or distinct taxon. If the latter proves true the name *Barbus carpio* Pfeffer 1896 is available for the spotted form.

DESCRIPTION:

Maximum known length 12 cm TL. D iii, 7, origin closer to C base than snout tip, posterior edge emarginate, posterior simple D ray ossified, strongly serrated; A ii-iii, 5-6; 30-31 LL scales; P1 not reaching P2, P2 base entirely beneath anterior D rays; snout slightly rounded; mouth inferior, terminal; lips thick; two pairs of barbels, anterior pair extending about halfway along posterior pair; live specimens dark brown or brownish olive-green dorsally, whitish or silver ventrally, with a sharp separation at midbody; fins pale brownish-green except pinkish-brown C; juvenile with three conspicuous spots or blotches on each flank, less intense or absent in larger individuals.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' nyanzae Whitehead, 1960

Nyanza barb
 "Adel", "Kandhira" (DhoLuo, Lake Victoria)



(Photo Source: KMFRI)



(Photo credit: Denis Tweddle/SAIAB 57008)

DISTRIBUTION AND NOTES:

Endemic to the Lake Victoria drainage, particularly lower reaches of rivers in Western and Nyanza Provinces (e.g. Nzoia, Sondu-Miriwu and Migori). Lacustrine records mostly pertain to littoral habitats.

DESCRIPTION:

Maximum known length 7.5 cm. TL. D iii, 7-8, posterior simple D ray ossified, serrated; A ii-iii, 5-6; P2 base entirely anterior to D; P1 reaching base of P2 in some specimens; CP slender; 26-28 LL scales; body slightly compressed; snout relatively acute especially in juvenile; mouth sub-inferior; anterior barbels shorter than posterior; live juvenile with black spot on CP and thin mid-lateral stripe extending to region below anterior D rays, dusky black pigmentation at A base and on first 8-10 lateral line scales; preserved specimens of all ages dark dorsally, white ventrally; scales above lateral line with dark centres; anterior lateral line scales with small, black, vertical bar in centre, all lateral line scales marked as such in adult; narrow, dark mid-lateral line extending to operculum anteriorly; fins colourless.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' oligogrammus David and Poll, 1937

Malagarasi barb
"Adel", "Kandhira" (DhoLuo, Lake Victoria)



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Known from the Lake Victoria basin, where it was collected from water bodies (streams, pools and other water bodies) in Siaya District during 1983.

Its name has been misspelled *Barbus ologogrammus* (R. Wildekamp, pers. comm.).

DESCRIPTION:

Maximum known length 6.1 cm SL.

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' oxyrhynchus Pfeffer, 1889

Pangani barb

"Domo" (Kamba); "Okejoo" (Tana River); "Mtonzi", "Kambale", "Kuyu" (Athi River); "Kambala" (Meru, Tana River); "Kasimba" (Athi River); "Ningu" (Kikuyu, Upper Tana System)



(Photo credit: Luc de Vos/NMK)

DISTRIBUTION AND NOTES:

Upper Pangani drainage, middle to upper courses of the Athi (about 40 Km southeast of Nairobi) and Tana (e.g. Mathioya, Thikathika Rivers) systems, and the Northern Ewaso Nyiro basin.

This species was recently reported from the Mara River within the Lake Victoria drainage for the first time (Subalisky, 2012), but this requires verification.

Synonyms include *Barbus tanensis* Günther 1894, *B. hindii* Boulenger 1902, *B. (Capoeta) perplexicans* Boulenger 1902, *B. (Labeobarbus) labiatus* Boulenger 1902, *B. krapfi* Boulenger 1911, *B. mathoiae* Boulenger 1911, *B. ahlSELLi* Lönnberg 1911, *B. athi* Hubbs 1918, *B. (Capoeta) babaulti* Pellegin 1926, *B. nairobi* Holly 1928, and *B. donyensis* Holly 1929.

Barbus copleyae (nomen nudum), reported from the Athi River by Copley (1941), most likely refers to '*B.*' *oxyrhynchus*, while a record by Copley (1941) of *B. gregorii* (non Boulenger) from the Tana River represents a misidentification of '*B.*' *oxyrhynchus*. The taxonomic status of several Kenyan populations is not fully-resolved.

DESCRIPTION:

Maximum known length 46 cm TL. D iii-iv, 7-8, origin equidistant from eye and C base, posterior edge concave; posterior simple D ray robust, ossified, sharp, unserrated, straight; A iii, 5, not reaching C; P1 not reaching P2; P2 base below anterior D rays; 21-28 LL scales; scales large; snout pointed; eye large; mouth terminal, lips weakly developed, lower with a median interruption; two pairs of barbels, posterior pair longer; live specimens predominantly silver, brown dorsally.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' paludinosus Peters, 1852

Straightfin barb
 "Adel", "Kandhira" (DhoLuo, Lake Victoria)



(Photo Source: KMFRI)



(Photo credit: Denis Tweddle/SAIAB 59202)

DISTRIBUTION AND NOTES:

Occurs in lakes and rivers throughout Kenya and the Lake Victoria basin, and expected in the Mara River. Records exist from the Natron, Turkana and Naivasha lake basins and affluents, internal drainages and eastward flowing rivers (e.g. the Athi and Tana systems), Simba Hills region, coastal drainages of southeastern Kenya, the Northern and Southern Ewaso Nyiro basins, Upper Pangani system, and Amboseli swamps.

Muchiri and Hickley (1991) report that *Barbus amphigramma* Boulenger 1903 was introduced in Lake Naivasha, but in apparent contradiction note that it has invaded the lake naturally from affluent rivers. Lever (1996) states that *B. amphigramma* was introduced into rivers near Lake Naivasha from Tanzania in 1982. In fact, '*B.*' *paludinosus* is naturally distributed in the Lake Naivasha system.

Seegers (1996) synonymised *Barbus taitensis* Günther 1894 and *B. amphigramma* with *B. paludinosus*, while *B. macropristis* Boulenger 1904, *B. thikensis* Boulenger 1905 and *B. helleri* Hubbs 1918 are also current junior synonyms.

DESCRIPTION:

Maximum known length 40 cm TL. D iii-iv, 7-8, origin equidistant from eye and C base, posterior margin concave; posterior simple D ray robust, ossified, sharp, unserrated, straight; P1 17; P2 ii, 8; A iii, 5, not reaching C; P1 not reaching P2; P2 base below anterior D rays; 21-28 LL scales; scales large; snout pointed; eye large; mouth terminal, lips weakly-developed, lower with a median interruption; two pairs of barbels, posterior pair longer; live specimens predominantly silver, brown dorsally.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' profundus Greenwood, 1970

Lake Victoria deep-water barb
"Fwani", "Madhadho" (DhoLuo, Lake Victoria)



(Photo credit: Denis Tweddle/SAIAB)

DISTRIBUTION AND NOTES:

Offshore waters of the Lake Victoria basin at depths up to 75 m.

This species was described by Greenwood (1970) as *B. radiatus profundus*, a subspecies of *B. radiatus* which is now considered a junior synonym. Stewart (1977) rejected the subspecific designation and raised it to species rank, being distinguished from '*B.*' *radiatus* by having fewer (10 vs. 12) scales around CP and lacking barbels.

DESCRIPTION:

Maximum known length 12.0 cm SL. D iii, 8-9, origin above or slightly anterior to P2 origin, more distant from eye than C base, outer margin straight; posterior simple D ray not enlarged, weak, flexible; A iii, 5-6, not reaching C; P2 base below anterior D rays; C deeply-forked; 24-29 LL scales; anterior portion of lateral line usually with distinct downward curve, occasionally straight; body distended ventrally, predorsal profile rising abruptly from posterior margin of skull, giving a humped appearance; snout rounded; mouth small, sub terminal; barbels absent; preserved specimens pale brown; fins transparent to whitish, anterior distal margin of D faintly dusky; a vertical brown stripe associated with each lateral line pore; eye black.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'*Barbus*' *radiatus* Peters, 1853

Beira barb, redeye barb
 "Fwani", "Madhadho" (DhoLuo, Lake Victoria)



(Photo credit: Luc de Vos/NMK)

DISTRIBUTION AND NOTES:

Known with certainty from lower reaches of the Tana River and coastal areas north of Tanga, Tanzania - so though considered rare it may be present throughout coastal drainages of southeastern Kenya. In the Lake Victoria basin only a single specimen has been collected from the Winam Gulf, but this may represent an aberrant individual of another species.

Also referred to by the names *Barbus doggetti* Boulenger 1904 and *B. radiatus radiatus*, both of which are junior synonyms (subspecific designation rejected by Stewart, 1977, who synonymised it with *B. profundus* Greenwood 1970).

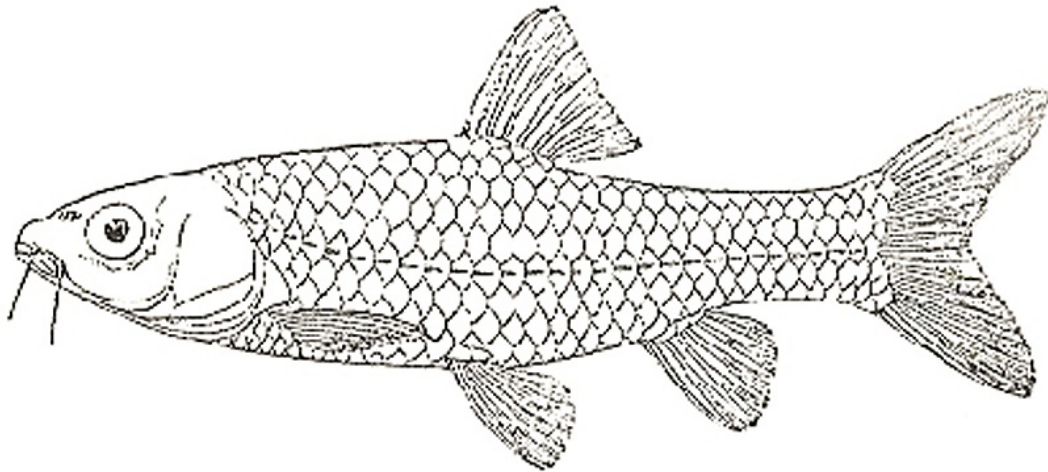
DESCRIPTION:

Maximum known length 12.0 cm SL. D iii, 8-9, origin above or slightly anterior to P2 base, equidistant from eye and C base, margin straight or slightly concave; posterior simple D ray weak, flexible, unserrated; A iii, 5-6, not reaching C; P1 reaching P2; P2 base below anterior D rays; C deeply forked; 24-29 LL scales; anterior portion of lateral line usually curving ventrally, sometimes straight; 12 circumpeduncular scales; predorsal body profile rising abruptly from posterior margin of skull, giving a humped appearance; snout, cheeks, preorbital region, and operculum with distinctive irregular pattern of small pits arranged in sinuous, almost parallel lines; snout rounded; mouth small, inferior, subterminal; posterior barbels longer than anterior, barbels absent in some specimens; live specimens silvery grey dorsally, whitish ventrally; scales above lateral line with dark centres, most pronounced on dorsum; usually a straight black stripe from snout to C base; D and C pinkish orange or rose red with sooty black margins, anterior and distal margins of D faintly dusky; upper portion of iris blood red.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' *sexradiatus* Boulenger, 1911

Kavirondo barb
"Adel", "Kandhira" (DhoLuo, Winam Gulf, Lake Victoria)



(after Boulenger, 1911: specimen holotype (BMNH 1909.11.15:11) at BMNH, London)

DISTRIBUTION AND NOTES:

Lake Victoria drainage (e.g. Kisumu Bay), but of dubious taxonomic status and known only from the holotype.

DESCRIPTION:

Maximum known length 7 cm TL. D iii, 6, origin equidistant from eye and C base, margin almost straight; posterior simple D ray robust, ossified, strongly serrated; A iii, 5, not reaching C; P1 not reaching P2; P2 origin anterior to D origin; 28 LL scales; snout blunt, rounded; mouth small, terminal; lips feebly developed; two pairs of barbels, posterior pair slightly longer.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' aff. *stigmatopygus* Boulenger, 1903

Mid-spot barb
 "Adel", Kandhira" (DhoLuo, Lake Victoria), "Obaduba" (Luhya, River Nzoia)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

The first record in the Lake Victoria basin was from the Sergoi River, an affluent of the Nzoia system, at Soy Town. Also known from the Lake Turkana drainage (Turkwell, Kerio and Kalakol Rivers).

Has been referred to as *Barbus weneri* Boulenger 1905. Specimens at BMNH listed as '*B. prince*' are provisionally included in *B. stigmatopygus* according to Banister (1987), but the taxonomic status of Kenyan populations is not fully resolved.

DESCRIPTION:

Maximum known length 6.5 cm SL; D iii, 8, origin equidistant from snout tip and C base, posterior simple ray not ossified; A iii, 5; P2 below D origin; 22-29 LL scales; barbels sometimes absent; live specimens silvery; 1-3 midlateral spots, more conspicuous in preserved specimens, two on horizontal myoseptum, one on CP, central spot missing in some specimens; a small round black spot at C base, sometimes an additional spot at A base.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' toppini Boulenger, 1916

East Coast barb
"Shaa" (Giriama, Lower Tana)



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Lower Tana (e.g. Baomo Village; pools in the Tana flood plain east of Garsen and towards Lamu) and Sabaki drainages.

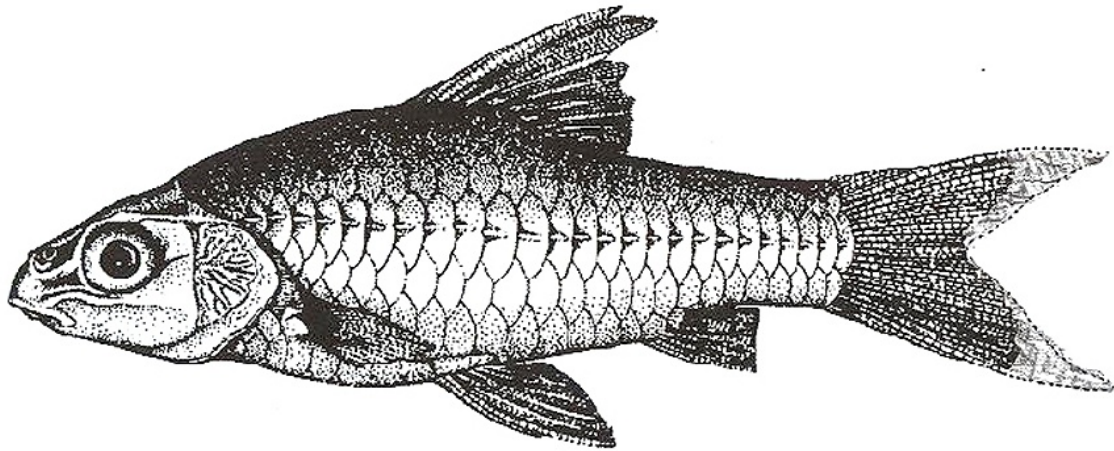
DESCRIPTION:

Maximum known length 4 cm TL; D III, 8, origin equidistant from eye and C base, margin weakly concave, posterior simple ray not enlarged, unserrated; A III, 5; 27-30 LL scales; snout rounded; mouth small, terminal; lips feebly developed; a single pair of minute barbels absent in some specimens; live specimens translucent olive dorsally, flanks silvery, whitish ventrally; an irregular back stripe extending from tip of snout to C base, broader and more prominent in males; preserved specimens yellowish with a black lateral stripe expanding into a small spot at C base.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' turkanae Hopson & Hopson in Hopson, 1982

Turkana barb



(after Hopson and Hopson, 1982: specimen holotype (BMNH 1978.5.16:65) at at BMNH, London)

DISTRIBUTION AND NOTES:

Endemic to Lake Turkana (e.g. northwest of Central Island).

DESCRIPTION:

Maximum known length 5 cm TL. D iii, 8-9, posterior simple ray smooth, flexible; A iii, 5; P1 not reaching P2 origin; P2 origin between verticals through posterior simple and anterior branched D rays; 22-25 LL scales; body compressed; predorsal profile convex with a noticeable nuchal hump; snout bluntly pointed, rounded when viewed from above; mouth relatively small, subterminal, barbels absent; eye orientated dorsally; live specimens generally pale silver; vermiculations formed by sensory pit canals present on snout, cheek, operculum, and interorbital region; preserved specimens with fine melanophores dorsally and dorso-laterally, more intense on dorsal midline; dorsal scales each outlined with darker pigment forming a reticulated pattern above lateral line; a slender vertical bar present on each lateral line scale, more prominent anteriorly; ventral portion of body generally pigment-free, exceptionally melanophores on scale row immediately below lateral line; a narrow band of melanophores on mid-ventral line extending from A; snout with a conspicuous black lateral streak; anterior margin of D black, remainder with a light scattering of fine melanophores concentrated towards distal margin; C lobes black distally, otherwise uniformly marked with fine melanophores, C slightly pinkish in some specimens; A, P1 and P2 lightly pigmented with a few scattered melanophores.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' venustus Bailey, 1980

Red Pangani barb



(Photo credit: Martin Grimm)

DISTRIBUTION AND NOTES:

Endemic to the Pangani River drainage, including Lake Jipe.

Has been misidentified as *B. amboseli* Banister 1980.

DESCRIPTION:

Maximum known length 4 cm TL. DIII, 7-8, origin above or slightly anterior to P2 origin, 3rd unbranched ray unossified, flexible; A III, 3; posterior branched D and A rays typically divided to base; P1 not reaching P2; 22-25 LL scales; CP relatively slender, body moderately compressed, predorsal profile convex with a slight nuchal hump; snout rounded; sharply-pointed conical tubercles or spinules on snout and lower jaw in male; mouth subterminal; two pairs of barbels, posterior pair longer, extending to middle of eye; live specimens orange-red dorsally and on CP; C orange-red; preserved specimens brownish dorsally, scales on upper portion of body and CP with dark margins, LL scales intensely pigmented above and below pores; a dark midlateral stripe of varying intensity extending from snout tip to C base; a small, rounded black spot at C base, patches of similar pigment on D origin and A base.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' yongei Whitehead, 1960

Nzoia barb
 "Adel" (DhoLuo, Lake Victoria); "Obaduba" (Luhya, Lake Victoria)



(Photo credit: Denis Tweddle/SAIAB 59201)

DISTRIBUTION AND NOTES:

Endemic to the Lake Victoria system, where it has been collected from rivers and stream of Western (e.g. lower Nzoia) and Nyanza (e.g. Sondu-Miriu) provinces, plus other major rivers within the basin.

Upper specimen pictured is male, lower female.

DESCRIPTION:

Maximum known length 7 cm TL. D iii, 7-9, posterior simple ray unossified, flexible; A iii, 5-6; P1 usually not reaching P2 origin; P2 base below anterior D rays; CP slender; 27-28 LL scales; body slightly compressed; snout moderately acute; mouth almost terminal; barbels short; preserved specimens dark dorsally, whitish ventrally; a broad black mid-lateral stripe running from tip of snout to C base; fins colourless.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'*Barbus*' zanzibaricus Peters, 1868

Zanzibar barb
"Kihalahala" (Pokomo, Lower Tana); "Shaa" (Giriama, Lower Tana)



(Photo credit: Luc de Vos/NMK)

DISTRIBUTION AND NOTES:

Coastal rivers, from the Uмба drainage northwards to the Sabaki, plus the lower Tana (e.g. Tana River Primate Reserve, Lake Mponge, Garsen), and Northern Ewaso Nyiro systems.

Has been reported as *Barbus argyrotaenia* Boulenger 1912, currently a junior synonym, but appears to represent a polymorphic species group in need of revision.

DESCRIPTION:

Maximum known length 9.7 cm TL. D iii, 7-8, origin equidistant from centre or posterior margin of eye and C base, margin straight; posterior simple D ray robust, ossified, serrated; A iii, 5-6, not reaching C; P1 not reaching P2; P2 base below anterior portion of D; 29-31 LL scales; snout rounded; mouth terminal; lips thin; two pairs of barbels, anterior pair slightly shorter; live specimens predominantly silverish, brownish dorsally; a small dark spot at C base.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' spec. "Athi"

Athi barb



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND ANNOTATIONS:

Athi River (e.g. near Athi River town).

An apparently undescribed taxon.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' spec. "Nzoia"

(specimen 65049 at SAIAB)

DISTRIBUTION AND NOTES:

Lake Victoria basin (e.g. River Nzoia).

An undescribed taxon.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' spec. "Sabaki"

Sabaki barb



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Known only from the Sabki River.

An undescribed taxon.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'*Barbus*' spec. "Tsavo 1"



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Known only from the Tsavo River.

An undescribed taxon.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' spec. "Tsavo 2"



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Known only from the Tsavo River.

An undescribed taxon.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' spec. "Turkwell 1"



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

River Turkwell, Lake Turkana basin.

An undescribed taxon.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

'Barbus' spec. "Turkwell 2"



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

River Turkwell, Lake Turkana basin.

An undescribed taxon.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Chelaethiops bibie (De Joannis, 1835)

Lake Turkana sardine



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Lake Turkana (e.g. Todenyang), and has also been collected from Genale, Somalia.

DESCRIPTION:

Maximum known length 5.5 cm TL. D iii, 7, origin above anterior portion of A, 2x further from occiput than C base, anterior branched ray longest; A iii, 16-19, anterior branched ray longest, similar to that of D; P1 acutely pointed, extending beyond P2 origin; C deeply forked; 37-41 LL scales; snout acutely pointed, orientated dorsally, projecting slightly beyond mouth; mouth extending to below center of eye; suborbital bones almost entirely covering cheek, second very narrow and extending to below center of eye; live specimens uniformly silverish, brownish-olive dorsally; fins yellowish-white.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

?*Ctenopharyngodon idella* Valenciennes in Cuvier & Valenciennes, 1844

Grass carp



(Photo credit: Museum of Comparative Zoology (MCZ))



(Photo credit: Albany Museum (AM))

DISTRIBUTION AND NOTES:

Tana and Athi river systems. Possibly introduced for culture, but it is uncertain if this species is established in Kenya. Native range comprises China and Eastern Siberia but it has been widely transported around the world for aquaculture and weed control. Brought to Kenya from Japan in 1969 (Welcomme, 1988).

DESCRIPTION:

Maximum known length 150.0 cm TL. D iii, 7-8, short, positioned midway between snout tip and C base, origin slightly anterior to P2 origin; A iii, 8, rounded; C forked; P1 18, relatively short, not reaching P2; P2 9; 37-45 LL scales; scales small; body elongate, robust, sub-cylindrical; dorsal and ventral profiles arched; head broad; snout short, pointed; mouth subterminal, protrusible, upper jaw slightly longer than lower; eyes positioned laterally, low set, located closer to snout tip than posterior margin of head; no barbels; operculum large, almost square-shaped; live specimens silvery, dark grey dorsally, head and fins dark grey, each scale with brownish tinge at base.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

?*Carassius auratus* (Linnaeus, 1758)

Goldfish



(Photo credit: Håkon Haraldseide)

DISTRIBUTION AND NOTES:

Introduced to Kenya according to Welcomme (1988). It is unknown, but doubtful, that feral populations are established. Present in domestic and commercial aquaria as well as city park pools (e.g. Nakumart Mega City, recreational pools at City Park Kisumu and Uhuru Park Nairobi), so there is potential for its escape into natural waters.

DESCRIPTION:

Maximum known length 64.0 cm TL. D II-III, 14-22, base long, origin closer to snout than C base; A II-III, 5-8; anterior D and A rays robust, ossified, serrated; P1 13-14; P2 9-11; 19-20 LL scales; scales moderately-sized; head short, small, depressed dorsally; body moderately deep, stocky; mouth small, terminal, oblique; no barbels; live specimens metallic olive-bronze to dark olive-brown dorsally, golden-yellow ventrolaterally, fins yellowish to reddish; juvenile with a distinct transverse dark blotch on C base.

Ornamental breeders have produced numerous 'fancy' forms via extensive selective breeding, and these frequently display atypical morphological characters: D may be reduced or entirely absent; A may have more than one spine; C can be enlarged with 2-4 lobes; vertebral column sometimes intentionally deformed; colour of live specimens highly variable, from orange to red, white, black, yellow, blue, or any combination of these.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Cyprinus carpio Linnaeus, 1758

Common carp



(Photo credit: Daniel O. Okeyo)

DISTRIBUTION AND NOTES:

Native to rivers draining into the Black, Caspian and Aral Seas. Introduced throughout the world for aquaculture, arriving to Kenya from Uganda in 1969. Has become established in dams and upper courses of the Tana and Athi river drainages, plus Lake Naivasha, and has replaced indigenous tilapias as the dominant species in some cases (Wellcome, 1988).

DESCRIPTION:

Maximum known length 120.0 cm SL. D II-III, 17-25, long-based; A II-III, 4-6; anterior D and A rays long with ossified, serrated posterior edge; no adipose fin; P1 I, 15-16; P2 9; C 17-19, deeply forked, lobes rounded; 30-40 LL scales; squamation variable: most individuals possess large, cycloid scales, but some forms have only a few scales scattered over the body; body deep, robust, slightly compressed laterally; head relatively small, tapering asymmetrically; mouth small, fleshy, protrusible, subterminal (terminal in juveniles); lips well-developed; one or two pairs of small barbels; eye relatively high on head; live specimens olive-brown to rich brazen gold, silvery-golden, dark brown, dark olive, or brownish-black dorsally, golden-yellow or bronze with metallic sheen laterally, cream to pale yellow or amber ventrally; fins amber, dark grey or pale bronze, A and lower half of C sometimes reddish; dark brown specks often present between scales.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Cyprinus carpio carpio Linnaeus, 1758

Mirror carp



(Photo credit: Håkon Haraldseide)

DISTRIBUTION AND NOTES:

Introduced to Lake Naivasha and the Tana River system. It is a domestic strain common in the United Kingdom and Europe, but introduced throughout the world for aquaculture and sports fishing.

The common name originates due to the reflective body scales.

DESCRIPTION:

Maximum known length 110.0 cm SL. D III-IV, 17-23, 17-20, base long, origin above P₂; A II-III, 5-6, posterior simple A ray ossified, posterior edge serrated; C III, 17-19, deeply emarginate, lobes rounded; 33-37+2-3 scales in midlateral series; body variable in form but generally deep, robust, slightly compressed laterally; head relatively small, tapering to snout; two pairs of barbels; eye relatively dorsal; live specimens predominantly grey to bronzish with reflective scales.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Garra dembeensis (Rüppell, 1835)

Dembea stone lapper
 "Ningu" (DhoLuo, Lake Victoria basin, Kikuyu, Upper Tana system)



(Photo credit: Luc de Vos/NMK)

DISTRIBUTION AND NOTES:

Lower reaches of major rivers in the Lake Victoria drainage, plus littoral habitats in the lake itself. Also occurs in the Northern Ewaso Nyiro, Pangani, Athi (e.g. upper river near Athi River town) and Tana river basins, and in springs associated with the Taveta and Lumi Rivers.

Has also been recorded as the currently synonymous *Discognathus johnstonii* Boulenger 1901, the antiquated binomen *D. dembeensis* (Rüppell 1835), *Garra hindii* (Boulenger 1905), and simply as *Garra* sp.

DESCRIPTION:

Maximum known length 16.0 cm TL. D iii, 7, equidistant from nostril or anterior border of eye and C base, posterior edge emarginate; A ii, 5; P1 \leq HL; P2 distant from P1, origin below centre of D; C deeply emarginate; 36-40 LL scales; body weakly compressed; head moderately depressed; snout rounded, interorbital region almost flat; snout of nuptial male with numerous conical horny tubercles; eye superolateral, in posterior portion of head; lips covered with granular papillae, upper lip well-developed, bordered by large papillae forming a fringe; lower lip forming a fold embracing a mental disc; small barbels on each side of mouth; live specimens olive-green or brown dorsally, yellowish ventrally, a series of round black spots near D base.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Labeo percivali Boulenger, 1912

Ganana labeo



(NMK FW 142/1-48)

DISTRIBUTION AND NOTES:

In Kenya, known only from the Northern Ewaso Nyiro river system.

According to Reid (1985), *L. percivali* represents a slender inland form of *L. bottegi* Vinciguerra 1897. Type locality of the latter is the Juba system in Somalia, and this doubtful synonymy is not followed here.

DESCRIPTION:

Maximum known length 32.0 cm TL. D iii, 10-11, equidistant from snout tip and C base, or slightly closer to former, posterior margin concave; posterior simple D ray extended in adult male; A iii 5, reaching or almost reaching C base; P1 reaching P2 base; anterior P2 ray below branched D rays 4-5; C deeply emarginate, lobes long, pointed; 38-42 LL scales; body strongly compressed; snout rounded; eye lateral; lips with small papillae forming transverse plicae; lower lip with a fringe of large papillae; rostral flap moderately large, with entire or indistinctly denticulate edge; a small barbel at each side of mouth; live specimens silverish to brownish-grey dorsally; P2 and unpaired fins greyish.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Labeo cylindricus Peters, 1852

Redeye labeo
 "Livuli" (Lake Baringo), "Ningu" (Kikuyu, Upper Tana; Meru, middle Tana)



(Photo credit: Chrisphine Nyamweya)

DISTRIBUTION AND NOTES:

Pangani drainage, Athi River system (southeast of Nairobi and Tsavo drainage), Galana system, Upper Tana, Northern Ewaso Nyiro basin, Lake Baringo system, affluents of the Lake Bogoria drainage, upper reaches of the Turkwell and Kerio rivers, Suguta drainage, and may occasionally occur in Lake Turkana itself. The first report of this species in the Mara River of the Lake Victoria drainage in Tanzania (Subalisky 2012) requires verification.

Boulenger (1903) reported this species from the Lumi River (Pangani drainage) as *Labeo montanus* (Günther 1889), a junior synonym. It has also been recorded in collections from the Athi and Baringo drainages as *Labeo forskalii* Rüpell 1835, a species which may not occur in Kenyan waters.

DESCRIPTION:

Maximum known length 40 cm TL. D iii 8-11, longest ray sometimes 2x length of shortest; A iii, 5-6; 34-39 LL scales; body cylindrical, slightly compressed; snout prominent, typically covered in rough, star-shaped tubercles; mouth large, lips fleshy externally, sharp and horny internally, lower lip papillose; a single pair of barbels; gill opening restricted to side of head; live specimens olive yellow-green with dark lateral stripe on body, whitish ventrally, largest specimens usually darker olive-grey; C often with dark upper and lower margins; upper portion of eye distinctly red.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Labeo gregorii Günther, 1894

Gregori's labeo
"Chika" (Pokomo, Lower Tana); "Kasimu", "Mkizi" (Giriama, Galana); "Nungu", "Ningu" (Meru, Middle Tana)



(Photo source: Luc de Vos/NMK)

DISTRIBUTION AND NOTES:

Known from the Athi and Tana river systems (e.g. in the lower basin at Merifano). There also exist questionable BMNH records from the Southern Ewaso Nyiro.

DESCRIPTION:

Maximum known length 23.1 cm TL. D iii, 11, upper margin oblique; A iii, 4, extending to C; P1 extending to P2; 37 LL scales; four longitudinal scale series between lateral line and P2 origin; mouth broad, crescent-shaped; lower lip thick, fringed with a horny inner fold; snout broad, obtuse anteriorly, projecting beyond lower jaw, without lateral lobe; maxillary barbel small, concealed in a deep lateral groove; eye relatively large; interorbital space broad, scarcely convex; live specimens greenish dorsally, silverish ventrolaterally.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Labeo horie Heckel, 1846

Assuan labeo
 "Chibule" "Chubule" (Turkana, Lake Turkana); "Kara" (El Molo, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Known from the Lake Turkana drainage (e.g. at Eliye Springs on the western shore), although taxonomic status of this population is uncertain.

Its name has been misspelled *Labeo lorii* (Hamblyn 1962) and *L. hourie* (Mann 1964). Some *Labeo* specimens from Lake Turkana drainage housed at the BMNH are tentatively identified as *L. niloticus* (Forsskål 1775), but are most likely *L. horie*.

DESCRIPTION:

Maximum known length 72.0 cm TL. D iii, 12-14, origin equidistant from anterior border or centre of eye and C, upper margin straight or slightly convex, anterior branched rays longest; A iii, 5, often reaching C base; P1 not reaching P2; anterior P2 ray immediately below D rays 4-5; C deeply emarginate, crescent-shaped when extended; 40-44 LL scales; body strongly compressed; snout broadly rounded; eye visible from above and below, positioned almost laterally; both lips with several rows of papillae, outer row long and conical, forming an obvious fringe on upper lip; edge of rostral flap entire; a minute barbel concealed within skin folds at each side of mouth; snout tuberculated or with pore-like scars; live specimen greyish, olive, greenish-brown, or steel blue dorsally, pale golden or silverish ventrally; juvenile with a poorly-defined dark spot on lateral line scales above P1; a dark longitudinal stripe sometimes present.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Labeo aff. mesops Günther, 1868

Tana labeo



(NMK FW 209/1)

DISTRIBUTION AND NOTES:

Athi and Tana river basins. In the latter it is known from middle and lower courses such as the Kora rapids and Galana River, but taxonomic status of the Tana population is uncertain.

Reid (1985) lists this species as *Labeo mesops* Günther 1868, a dubious identification using specimens from Lake Malawi.

DESCRIPTION:

Maximum known length 39.0 cm TL. D 13, margin concave; A 7; A not extending to C; P1 and P2 greatly separated; 39 LL scales; snout rounded, not fleshy, without tubercles, moderately pronounced; mouth small, lips moderately thick; OD half HL; interorbital space broad, convex; operculum of moderate length; live specimens with uniform colour pattern.

CLASS: OSTEICHTHYES
 ORDER: CYPRINIFORMES
 FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Labeo niloticus (Forsskål, 1775)

Nile labeo



(Photo Source: MCZ 26429)

DISTRIBUTION AND NOTES:

Lake Turkana basin, including the Turkwell irrigation scheme and Kokolongale dam.

Three specimens from Ferguson's Gulf which are housed in BMNH collections are identified as *Labeo senegalensis* Valenciennes 1842, a species which is only found in Western Africa, and may represent *L. niloticus*.

DESCRIPTION:

Maximum known length 72.0 cm TL. D iii, 14-17, upper margin typically concave, rarely straight or slightly convex, posterior simple ray and anterior branched ray usually longest, \geq HL, equidistant from snout tip and C; A III, 5, not reaching C base; P1 not reaching P2; anterior P2 ray below branched D rays 6-7; C deeply emarginate, crescent-shaped when expanded; 41-45 LL scales; body strongly compressed; mouth small, both lips with lateral rows of rounded or subconical papillae, those of the outer row forming a distinct fringe; edge of rostral flap entire; snout broadly rounded, with numerous small tubercles or pore-like scars; snout shorter than postocular portion of head; eyes perfectly lateral, closer to snout tip than occiput, visible from above and below; a single pair of barbels sometimes present, minute and concealed within folds of skin; live specimens greyish, brownish, olive, or steel blue dorsally, silvery-white ventrally; a variably distinct dark bar posterior to gill opening; sometimes a series of poorly-defined, dark longitudinal stripes on ventral portion of body; preserved specimens generally pale.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

?*Labeo trigliceps* Pellegrin, 1926

Nairobi labeo
"Ningu" (Kikuyu, Upper Athi)



(Photo Source: Lectotype MNHN 26.280)

DISTRIBUTION AND NOTES:

Putatively endemic to the Athi River system, but of uncertain taxonomic status.

Reid (1985) suspected the types of *Labeo trigliceps* to be aberrant specimens of *L. cylindricus* Peters 1852. Recent collections from the Athi River southeast of Nairobi comprised only *L. cylindricus*.

DESCRIPTION:

Maximum known length 49.0 cm TL. D iii-iv, 9-10; A ii, 5; P1 16; P2 10; 35-36 LL scales; flank scales with a bony encrustation posteriorly, making specimens rough to the touch; unique among African *Labeo* in having a pronounced bony supraorbital crest on each side of the head, resulting in a 'gurnard-like' appearance; live specimens brownish dorsally, orangey ventrally; paired fins dusky orange, unpaired fins dusky brown; preserved specimens dark brown to red-brown dorsally, pale brown ventrally; no dark lateral band.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Labeo victorianus Boulenger, 1901

Victoria labeo
“Ningu” (DhoLuo, Lake Victoria)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Endemic to the Lake Victoria drainage, both in tributaries and throughout the lake itself, and also expected to occur in the Mara River.

Following Reid (1981) the type locality of *Labeo wernerii* Lohberger 1929 is erroneous and the lectotype was misidentified, meaning it may be a synonym of *L. victorianus*.

DESCRIPTION:

Maximum known length 32.5 cm TL. D iii, 9-10, upper margin notched, strongly concave, posterior simple ray longest, equidistant from snout tip and C base; A ii-iii, 5, not reaching C base; P1 subfalciform, not reaching P2 base; anterior P2 ray below branched D rays 4-5; P2 not reaching vent; C deeply emarginate, crescent-shaped when expanded; 37-39 LL scales; body compressed; snout rounded, not fleshy, strongly projecting beyond mouth, with small bony warts; snout < post-ocular length; eye perfectly lateral or slightly anterior to centre of head, visible from above and below; interorbital region slightly convex; a minute barbel concealed within folds of skin at side of mouth; live specimens olive or dark steel grey dorsally, creamy-white ventrally; fins greyish, D sometimes yellowish at base; D, A, and P2 sometimes tinged with orange; a variably distinct spot posterior to upper part of operculum.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Labeo spec. "Baomo"

Red tail labeo
"Kuwu", "Kuvu" (Pokomo)



(NMK FW 1570/1)

DISTRIBUTION AND NOTES:

An unidentified taxon collected near Baomo Village. Possibly endemic to the lower Tana system.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Labeo spec. "Mariakani"

Mariakani labeo



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTE:

An unidentified taxon from Mariakani on Kenya's eastern coast.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Labeo spec. "Mzima 1"

Mzima labeo



(NMK FW 1311/1-3)

DISTRIBUTION AND NOTES:

An unidentified taxon known from Mzima Springs, Tsavo River System).

It may share characters with *Labeo trigiceps* Pellegrin 1926, which was described as endemic to the Athi River system.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Labeo spec. "Mzima 2"

Mzima Spring labeo



(Photo credit: Jen Guyton and Dauglas McCauley)

DISTRIBUTION AND NOTES:

An unidentified taxon first collected from Mzima Springs in the Tsavo River System during 2012.

It is possibly conspecific with *Labeo* spec. "Mzima 1", and thus may also share characters with *Labeo trigliceps* Pellegrin 1926. We were unable to preserve the entire fish in the field, but took photos and tissue samples for genetic work which have been lodged at the NMK.

DESCRIPTION:

Maximum known length 45 cm TL. Live specimens bluish-green. [Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Leptocypris niloticus (De Joannis, 1835)

Nile minnow



(Photo credit: Tesfaye Melak)

DISTRIBUTION AND NOTES:

In Kenya, restricted to the Lake Turkana drainage (e.g. at Loyangalani on the eastern shore).

Also reported as *Barilius niloticus* Blache & Miton 1961.

DESCRIPTION:

Maximum known length 9.5 cm TL. D III, 7-8, origin equidistant from nostril or eye and C base, anterior branched ray longest; A III, 10-12, anterior branched ray longest; P1 acutely pointed, not reaching P2; P2 short, not reaching vent; C forked; 36-40 LL scales; snout pointed, sometimes projecting beyond mouth; mouth extending to below anterior border of pupil or centre of eye; no barbels; suborbital bones almost covering entire cheek in adult; live specimens uniformly silverish, darker dorsally; fins whitish.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Neobola fluviatilis (Whitehead, 1962)

Athi sardine



(NMK FW 3407/1-32)

DISTRIBUTION AND NOTES:

Recorded from the Galana-Sabaki, lower Tana, and Athi (e.g. near Kithimani) river systems.

Also recorded as *Engraulicypris fluviatilis* Whitehead 1962. According to Howes (1984), *N. fluviatilis* may represent a southern population of *N. bottegi* Vinciguerra 1895. Although the latter is known only from the Omo River to the north of Lake Turkana, its presence on the Kenyan side of the lake should not be discounted.

DESCRIPTION:

Maximum known length 7.3 cm TL. D ii, 8, origin slightly posterior to A origin, anterior branched ray longest; A iii, 19-21; P1 pointed, reaching P2 origin; C deeply forked; CP slender; 37-40 LL scales; body compressed; snout pointed, not projecting beyond mouth; mouth extending to below anterior third of eye; suborbitals covering majority of cheek; live specimens dull green dorsally, intense silver laterally, on pre-operculum and operculum; fins colourless; preserved specimens whitish laterally.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Neobola stellae (Worthington, 1932)

Lake Turkana minnow



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Endemic to Lake Turkana (e.g. Loyangalani on the eastern shore), with recent collections from the Omo River delta.

Has been recorded as *Engraulicypris stellae* Worthington 1932.

DESCRIPTION:

Maximum known length 3.5 cm TL. D ii, 7-9, origin posterior to A origin; anterior branched ray longest; A iii, 14-16; P1 acutely pointed, reaching P2 in adults; C deeply forked; 34-37 LL scales; snout pointed, not projecting beyond mouth; mouth extending to below anterior third of eye; suborbitals covering majority of cheek; live specimens yellowish dorsally, silverish laterally; fins colourless.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Raiamas senegalensis (Steindachner, 1870)

Senegal minnow



(Photo credit: Zeleke Beri)

DISTRIBUTION AND NOTES:

Present in the Turkwell River drainage, Lake Turkana system.

Has been reported from Lake Turkana as *Raiamas loati* (Boulenger 1901), a current junior synonym (see Lévêque & Bigorne, 1983).

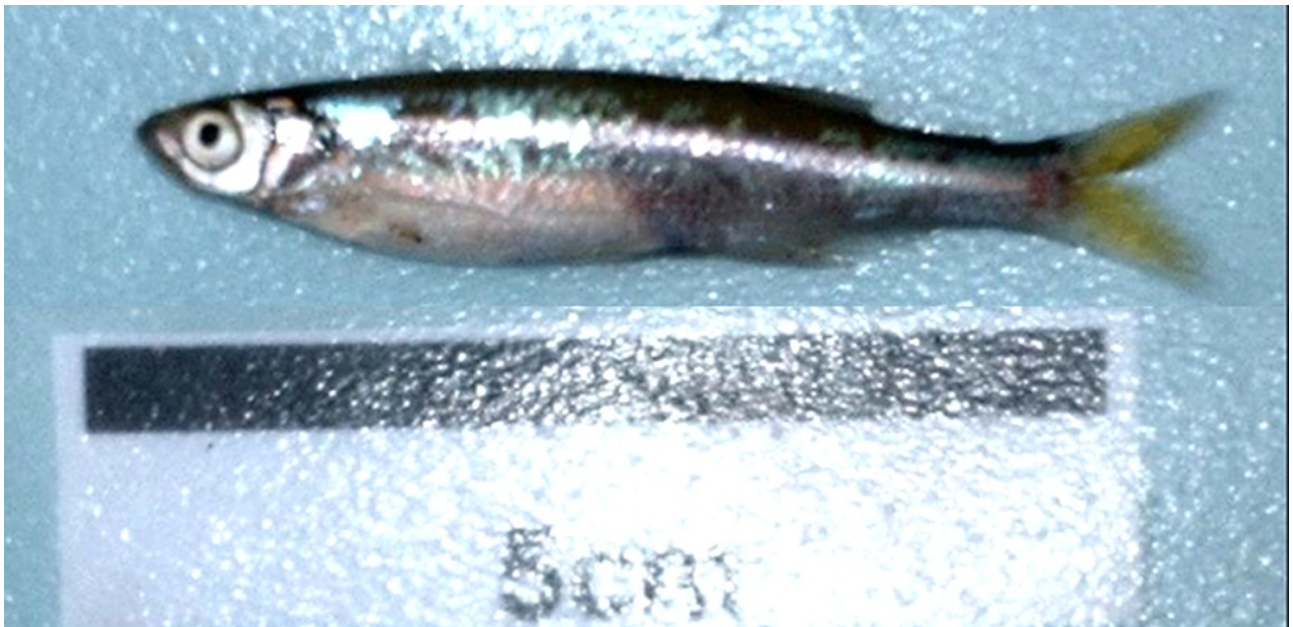
DESCRIPTION:

Maximum known length 24.5 cm TL. D III, 8, origin equidistant from occiput and C base, posterior third of base above A, anterior rays longest; A III, 15, notched, anterior rays approximate to anterior D rays; P1 pointed, not reaching P2; C deeply forked; 59-63 LL scales; snout pointed, projecting slightly beyond mouth; mouth extending to below or slightly beyond centre of eye; no barbels; narrow, unscaled space between preoperculum and suborbitals; live specimens greyish dorsally, silver-white ventrally; 12 dark, bluish-grey, dorsolateral vertical bars on side of body.

CLASS: OSTEICHTHYES
ORDER: CYPRINIFORMES
FAMILY CYPRINIDAE - Barbs, Minnows and Labeos

Rastrineobola argentea (Pellegrin, 1904)

Lake Victoria sardine
"Omena" (DhoLuo, Lake Victoria); "Dagaa" (Swahili, Lake Victoria)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Endemic to the Lake Victoria drainage where it occurs in the lower reaches of all Kenyan tributaries, plus the Winam Gulf, open waters, and satellite lakes within the basin.

DESCRIPTION:

Maximum known length 9 cm TL. D ii-iii, 7-8, origin above or slightly anterior to A origin, anterior branched ray longest; A i-ii, 13-16; P1 acutely pointed, not extending to P2; C deeply forked; 48-52 LL scales; snout acutely pointed, not projecting beyond mouth; mouth large and terminal, extending to below anterior border of eye; live specimens yellow-brown dorsally, silvery on flanks; C bright yellow, other fins whitish or greyish; preserved specimens with a dark mid-lateral band.

CLASS: OSTEICHTHYES
 ORDER: CHARACIFORMES
 FAMILY DISTICHODONTIDAE - Distichodines

Distichodus niloticus (Hasselquist, 1762)

Nile distichodus
 "Gwolo", "Golo" (Turkana, Lake Turkana); "Gala" (El Molo, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Relatively widespread but in Kenya restricted to the Lake Turkana basin.

Also recorded as *D. rudolphi* Günther 1896, currently a synonym of *D. nefasch* (Bonnaterre 1788).

DESCRIPTION:

Maximum known length 83.0 cm TL; D iii-vi, 19-23, origin equidistant from occiput and C base; D adipose small, scaled, approximately equidistant from D and C; A iii-iv, 10-12; P1 equal to or slightly shorter than P2; C forked, lobes rounded; 90-110 LL scales; BD fits \approx 2-4 times in TL; snout rounded, depressed, projecting slightly beyond mouth; maxillary extending to below nostril; dorsal surfaces of head and operculum ridged with low, radiating striae; live specimen purplish-grey dorsally, silver-white ventrally; vertical fins greyish, sometimes with blackish margins, D with numerous small dark spots; juvenile with 10-13 vertical dark bars on flank, a round blackish spot above P1, on or below lateral line, and another on C base, these markings gradually disappearing with age.

CLASS: OSTEICHTHYES
ORDER: CHARACIFORMES
FAMILY CITHARINIDAE - Citharines

Citharinus citharus intermedius Worthington, 1932

Turkana citharine

“Gage”, “Gej”, “Agurt”, “Gech” (Turkana, Lake Turkana); “Yoot” (EL Molo, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Lake Turkana.

Also reported as *Citharinus citharus* (Geoffroy Saint-Hillaire 1809).

DESCRIPTION:

Maximum known length 58.0 cm SL. D 17-21, 3-6 (iii-vi), origin posterior to vertical through P2 base, closer to C base than snout tip, branched rays often longer than head; D adipose moderately large to large; A 25-31, 3-4 (iii-iv), anterior rays forming a pronounced, pointed lobe; C deeply forked with pointed lobes; P1 reaching or almost reaching P2; 77-92 LL scales; dorsal head profile concave, steeply sloping; snout short, projecting slightly beyond mouth; a narrow vertical adipose lid anterior and posterior to eye; live specimens predominantly silverish, greenish or purplish-grey dorsally; P1 white, other fins grey, usually with some bright red on P2, A, and lower C lobe; D adipose sometimes with black margins, D adipose base dark grey; juvenile often with dark longitudinal stripes.

CLASS: OSTEICHTHYES
ORDER: CHARACIFORMES
FAMILY ALESTIDAE - African Characins

Alestes baremoze (De Joannis, 1835)

Egyptian robber
"Lelete", "Delete", "Juse", "Dorobela", "Dorobella" (Turkana, Lake Turkana); "Nyele"
(El Molo, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Lake Turkana, e.g., shelter of inlet at base of Mount Elmoite, eastern shore.

DESCRIPTION:

Maximum known length 43.0 cm TL. D ii, 8, origin equidistant from eye or occiput and C base; anterior branched ray longest; D adipose small, closer to C base than rayed D; A iii, 22-27, base at least equal to HL, often longer in adult; P1 \leq HL; C deeply forked, lobes pointed; 45-50 LL scales; snout rounded; eye lateral, adipose eyelid well-developed; anterior orbital region extremely convex; maxillary not reaching eye; live specimens predominantly silverish, bluish-grey dorsally; D grey, lower C lobe red, posterior margin of both lobes outlined in black; P2 and A with orange-red flush in adult.

CLASS: OSTEICHTHYES
ORDER: CHARACIFORMES
FAMILY ALESTIDAE - African Characins

Alestes dentex (Linnaeus, 1758)

Nile robber

“Lelete”, “Delete”, “Juse”, “Dorobela”, “Dorobella” (Turkana, Lake Turkana); “Nyele” (El Molo, Lake Turkana)



(NMK FW 1479)

DISTRIBUTION AND NOTES:

Lake Turkana.

DESCRIPTION:

Maximum known length 55.0 cm TL. D ii, 8-9, origin above P2 insertion; D adipose closer to C than rayed D; A ii-iii, 21-24; 44-50 LL scales; a well-defined fronto-parietal fontanelle present; eye with well-developed adipose lids; snout not projecting beyond lower lip; maxilla not reaching anterior margin of orbit; live specimens predominantly silverish, bluish-grey dorsally; D grey, lower C lobe red, posterior margin of both lobes outlined in black; P2 and A with orange-red flush in adult.

CLASS: OSTEICHTHYES
ORDER: CHARACIFORMES
FAMILY ALESTIDAE - African Characins

Brycinus affinis (Günther, 1894)

Redfin robber
“Nkwakwa” (Pokomo, Lower Tana)



(Photo credit: Frank Teigler)

DISTRIBUTION AND NOTES:

East-flowing coastal rivers including upper reaches of the Athi (Okeyo 1998), the Galana-Sabaki, and lower Tana (e.g. at Garsen) basins.

Also misidentified as *Alestes affinis* (Günther 1894) and *A. nurse* Pellegrin 1935 by Copley (1941), both of which are current members of the genus *Brycinus*.

DESCRIPTION:

Maximum known length 14.7 cm SL. D ii, 9, origin posterior to P2 base; D adipose closer to C than rayed D; P1 reaching P2; A iii, 15-16; C deeply forked, lobes pointed; 21-27 LL scales; live specimens silvery-brownish dorsally, with an indistinct reflective stripe along flank; a blackish post-opercular spot with a similar marking at C base.

CLASS: OSTEICHTHYES
 ORDER: CHARACIFORMES
 FAMILY ALESTIDAE - African Characins

Brycinus ferox (Hopson & Hopson in Hopson, 1982)

Large-toothed Lake Turkana robber
 "Lelete", "Delete", "Juse", "Dorobela", "Dorobela" (Turkana, Lake Turkana); "Nyele"
 (El Molo, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Endemic to Lake Turkana, e.g., west of North Island.

Described as *Alestes ferox* Hopson & Hopson 1982, and later placed in *Brycinus* by Lévêque *et al.* (1991). Also reported as *Alestes minutus* (Hopson & Hopson 1982).

DESCRIPTION:

Maximum known length 8.1 cm SL. D ii, 8; D adipose closer to C than rayed D; A iii, 12-14, central rays elongate in mature male; 36 LL scales; body scales weakly attached, easily lost during capture; mouth large; maxilla elongate giving distinctive 'muzzle-like' snout; dorsal profile of head partly concave; live specimens pale fawn with silvery scales, darker dorsally; D adipose hyaline; both lobes of C marked with red chromatophores interspersed with yellow chromatophores on lower lobe, distal margin with a broad black band; preserved specimens lightly patterned with melanophores dorsally, forming a distinct stripe on mid-dorsal line; characteristic patches of black pigment present on snout, lower jaw and mid-lateral portion of CP; a small but distinct black spot on flank, posterior to operculum in some specimens.

CLASS: OSTEICHTHYES
 ORDER: CHARACIFORMES
 FAMILY ALESTIDAE - African Characins

Brycinus jacksonii (Boulenger, 1912)

Victoria robber

“Osoga”, “Soga” (Luo, Lake Victoria); “Nsoga” (Luhya, Lake Victoria basin)



(Photo Source: DF-KMRD poster)



(Photo credit: Denis Tweddle/SAIAB 57020)

DISTRIBUTION AND NOTES:

Streams and rivers flowing into the Winam Gulf in the Lake Victoria drainage, plus the lake itself.

Image depicts a preserved specimen collected near Mwanza, Tanzania. Also misidentified as *Alestes jacksonii* Boulenger 1912, and *A. nurse* Pellegrin 1935 by Copley (1941). The identity of the fish from Lake Victoria referred to *Brycinus macrolepidotus* (Valenciennes in Cuvier & Valenciennes 1849) by Paugy in Daget *et al.* (1984: 154) is doubtful and probably represents *B. jacksonii*. *B. macrolepidotus* has only been reported from the River Omo, north of Lake Turkana, to date.

DESCRIPTION:

Maximum known length 27.0 cm SL. D ii, 8, origin posterior to vertical through P2 origin, equidistant from eye and C base, longest ray equal to HL; D adipose closer to C base than rayed D; A iii, 15-16, pointed medially in male; P1 rea-

ching P2; C deeply forked, lobes pointed; 25-29 LL scales; snout rounded; eye lateral, adipose eyelid barely visible; interorbital region feebly convex; maxillary almost reaching anterior border of eye; sexual dimorphism demonstrated by A morphology, margin straight to slightly concave in female, markedly convex in male, thus fin appears much larger in male, individual rays stouter and coarser in male; live specimens predominantly silverish, bluish-grey or brownish to blue-black dorsally, a distinct dark lateral band extending from above operculum to upper portion of C; a large black blotch on CP; a round black blotch posterior to head, often faint or invisible in life but intensified post mortem; D greyish, A and P2 with a faint orange or yellow tinge, D adipose orange, C yellow or orange.

CLASS: OSTEICHTHYES
 ORDER: CHARACIFORMES
 FAMILY ALESTIDAE - African Characins

Brycinus macrolepidotus (Valenciennes in Cuvier & Valenciennes, 1849)

Large scaled robber
 "Gowa", (Lake Turkana)



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Hopson & Hopson (1982) observed the fish in the Omo River, very close to Lake Turkana, thus it is also expected to occur in Kenyan territory. There exists a doubtful report from Lake Victoria (Fowler, 1936) but this may refer to *B. jacksonii*.

DESCRIPTION:

Maximum known length 32.8 cm TL. D ii, 7-8, origin considerably closer to C than occiput, anterior branched ray longest; A iii, 12-14; P1 13, \leq HL, sometimes approaching P2; P2 10; C deeply forked, lobes pointed, lower usually longer than upper; 22-27 LL scales; dorsal head profile head flat, broad; snout rounded and short in juvenile, pointed and projecting beyond lower lip in adult; eye inferolateral, scarcely visible from above, visible from beneath, adipose eyelid weakly developed; maxillary not reaching anterior border of eye; lower border of second suborbital \geq OD; live specimens brown or olive dorsally, dorsal scales with dark margin, silvery white or pinkish ventrally and on cheek, a pink lateral band often extending from cheek to above A, some specimens with interrupted dark brown bars along flank; fins pink or orange, C often with grey to blackish margins; juvenile usually with a blackish spot on CP, and another posterior to operculum.

CLASS: OSTEICHTHYES
ORDER: CHARACIFORMES
FAMILY ALESTIDAE - African Characins

Brycinus minutus (Hopson & Hopson in Hopson, 1982)

Dwarf Turkana robber



(Photo Source: Holotype BMNH 1976.5.16:37)



(Photo Source: BMNH 1978.5.16: 37)

DISTRIBUTION AND NOTES:

Endemic to Lake Turkana, e.g., north west of Ilaret.

Has also been reported as *Alestes minutus* Hopson & Hopson 1982, and was placed in the genus *Brycinus* by Lévêque *et al.* (1991).

DESCRIPTION:

Maximum known length 4.0 cm TL. D ii, 7-8; D adipose closer to C base than rayed D; A iii, 12-14; 31 LL scales; scales exceptionally delicate and easily detached, with a substantial proportion usually missing in preserved specimens; body compressed; mouth superior, slightly subterminal; live specimens pale fawn with silvery scales; fins clear; preserved specimens with very pale pigmentation, a cluster of melanophores on the dorsal surface of the head and a faint mid-dorsal stripe along the body; some specimens with a poorly-defined black CP spot and a faint mid-lateral body stripe.

CLASS: OSTEICHTHYES
 ORDER: CHARACIFORMES
 FAMILY ALESTIDAE - African Characins

Brycinus nurse (Rüppell, 1832)

Turkana Nurse tetra

“Lelete”, “Delete”, “Juse”, “Dorobela” (Turkana, Lake Turkana); “Nyele” (EL Molo, Lake Turkana)



(Photo credit: KMFRI)



(Photo credit: Chen Hung-Jou)

DISTRIBUTION AND NOTES:

In Kenya, restricted to the Lake Turkana basin.

Has also reported under the invalid subspecific name *Alestes nurse nana* (Pellegrin 1935). Lake Turkana specimens are noticeably smaller (12.0 cm FL) than specimens from other populations, which grow up to 21.8 cm SL.

DESCRIPTION:

Maximum known length 26 cm TL. D ii, 7-8, origin above P2 base, equidistant from centre or posterior border of eye and C base, longest ray \leq HL; D adipose closer to C base than rayed D; A i-iii, 11-16; P1 slightly shorter than head; C deeply forked, lobes pointed; 26-33 LL scales; snout rounded; eye lateral; interorbital region moderately convex; maxillary not reaching anterior border of eye; live specimens silvery or pale golden, dark grey or brown dorsally, sometimes with blackish post-opercular and CP spots, the latter sometimes extending along median C rays; D greyish, usually tinged with pink or red; P2 and A white or yellow, usually with a red band; D, P2 and A tinged with red, C lobes vivid red, orange, or yellow, base and margins blackish.

CLASS: OSTEICHTHYES
 ORDER: CHARACIFORMES
 FAMILY ALESTIDAE - African Characins

Brycinus sadleri (Boulenger, 1906)

Sadler's robber
 "Osoga", "Soga" (DhoLuo, Lake Victoria); "Nsoga" (Luhya, Lake Victoria)



(Photo Source: KMFRI)



(Photo credit: Denids Tweddle/SAIAB 65055)

DISTRIBUTION AND NOTES:

Lower reaches of major Lake Victoria affluents and around shorelines of the lake, e.g., Winam Gulf.

Misidentified as *Alestes nurse* Pellegrin 1935, and *Micralestes lernerii* Nichols & LaMonte 1938.

DESCRIPTION:

Maximum known length 15.0 cm TL; D ii, 8, origin posterior to P2 base, equidistant from occiput and C base; longest D ray \leq HL; D adipose closer to C than rayed D; A iii, 16-19, pointed medially in male; P1 not reaching P2; C deeply forked, lobes obtusely pointed; 26-34 LL scales; snout rounded, not projecting beyond lower lip; eye lateral, adipose eyelid poorly developed; interorbital region weakly convex; maxillary approaching anterior border of eye; sexual dimorphism in A as described for *B. jacksonii*; live specimens silvery-blue to brownish or steel blue dorsally, silvery-white ventrally, an indistinct dark lateral band extending from above operculum to C base (black and distinct in preserved specimens); D greyish, other fins yellow; a brilliant orange or black blotch on CP, extending onto central C rays.

CLASS: OSTEICHTHYES
 ORDER: CHARACIFORMES
 FAMILY ALESTIDAE - African Characins

Hydrocynus forskahlii (Cuvier, 1819)

Elongate tigerfish
 "Lokel" (Turkana, Lake Turkana); "Koris" (El Molo, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

In Kenya, restricted to Lake Turkana.

Has been referred to the synonymous genus *Hydrocyon* Cuvier 1819, while its name has also been misspelled *H. forskali* or *H. forskalii*.

DESCRIPTION:

Maximum known length 90.0 cm TL. D ii, 7-9, origin anterior to P2, equidistant from snout tip, nostril, or eye, and C base, second simple ray longest; D adipose closer to C than rayed D; A iii, 11-13, third simple ray longest; $P2 \leq P1$; C deeply forked with long, pointed lobes; 48-54 LL scales; 2 scales between lateral line and a scale-like process at P2 base; mouth extending to below nostril or anterior orbital margin; maxillary extending to centre or posterior border of eye; suborbital and opercular bones smooth or weakly striated; eye with vertical adipose lid; live specimens grey, brown, or olive-green dorsally, silvery-white laterally and ventrally; variably distinct longitudinal rows of blackish spots, often forming confluent streaks, extending along scale series above lateral line; D and upper C lobe yellow or grey, often blackish towards tips; D adipose greyish or whitish, rarely with a black spot; P2 and A, sometimes P1, tinged with pink or pale orange; lower C lobe bright red.

CLASS: OSTEICHTHYES
 ORDER: CHARACIFORMES
 FAMILY ALESTIDAE - African Characins

Hydrocynus vittatus (Castelnau, 1861)

Tigerfish
 "Lokel" (Turkana, Lake Turkana); "Koris" (El Molo, Lake Turkana)



(Photo credit: Luc de Vos/NMK)



(Photo credit: Enrico Richter)

DISTRIBUTION AND NOTES:

In Kenya, restricted to Lake Turkana, with some records pertaining to *Hydrocyon lineatus* Bleeker, 1863, currently a junior synonym. Also reported from Lake Turkana by Worthington & Ricardo (1936). According to Hopson & Hopson (1982) it is now principally riverine in the Turkana system, with ecological changes inhibiting incursions into the lake. Brewster (1986) and Paugy & Guégan (1989) discuss its status in more detail.

DESCRIPTION:

Maximum known length 70.0 cm SL. D ii, 7-8; D adipose closer to C than rayed D; D and A pointed; A iii, 10-13; C deeply forked; 43-48 LL scales; scales large; body fusiform; head large with bony cheeks and strong jaws; mouth extending to below nostril or anterior orbital margin; maxillary extending to centre or posterior orbital margin; suborbi-

tal and opercular bones smooth or weakly striated; eye with vertical adipose lid; live adult with striking colour pattern comprising silvery body and head with bluish sheen dorsally and a series of parallel longitudinal black stripes on flank, generally more intense below lateral line; tip and distal margin of D black, D adipose black, C yellow to blood red with black distal margin, other fins intensely yellow to red basally; juvenile with distinctive silvery parallel stripes from a size of ≈ 1.5 cm SL

CLASS: OSTEICHTHYES
ORDER: CHARACIFORMES
FAMILY ALESTIDAE - African Characins

Micralestes aff. *elongatus* Daget, 1957

Elongated Turkana robber



(Photo credit: Frank Teigler)

DISTRIBUTION AND NOTES:

Kenyan records exist only from Lake Turkana, although taxonomic status of that population uncertain.

Previously misidentified as *Micralestes acutidens* (Peters 1852) by Hopson & Hopson (1982).

DESCRIPTION:

Maximum known length 6.5 cm TL. D ii, 8, origin above P2 base, equidistant from center or posterior border of eye and C; D adipose small, closer to C than rayed D; A iii, 14-16; C deeply forked, lobes pointed; live specimens yellowish with a broad silvery lateral stripe, often edged with blackish pigment; fins whitish, transparent; D often with a blackish spot at tip; D adipose reddish.

CLASS: OSTEICHTHYES
ORDER: CHARACIFORMES
FAMILY ALESTIDAE - African Characins

Rhabdalestes tangensis (Lönnerberg, 1907)

Pangani robber



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Pangani drainage, e.g. at Zinga, and the western shore of Lake Jipe. Records of this species from the Tana basin may be the result of misidentification.

This species was described as *Petersius tangensis* Lönnerberg 1907.

DESCRIPTION:

Maximum known length 10.0 cm TL. D ii, 8, almost equal to HL, origin posterior to P2 base, equidistant from anterior border of eye and C; D adipose small, slender, closer to C than rayed D; A ii-iii, 16-17; P1 not reaching P2 base; P2 reaching vent; C deeply forked; 35-36 LL scales; lateral line complete; mouth oblique; lower jaw projecting slightly beyond snout; snout < OD; maxillary extending to below anterior margin of eye; live specimens reflective silvery, oliveaceous or greenish dorsally, plainer ventrally, with a dark silverish lateral stripe.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY BAGRIDAE - Bagrid Catfishes

Bagrus bajad (Forsskål, 1775)

Black Nile catfish

“Lorok”, “Loruk”, “Lorogo”, “Lorongo” (Turkana, Lake Turkana); “Loruk” (El Molo, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Lake Turkana.

DESCRIPTION:

Maximum known length 72.0 cm SL. D I, 9-11, extending beyond P2 origin, spine smooth, moderately robust, anterior soft rays extended into short filaments; adipose D \approx 2x longer than rayed D; A ix-x, 4-5; P1 spine moderately robust, inner margin weakly serrated; P2 \approx equidistant from snout tip and C; C deeply forked, both lobes extended into long filaments; body slender; head narrow, depressed; snout broadly rounded or truncate, projecting beyond lower jaw; maxillary barbel reaching extremity of P2 or A in adult, to CP or C in juvenile; live specimens pale grey to dark brown dorsally, creamy-white ventrally; fins yellowish, C sometimes reddish; body and fins sometimes with small, irregularly arranged, dark spots.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY BAGRIDAE - Bagrid Catfishes

Bagrus docmak (Forsskål, 1775)

Sudan catfish

“Lisi”, “Loruk” (Turkana, Lake Turkana); “Lisi” (El Molo, Lake Turkana); “Sewu”, “Seu” (Luo, Lake Victoria)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Lake Victoria, including mouths of major tributaries, and the Lake Turkana basin.

Has been reported as *Bagrus degeni* Boulenger 1906 which is a junior synonym of *B. docmak* according to Greenwood (1966), itself often misspelled *B. docmac*. A record of “*B. docmac*” from the Athi River by Copley (1941) most likely refers to *B. urostigma* Vinciguerra 1895.

DESCRIPTION:

Maximum known length 110.0 cm TL. D I, 8-10, not extending beyond P2 origin, spine smooth, moderately robust, anterior soft rays pronounced into short filaments in adult; adipose D \approx as long as rayed D; D and A short; A viii-ix, 4-5; P1 spine moderately robust, inner margin weakly serrated; P2 \approx equidistant from eye and C; C deeply forked, upper lobe extended into a long filament; body moderately elongate, slightly compressed; head broad, smooth dorsally; snout broadly rounded, projecting beyond lower jaw; 4 pairs of unbranched barbels, proportionately longer in juvenile, maxillary barbel extending to P1 in adult, to A or CP in juvenile; live specimens greyish-blue to dark olive dorsally, creamy-white ventrally, body sometimes flecked with gold and green; some blackish pigmentation may be present on D, A, and P2; blackish dots sometimes present on posterior portion of dorsum and D adipose.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY BAGRIDAE - Bagrid Catfishes

Bagrus urostigma Vinciguerra, 1895

Somalia catfish



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Northern Ewaso Nyiro (e.g. above Thompson's Falls) and lower reaches of eastern coastal rivers such as the Sabaki and Tana. A record of "*B. docmac*" from the Athi River by Copley (1941) probably refers to this species.

This taxon may be conspecific with *Bagrus orientalis* Boulenger 1902, which occurs in coastal rivers of Tanzania.

DESCRIPTION:

Maximum known length 72.0 cm TL. D I, 9-10, longest ray \approx equal to HL, posterior ray above P2 origin; D adipose very large, 2x length of rayed D base, almost filling space between D and C; A 10-14; inner margin of P1 spine strongly serrated; C deeply forked, upper lobes pointed; head depressed, smooth or finely striated dorsally; snout truncate, projecting beyond lower jaw; nasal barbel reaching anterior border of eye, maxillary barbel very long, reaching centre of D adipose in juvenile, tip of rayed D in adult; live specimens reddish-brown or olive dorsally, yellowish-white ventrally; dorsum, D adipose, and C sometimes with scattered black spots.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY CLAROTEIDAE - Clarotid Catfishes

Auchenoglanis occidentalis (Valenciennes in Cuvier & Valenciennes, 1840)

Giraffe catfish

“Bulubulich”, “Lokorikibon” (Turkana, Lake Turkana); “Tikir” (El Molo, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Lake Turkana system.

Also misidentified as *Oxyglanis sacchii* Vinciguerra 1898.

DESCRIPTION:

Maximum known length 60.0 cm. TL. D I, 7-8, anterior margin of spine rough; D adipose wedge-shaped; A ii, 6-8; P1 spine robust, anterior edge granulate, posterior edge strongly serrated; mouth small, terminal; lips thickened, papillose; snout long, pointed; maxillary barbel always shorter than outer mandibular barbel, not extending beyond posterior border of eye except in some small specimens; outer mandibular barbel equal or longer than inner mandibular barbel; live specimens olive or brown, darker dorsally, uniform or with dark brown or blackish spots, which when present are often large on D and C; spotting more intense and invariably present in juvenile.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY CLAROTEIDAE - Clarotid Catfishes

Chrysichthys auratus (Geoffroy Saint-Hilaire, 1809)

Golden Nile-catfish
"Lochakolong" (Turkana, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Lake Turkana, e.g., south east of Ferguson's Lodge.

DESCRIPTION:

Maximum known length 30.0 cm TL. I, 6, spine robust, weakly serrated posteriorly; anterior D soft ray usually extended, sometimes > HL; D adipose \geq rayed D base, usually shorter than its distance from latter; A vi-viii, 5-7; P1 not reaching P2, spine robust, inner edge serrated; C deeply forked, lobes acutely pointed, upper often pronounced into a short filament; head moderately depressed, dorsal surface variably rugose; snout broadly rounded; eye large, transversely oval; mouth inferior, width \geq interocular width; mandibular barbel < nasal and maxillary barbels; live specimens buff-grey dorsally, silvery-white ventrally; an ill-defined dark transverse band posterior to occiput and another anterior to D.

CLASS: OSTEICHTHYES
 ORDER: SILURIFORMES
 FAMILY CLAROTEIDAE - Clarotid Catfishes

Clarotes laticeps (Rüppell, 1829)

Wideheaded catfish

“Mpum” (Pokomo, Lower Tana); “Pongwe” (Athi River); “Ngogo” (Giriama, Galana River)



(Photo credit: Luc de Vos/NMK)

DISTRIBUTION AND NOTES:

Northern Ewaso Nyiro, Dawa (Juba system), Tsavo, lower Athi (Galana-Sabaki drainage), and lower Tana river basins.

Also reported from the Athi River at Kibwezi, as the synonymous *Chrysichthys pitmani* Fowler 1936. The taxonomic status of Kenyan populations is uncertain and in need of study, however.

DESCRIPTION:

Maximum known length 80.0 cm TL. D I, 6, spine robust, posterior edge weakly serrated posteriorly in juvenile, anterior edge granulated in adult, anterior soft ray longest, < HL; D adipose base short, rays indistinct in specimens < 10.0 cm TL, anterior spine fully ossified in specimens > 40.0 cm TL; A vii-viii, 5-7; P1 not reaching P2, spine robust with 5-18 serrae on inner edge, serrae proportionally larger in juvenile than adult, adult with additional fine serrations on outer margin of fin; P2 much closer to C base than snout tip; C deeply forked, lobes acutely pointed in juvenile, obtuse to rounded in adult; head greatly depressed, dorsal surface rugose with fine granulations, mostly concentrated on occiput; operculum with radiating striae; snout broad, rounded or truncate; eye large, transversely oval; mouth inferior, \geq interocular space; maxillary barbel flattened, base band-like; outer mandibular barbel half to almost entire HL; live specimens brown dorsally, silvery-white ventrally; a blackish spot above humeral process; a brown or blackish band on each C lobe.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY CLAROTEIDAE - Clarotid Catfishes

Pardiglanis tarabinii Poll, Lanza & Sassi, 1972

Somalia giant catfish
"Mpumi Hwahwa" (Pokomo, Lower Tana)



(NMK FW 1388/1)

DISTRIBUTION AND NOTES:

Previously only known from the Juba system in Somalia, this species was recently recorded from the Lower Tana basin (De Vos, 2001a).

Taxonomy of this population requires assessment.

DESCRIPTION:

Maximum known length 87.6 cm TL. D I, 6, base short, composed of small basal bones; D adipose III, 8, base short, anterior two spines shorter than posterior; A 3+9, base short; C deeply notched, lower lobe longer than upper; paired fins orientated laterally, relatively short; P1 I, 8, anterior edge serrated; P2 1+5; head distinctively broad and flattened, $\approx 2.5x$ broader than deep; operculum long, continuous, not connected to isthmus; mouth wide, approaching head width, angle extending to centre of eye; eye superior; nostril close to snout tip; premaxillary long, continuous; mandibular long, curved, small interruption at symphysis; 4 pairs of long barbels; body only slightly longer than head, depressed anteriorly, compressed posteriorly, covered with smooth skin; lateral line barely evident; live specimens brownish-black dorsally, silvery-white ventrally, humeral process blackish; distal tips of D, adipose, and A blackish.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY SCHILBEIDAE - Butter Catfishes, Glass Catfishes

Parailia somalensis (Vinciguerra, 1897)

Somalian glass catfish
"Mpawa Rukanga" (Pokomo, Lower Tana)



(Photo credit: Luc de Vos/NMK)

DISTRIBUTION AND NOTES:

Lower Tana River system, e.g., at Hola.

Synonyms include *Physailia somalensis tanensis* Whitehead 1962, and *Physailia somalensis somalensis* Whitehead 1962. Reported as *Physailia* spec. by Whitehead (1959).

DESCRIPTION:

Maximum known length 10.0 cm TL. D absent; D adipose present; P1 I, 10; P2 greatly reduced; A 61-75 (mean \approx 66), not reaching C base; P1 pointed, spine unserrated; C deeply forked, lobes pointed, lower lobe larger; body strongly compressed; jaws equal in length; barbels extending to middle of body; male with a long, pointed genital papilla; live specimens uniformly colourless and translucent, swim-bladder visible through skin; dorsal surface and A base peppered with faint, irregular melanophores also visible in preserved specimens.

CLASS: OSTEICHTHYES
 ORDER: SILURIFORMES
 FAMILY SCHILBEIDAE - Butter Catfishes, Glass Catfishes

Schilbe intermedius Rüppel, 1832

Silver catfish, Butter catfish

“Mpawa Rukanga” (Pokomo, Lower Tana); “Mpowa” (River Tana), “Kakonje” (Giriama, Galana River); “Sire”, “Rawa” (DhoLuo, Lake Victoria); “Kissengo” (Swahili)



(Photo Source: KMFRI)



(Photo credit: Denis Tweddle/SAIAB 59027)

DISTRIBUTION AND NOTES:

Occurs in the Northern Ewaso Nyiro, Juba, Galana-Sabaki, and Tana rivers, lower reaches of major tributaries such as the Sondu-Miriu within the Lake Victoria drainage, and throughout the lake itself. Specimens from Victoria lack an adipose fin.

This species has previously been misidentified as *Schilbe mystus* (Linnaeus 1758), *S. niloticus* (Rüppel 1829), and *Eutropius depressirostris* (Peters 1852; see De Vos 1995). Currently, the latter is a synonym of *S. intermedius*, while *S. niloticus* is synonymous with *S. mystus*.

DESCRIPTION:

Maximum known length 60.5 cm TL. D I-II, 5-6; D adipose minute or absent, when present typically folded against body thus not clearly visible; D and P1 with slender, sharp spine, inner edge serrated; A iv-v, 47-62; A base long but

not confluent with C; body elongate, compressed, tapering towards C; skin smooth; anterior nostrils closer to each other than posterior nostrils; snout extending slightly beyond lower jaw; eyes lateral; mouth terminal; 4 pairs of thin filamentous barbels, not extending beyond occiput; colour pattern of live specimens variable depending on water conditions, from very light olive or silvery grey in turbid habitats, to darker with chocolate-brown mottling in transparent waters; ventral side of head and abdomen usually whitish, sometimes infused with yellow; a large bilateral black blotch posterior to head; juvenile often with three broad, dark stripes along flank.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY SCHILBEIDAE - Butter Catfishes, Glass Catfishes

Schilbe uranoscopus Rüppel, 1832

Egyptian buttercatfish
“Naili”, “Nail” (Turkana, El Molo, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Lake Turkana drainage including the Turkwell River, e.g., at Katilo.

DESCRIPTION:

Maximum known length 40.0 cm TL. D II, 5-6; A iv-v, 63-70; C lobes rounded or obtusely pointed; dorsal profile of head almost flat, with nape ascending abruptly from occiput to D; eye supero-lateral; maxillary barbel < half HL in adult; live specimens predominantly silverish, steel blue dorsally, head sea-green; fins flesh-coloured; a variably distinct brown streak on upper C lobe; juvenile sometimes with a dark lateral stripe and a single black spot on both D and P1.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY AMPHILIIDAE - Mountain Catfishes

Amphilius jacksonii Boulenger, 1912

Marbled mountain catfish



(Photo credit: KMRD)

DISTRIBUTION AND NOTES:

Exclusively riverine, occurring in affluents of the Lake Victoria drainage including the Sio (near Busia), Nzoia, and Yala drainages. Also occurs in elevated streams of the Kakamega Forest.

DESCRIPTION:

Maximum known length 15.0 cm TL. D i, 6, origin closer to snout tip than C base; D adipose base long; A iii, 7; P1 \approx equal to HL; P2 of similar length to P1, origin posterior to D base; C deeply emarginate, crescentic; head depressed, slightly longer than wide; snout rounded; eye small; posterior nostril closer to eye than snout tip; maxillary barbel slightly shorter than HL, extending beyond P1 origin; live specimens marbled yellowish-brown dorsally, lighter and more uniform ventrally; a blackish streak extending from eye to maxillary barbel; fins yellowish to whitish; C with irregular black spots, a blackish bar at base; D dark basally, an interrupted black line near tip, a distal transverse series of black spots; A with two black transverse bars, an interrupted black line near tip.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY AMPHILIIDAE - Mountain Catfishes

Amphilius uranoscopus (Pfeffer, 1889)

Stargazer; Mountain catfish



(Photo credit: KMRD)

DISTRIBUTION AND NOTES:

Exclusively riverine, occurring in affluents of the Lake Victoria drainage including the Sio (near Busia), Nzoia, and Yala drainages. Also occurs in elevated streams of the Kakamega Forest plus the Northern Ewaso Nyiro (Boulenger, 1912), Pangani, upper Athi (e.g. near Athi River town) and Tana (e.g. Chania River of Tsetse) river systems.

Misidentified as *Amphilius grandis* Boulenger 1905, *A. oxyrinus* Boulenger 1912 (currently a synonym of *A. grandis*), and *A. krefftii* Boulenger 1911.

DESCRIPTION:

Maximum known length 19.5 cm TL. D i, 6, origin closer to snout tip than C base; D adipose base long, almost 2x rayed D, notched posteriorly; A ii-iii, 5-7; P1 slightly longer than HL; P2 origin posterior to D; C weakly emarginate or forked; head slightly longer than broad; snout broadly rounded; eye very small; posterior nostril located midway between eye and snout tip; maxillary barbel usually extending beyond occiput, in some cases to midway between head and D origin, outer mandibular barbel < HL; colour pattern of live specimens variable, usually yellowish-brown or greyish-brown with irregular dark blotches or spots.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY AMPHILIIDAE - Mountain Catfishes

Leptoglanis aff. rotundiceps (Hilgendorf, 1905)

Sand catlet



(Photo credit: KMRD)

DISTRIBUTION AND NOTES:

Known only from affluent rivers within the Lake Victoria drainage, including the Nzoia and Kuja-Migori drainages. Records of this species from the Tana River drainage are dubious.

Possibly the same species reported from the Yala River by Whitehead (1958), but taxonomic status of the Victoria population is unclear.

DESCRIPTION:

Maximum known length 4.0 cm TL. D I-II, 5-7, origin close to head, spine short, simple, unserrated; D adipose base long, elongate, not extending to C base; A iii-iv, 6-8; P1 almost equal to HL, not reaching P2, spine with large barbs on posterior edge; P2 spine robust, strongly serrated on posterior edge; C slightly emarginate or truncate; fins rounded to angulate; body stout, tapering to C; head short, rounded, moderately depressed, slightly longer than broad; snout broadly rounded; eye dorsal; posterior nostril closer to eye than snout tip; mouth subterminal; three pairs of simple barbels; maxillary barbels with basal membrane; maxillary extending to below posterior nostril; lateral line complete or incomplete, terminating adjacent to P1 origin; live specimens transparent to off-white or pale brownish dorsally, with irregular grey or sooty markings and a series of oblong dashes, sometimes with darker round spots along mid-body; C, A and P1 with dark bands.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY CLARIIDAE - African Catfishes

Clariallabes petricola Greenwood, 1956

Victoria snake catfish



(Photo Source: Paratype BMNH 1956.10.9.204)

DISTRIBUTION AND NOTES:

Occasionally collected from lower reaches of rivers in the Lake Victoria drainage, and has been recorded from the lake itself.

DESCRIPTION:

Maximum known length 11.0 cm. TL. D 61-71; A 47-55; D and A confluent with C, latter rounded and usually with greater depth than length; thick skin covering both D and A precluding accurate fin-ray counts in preserved specimens; P1 spine with a few strong serrae on posterior edge, weak serrations on anterior edge; P2 relatively small, frequently of unequal size, usually with 5-6 rays; frontal fontanelle narrow and sole-shaped in larger individuals, broader and more extensive in subadult, barely distinguishable beneath skin; superficial adductor mandibular muscle well developed, visible as a lateral swelling above dorsal head profile; head with soft lateral aspects; eye very small, without free border; circum-oral barbels well developed, all except inner mandibular pair thickened and flattened proximally; inner mandibular barbels slender, < HL; variability of barbel length in different specimens possibly attributable to damage in life or post-preservation; live specimens dark brown, almost black dorsally, shading to lighter brown ventrally; preserved specimens uniformly grey-black.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY CLARIIDAE - African Catfishes

Clarias alluaudi Boulenger, 1906

Alluaud's catfish
"Oludhe", "Mumi" (DhoLuo, Lake Victoria)



(Photo credit: KMFRI)

DISTRIBUTION AND NOTES:

Lake Victoria drainage, especially river mouths flowing into the Winam Gulf area, plus the gulf itself.

Only tentatively distinguished from *Clarias weneri* Boulenger 1906.

DESCRIPTION:

Maximum known length 23.0 cm TL. D 65-90, origin about a quarter head length from occipital process, extending to C base; A 55-72, extending to C base; P1 spine serrated anteriorly and posteriorly; P2 almost 2x further from C tip as snout tip; head smooth dorsally; occipital process acutely pointed; eye very small; nasal barbels variable in length, reaching at least midpoint between D origin and supra-occipital process, often extending beyond anterior D rays; maxillary barbels usually > HL, extending to or beyond anterior D rays; outer mandibular barbel longer than inner; live specimens dark olive-brown or khaki, occasionally greyish-black dorsally, lighter brown ventrally.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY CLARIIDAE - African Catfishes

Clarias gariepinus (Burchell, 1822)

Sharptooth catfish, Common catfish, Mudfish

“Mumi”, “Sombi”, “Dera” (DhoLuo, Lake Victoria); “Ongala” (DhoLuo, Lake Kanyaboli); “Kopito”, “Obito”, “Singre” (Turkana, Lake Turkana); “Lokate” (El Molo, Lake Turkana); “Kopito” (Samburu, Northern Ewaso Nyiro); “Singri”, “Singre” (Lake Baringo); “Macharufu” (Meru, Tana River system); “Nisu” (Pokomo, Lower Tana); “Kambali”, “Kambale” (Swahili, Athi River)



(Photo credit: KMFRI)



(Photo credit: W. A. Djatmiko)

DISTRIBUTION AND NOTES:

Has been recorded from most rivers of Kenya, including the Nzoia, Yala, Nyando (including Kano-Ahero floodplains), Sondu-Miriu, Kuja-Migori, Northern Ewaso Nyiro, Southern Ewaso Nyiro, and Juba (Dawa tributary drainage). Also expected to occur in the Mara system. Inhabits numerous lake basins including Turkana (e.g. Suguta River), Bogoria (e.g. Waseges River), Baringo (eastward flowing tributaries (e.g. Tana and Athi)), Sare, Kanyaboli, and Victoria (only in Uganda and Tanzania to date).

Kenyan populations have been misidentified as *Clarias mossambicus* Peters 1852 and *C. lazera* Valenciennes in Cuvier & Valenciennes 1840, both of which are currently junior synonyms. Also reported from Lake Victoria under the name *C. anguillaris* (Linnaeus 1758) by Copley (1941), but that species is native to northern Africa. This species is used for pond aquaculture in Western Kenya and Nyanza (Rwanda), particularly at Kibos, Sangoro, Migori, pools southwest of Homa Bay town, and Dominion Farms in the Yala River delta.

DESCRIPTION:

Maximum known length 150.0 cm TL. D 61-80, extending from behind head almost to C base; A 45-65, extending from A base to C base; D and A elongate, C rounded; anterior edge of P1 spine barbed; body strongly compressed towards C; upper surface of head coarsely granulate in adult, smooth in juvenile; head large, depressed, heavily ossified and completely encased dorsally; eye very small, lateral; mouth large, subterminal, almost equal to interorbital width; 4 pairs of long, filamentous nasal barbels; maxillary barbel rarely < HL in adult, usually extending to midpoint between D origin and P2 origin; barbels proportionately longer in small individuals; outer mandibular barbel longer than inner; colour pattern of live specimens variable from blackish to light brown, typically with olive green or dark greyish-black marbling dorsally, creamy-white ventrally; marbled pattern may persist in large specimens, and it is likely that colour pattern varies between populations, possibly in relation to habitat; head with a fairly distinct black longitudinal stripe on each side of ventral surface; fins sometimes with red tips, especially in nuptial individuals; black head stripes absent in specimens measuring < 9 cm SL; subadult (10-30 cm) mottled, grey-khaki dorsally.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY CLARIIDAE - African Catfishes

Clarias liocephalus Boulenger, 1898

Smoothhead catfish
“Nduri” (DhoLuo, Lake Kanyaboli); “Mali” (Swahili)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Known with certainty from the Nzoia and Yala rivers in the Lake Victoria basin, with lacustrine populations in lakes Victoria and Kanyaboli and Victoria. Also expected to occur in the Mara drainage, and has been recorded from the Nairobi dam (Upper Athi River) where it has probably been introduced.

Previously reported as *Clarias carsonii*, Boulenger 1903, currently a junior synonym. *C. neumanni* Hilgendorf 1905 was described from the Southern Ewaso Nyiro but it was noted by the collector of the type (O. Neumann) that the locality might be incorrect and the specimens might have originated from the Lake Manyara system. A specimen stored at BMNH 1916.1.14:24 from “Southern Ewaso Nyiro” has coordinates corresponding to the Northern Ewaso Nyiro. Teugels (1986) synonymised *C. neumanni* with *C. liocephalus* without examining the types of *C. neumanni*, and erroneously reported that the types of *C. liocephalus* are housed in the Nairobi Museum. Records of *C. liocephalus* from the Southern Ewaso Nyiro, erroneously attributed to the Tana River drainage by Teugels (1986), are based on incorrect localities but the species is now verified to occur in that drainage.

DESCRIPTION:

Maximum known length 32.0 cm TL. D 70, extending from behind head almost to C base; A 50, extending to C; D and A not confluent with C; P1 half HL, not extending to vertical through D origin; head smooth, covered with soft skin, slightly longer than wide; maxillary barbel equal to HL, nasal barbel shorter; live specimens uniformly blackish-brown.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY CLARIIDAE - African Catfishes

Clarias weneri Boulenger, 1906

Werner's catfish
"Mumi" (DhoLuo, Lake Victoria); "Kambale" (Luhya, Lake Victoria)



MCZ 65193

DISTRIBUTION AND NOTES:

Rivers draining the Lake Victoria basin. Lacustrine in the lake and pools southwest of Homa Bay.

Only tentatively distinguished from *Clarias alluaudi*.

DESCRIPTION:

Maximum known length 23.0 cm TL. D 82-91; A 68-72, D and A confluent with or very narrowly separated from C; P1 almost half HL, spine weakly serrated on posterior edge; dorsum of head smooth or weakly granulated; eye very small, OD 2-3x snout length; mouth slightly less wide than interorbital space; nasal barbels extending to $\approx 1.5x$ HL; maxillary barbel at least reaching posterior extremity of P1; live specimens blackish-brown dorsally, lighter brown ventrally.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY CLARIIDAE - African Catfishes

Heterobranchus longifilis Valenciennes in Cuvier & Valenciennes, 1840

Vundu
“Labe” (Turkana, Lake Turkana); “Mgonjwa” (Swahili)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Existing records from Lake Turkana and middle Omo River, although no specimens from the lake currently exist in scientific collections. Local fishermen have confirmed its presence, however.

DESCRIPTION:

Maximum known length 180.0 cm TL. D 29-39, extending to above anterior portion of A; D adipose large, extending from rayed D to C, \approx as long as rayed D, commencing immediately posterior to or at a short distance behind latter; A 44-54, origin closer to base of P2 than snout tip, extending to C base; P2 \approx midway between snout tip and C base; head large, not depressed, upper surface coarsely granulated in adult; nasal barbel very long, $> 50\%$ HL; maxillary barbel extending to or beyond P2; live specimens olive-grey or reddish-brown dorsally, whitish ventrally, sometimes with scattered black blotches; D and A pale olive, darker distally, sometimes with red margins; C yellow or pale orange at base, with a variably distinct blackish concentric band, sharply defined anteriorly, fading to yellow or red behind; D adipose often blackish at tip; juvenile with irregular dark blotches or spots.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY CLARIIDAE - African Catfishes

Xenoclarias eupogon (Norman, 1928)

Lake Victoria deepwater catfish
"Mumi" (DhoLuo, Lake Victoria)



(NMK FW 121/1)

DISTRIBUTION AND NOTES:

Endemic to the Lake Victoria basin. Occasionally recorded from lower reaches of major rivers but primarily lacustrine, e.g., deep waters of Rusinga Island channel.

The potential extinction of this species in Lake Victoria is attributed to predation by Nile perch and other recent ecological impacts (Goudswaard & Witte, 1997). It has also been reported as *Clarias eupogon* Norman 1928, as per the original description, and *Xenoclarias holobranchus* Greenwood 1958.

DESCRIPTION:

Maximum known length 22.0 cm. TL. D 80±; A 62; D and A in contact but not confluent with C; P1 spine variably serrated anteriorly and posteriorly; head smooth dorsally; eye small, ≈ equal to width of mouth; adpressed nasal barbel almost reaching P2 tip; maxillary barbel extending almost to centre of D; outer mandibular barbel almost 1.5x times longer than inner; live specimens olive-brown dorsally, lighter ventrally.

CLASS: OSTEICHTHYES
 ORDER: SILURIFORMES
 FAMILY MALAPTERURIDAE - Electric Catfishes

Malapterurus electricus (Gmelin, 1789)

Electric catfish
 "Lasali", "Losali" (Turkana, El Molo, Lake Turkana)



(Photo credit: Chen Hung-Jou)

DISTRIBUTION AND NOTES:

Lake Turkana, including the Turkwell River. Also known from the Malagarasi River in western Tanzania.

Golubtsov & Berendzen (1999) reported the presence of both *Malapterurus electricus* and *M. minjiriya* Saguá 1987 in the Omo system, the only perpetual tributary of Lake Turkana. Confirmation as to which *Malapterurus* species occur in Lake Turkana is thus required. This species' name is sometimes misspelled *Malapterurus electricus*.

DESCRIPTION:

Maximum known length 140.0 cm TL. D adipose base long, slightly separated from C; A 6-12, base short, located below D adipose; P1 rounded, \geq P2 length; P2 origin \approx midway between eye or gill-opening and C base; C rounded; body cylindrical, robust; HL \geq width, dorsum flattened, sometimes weakly grooved dorsally, covered with thick skin; snout rounded; lower jaw sometimes projecting slightly; eye very small, lateral; three pairs of unbranched barbels, nasal barbels absent, maxillary barbel present, outer mandibular barbel long, often extending beyond base of P1; live specimens grey-silver, brown, or bluish dorsally, whitish ventrally, usually with irregular black spots or blotches on body; C darker posteriorly, usually with orange or red border; A with orange or red border; C and A outlined with pinkish band; P1 and P2 yellowish, reddish, or bright red; juvenile with a light ring around CP, a black bar at C base, and a crescentic black band on posterior half of C; a well-developed electric organ encases majority of body and is capable of delivering a powerful shock. Live specimens should be handled with great care, preferably using some non-conducting medium.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY ARIIDAE - Sea Catfishes

Arius africanus Playfair & Günther, 1866

African sea catfish



(Photo Source: SAIAB)

DISTRIBUTION AND NOTES:

A coastal species known from lower courses of the Sabaki and Tana rivers, where it has been collected in pure freshwater.

It has been hypothesised that there may be two *Arius* species, *A. africanus* and *A. dussumieri* Valenciennes in Cuvier & Valenciennes 1840, inhabiting the lower basins of eastern flowing Kenyan rivers but this requires confirmation.

DESCRIPTION:

Maximum known length 45.0 cm TL; D I, 7, spine weakly serrated on anterior and posterior edges, often less so posteriorly; D adipose small; A vi, 13-15; P1 spine similar to D; P2 not reaching A origin; C deeply forked, lobes long and pointed; skull bones coarsely granulated, dorsal surface of head rough with pearl-like granules; snout short, broad, projecting slightly beyond mouth; eye lateral, oval; maxillary barbels extending to posterior extremity of humeral process; live specimens brownish dorsally, silverish laterally, whitish ventrally.

CLASS: OSTEICHTHYES
 ORDER: SILURIFORMES
 FAMILY MOCHOKIDAE - Squeakers and Suckermouths

Chiloglanis brevibarbis Boulenger, 1902

Short barbelled suckermouth



(NMK FW 288)

DISTRIBUTION AND NOTES:

Athi, e.g. near Athi River town, and Tana river systems.

This species has been reported under the name *Chiloglanis athiensis* Copley 1941, and appears very similar to *C. decenii* Peters 1868, but the taxonomic status of Kenyan *Chiloglanis* populations is uncertain.

DESCRIPTION:

Maximum known length 6.1 cm TL. D I, 5, spine unserrated; D adipose base long, well separated from rayed D; A iii, 7, base short, not reaching C base; P1 spine slightly curved; P2 reaching A origin; C deeply forked; body slightly depressed anteriorly, compressed posteriorly; head strongly depressed; eye with free border; lips forming a sucking disc; barbels short, maxillary barbel slightly longer than inner and outer mandibular barbels; nostrils set far apart, anterior nostril equidistant from snout tip and eye; live specimens pale brownish dorsally, with four irregular dark cross-bands connected by a dark lateral stripe, whitish ventrally; two dark bars on A; a dark bar at C base, another on each lobe, an additional dark streak on lower lobe; preserved specimens dark brown dorsally, with a line of small pale spots above mid-lateral line and three larger whitish areas below; two dark bars on A, one at base and another across middle of fin; P1 with a dark streak on anterior rays; entire dorsal surface covered with numerous minute protuberances.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY MOCHOKIDAE - Squeakers and Suckermouths

Chiloglanis deckenii Peters, 1868

Pangani suckermouth



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Pangani drainage, including the Lumi River.

DESCRIPTION:

Maximum known length 8.0 cm TL. D I, 5, spine not distinctly serrated; D adipose present; A iii, 6-8; P1 spine slightly longer than D; P2 extending to at least A origin; C deeply forked, lower lobe longer than upper; body slightly depressed anteriorly, compressed posteriorly, slightly longer than wide; eye oriented dorsally, in posterior portion of head; maxillary barbels slightly longer than outer lower labials; live specimens olive-brown, with irregular darker cross-bands; a dark bar at C base and another across each lobe.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY MOCHOKIDAE - Squeakers and Suckermouths

Chiloglanis aff. *niloticus* Boulenger, 1900

Kerio suckermouth



(NMK FW 2243/1-24)

DISTRIBUTION AND NOTES:

Lake Turkana drainage, e.g., Kerio River Gorge, east of Chebloch.

Has been referred to *Chiloglanis niloticus* Boulenger 1900, but Kenyan *Chiloglanis* populations are in need of detailed taxonomic study.

DESCRIPTION:

Maximum known length 4.5 cm TL. D I, 6-7; D adipose low; A iii, 7-8; P1 spine unserrated; P2 extending to at least A base; C deeply forked, lobes pointed; body slightly or uncompressed, scaleless; head smooth, strongly depressed, slightly longer than wide; eye in posterior portion of head, oriented dorsally; snout broadly rounded; maxillary barbel longer than lower labials; modified lips and barbels form a sucking disc; live specimens pale greyish-olive dorsally, with four broad cross-bands of dark olive speckled with blackish pigmentation, cross-bands broader than interspaces between; rayed fins greyish, D adipose yellowish, C with a horizontal blackish bar on each lobe, the end of which is pale yellow; head dark olive dorsally, white or yellowish ventrally; adult male with elongate A and C, humeral process enlarged in some specimens.

CLASS: OSTEICHTHYES
 ORDER: SILURIFORMES
 FAMILY MOCHOKIDAE - Squeakers and Suckermouths

Chiloglanis somereni Whitehead, 1958

Someren's suckermouth



(Photo credit: Frank Teigler)

DISTRIBUTION AND NOTES:

Primarily riverine and present in all western-flowing tributaries of Lake Victoria, including the Waroya, Nzoia (Western Province), Nyerere (Yala affluent), Indigo area (Kisumu-Kakamega road), and Migori (Nyanza Province). Expected to occur in the Mara river system.

DESCRIPTION:

Maximum known length 10.0 cm SL. D I, 5, spine composed of numerous oblique plates which suggest faint serrations posteriorly; D adipose low, long-based; A iii, 8; P1 spine almost straight, unserrated; P2 extending to A base, origin at midpoint between CP and eye; C deeply forked, lobes bluntly rounded; body elongate; head depressed; eye in posterior portion of head, oriented dorsally; maxillary barbel 2x OD; outer mandibular barbel \approx one third of maxillary barbel, inner pair very short, appearing as papillose extensions of lower lip; mouth surrounded by a large, roughly circular lip with papillose patches on surface, thickened anteriorly, with a rectangular medially-divided extension posteriorly; live specimens olive dorsally, with two distinct pale bands, one immediately anterior to, and one posterior to D adipose, a third narrow band anterior to D, body dark with small lighter spots, a pale mid-lateral stripe; ventral surface whitish; fins colourless except for a dark streak along anterior edge of D, one across A, and one transversely across lower lobe of C; dorsal surface, head, and part of D adipose covered with minute protuberances which appear white in preserved specimens.

CLASS: OSTEICHTHYES
 ORDER: SILURIFORMES
 FAMILY MOCHOKIDAE - Squeakers and Suckermouths

Mochokus niloticus De Joannis, 1835

Dwarf Nile catfish



(Photo credit: Thomas R. Vigliotta, Cornell University Museum of Vertebrates Catalogue number CU 91386. Scale bar 1cm.)

DISTRIBUTION AND NOTES:

Lake Turkana system.

Rhinoglanis vannutellii Vinciguerra 1898 is a current synonym.

DESCRIPTION:

Maximum known length 6.5 cm TL. D I, 7-8, i, 9-14, origin closer to snout tip than C base, spines equal to HL, finely serrated anteriorly; a series of three or four small bony scutes, ankylosed to interneural bone, on each side of soft part of rayed D; D adipose preceded by a few fulcra-like bony scutes, \approx equal to distance from rayed D; A 9-10; P1 spine equal to D spine, finely serrated on anterior edge, with 7 (in juvenile) to 14 (in adult) strongly-developed antrorse serrae along posterior edge, sometimes reaching P2 base; P2 equidistant from snout tip and C base, not reaching A; C deeply emarginate, upper lobe longer; head depressed, slightly longer than wide; eye supero-lateral; barbels long and slender, maxillary reaching posterior third of P1 spine, sometimes extending beyond P2 base; mandibular barbel short with few, simple, slender branches; live specimens pale yellowish or greyish-olive dorsally with a relatively regular dark band beneath each D, speckled and marbled with black markings laterally, whitish ventrally; D and C yellowish, dotted or spotted with blackish pigmentation.

CLASS: OSTEICHTHYES
 ORDER: SILURIFORMES
 FAMILY MOCHOKIDAE - Squeakers and Suckermouths

Synodontis afrofisheri Hilgendorf, 1888

Marbled Victoria squeaker
 "Okoko" (DhoLuo, Lake Victoria)



(Photo Source: KMFRI)



(Photo credit: Denis Tweddle/SAIAB 65057)

DISTRIBUTION AND NOTES:

Occurs throughout lakes Sare and Victoria (e.g. Homa Bay), including rivers flowing into the Winam Gulf. Records from the Tana and Athi systems appear to be misidentifications of *S. serpentis* Whitehead 1962.

The name *S. afrofisheri* has sometimes been misspelled '*S. Afro-Fischeri*', but this is not in accordance with the International Code of Zoological Nomenclature (1985). The misspelling 'afrofisheri' has also appeared in the literature on occasion.

DESCRIPTION:

Maximum known length 18.0 cm TL. D I, 7, spine robust, almost equal to HL, striated, with 11 retrorse serrae posteriorly; D adipose base long; A iii-iv, 7-8; P1 spine very robust, equal in length to D spine, striated, with 31-33 well-developed teeth on anterior edge and 11 retrorse teeth on posterior edge; P2 not reaching A; C deeply notched, cres-

centic; body compressed; head slightly longer than wide, granulated dorsally, granulate area extending onto snout to midway between nostril and eye; snout rounded, slightly shorter than postocular portion of head; interorbital region slightly convex; eye supero-lateral; lips moderately developed; maxillary barbel simple, with or without a visible trace of marginal membrane, extending to P1 spine; maxillary barbel almost reaching P2 origin in some specimens, to posterior tip of humeral process in others; mandibular barbels with slender branches, longer in outer pair; anterior mandibular barbels inserted on a straight transverse line, with slender simple branches; gill opening not extending anteriorly beyond P1 base; nuchal shield convex, not keeled, rugose and pitted, terminating in two sharp points, extending slightly beyond D origin; humeral process covered by granular asperities, sharply pointed, not extending to occipito-nuchal shield; anterior portion of body with villose skin; live specimens dark brown dorsally and ventrally with some extremely variable, lighter, yellowish-brown marblings or wavy cross-bands and round blackish spots; uniformly brown individuals also occur; fins dark grey, with transverse series of blackish spots having a tendency to form cross-bars.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY MOCHOKIDAE - Squeakers and Suckermouths

Synodontis frontosus Vaillant, 1895

Sudan squeaker
“Lour kasicou” (Turkana, Lake Turkana); “Pua” (El Molo, Lake Turkana)



(NMK FW 1926/1)

DISTRIBUTION AND NOTES:

Lake Turkana system. According to Hopson & Hopson (1982) this species is now principally riverine with contemporary ecological and hydrological changes inhibiting its incursions into the lake.

S. citernii Vinciguerra 1898 is a junior synonym.

DESCRIPTION:

Maximum known length 34.5 cm TL. D I, 7, spine weakly curved, smooth anteriorly, strongly serrated posteriorly; D adipose large; A iv, 8-9, acutely pointed anteriorly; P1 spine \approx equal to D, not reaching P2, anterior edge distinctly serrated in juvenile, smooth or weakly serrated in adult, posterior edge strongly serrated; P1 smooth anteriorly in individuals > 20 cm in length, serrated in smaller specimens; P2 acutely pointed, often pronounced into a short filament, reaching or extending beyond A base; C deeply forked, crescentic, upper lobe longer; head rugose dorsally, rugosities extending variably onto snout; snout rounded, of equal length as postocular portion of head; eye supero-lateral; occiput simply convex; lips moderately developed; maxillary barbel with a narrow but distinct marginal membrane on its proximal quarter, reaching P1 spine, usually reaching posterior tip of humeral process; outer mandibular barbel with long, slender branches, inner mandibular barbel with tubercular ramifications; occipito-nuchal shield rough in texture, obtusely tectiform, with pointed or truncate posterior processes; humeral process flat or with an obtuse keel, sharply pointed; live specimens grey-brown to blackish-olive, peppered with small black spots dorsally and ventrally, lips whitish; adult uniform or with minute black speckles, juvenile with larger black spots on body and D, with some whitish markings at C base.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY MOCHOKIDAE - Squeakers and Suckermouths

Synodontis geledensis Günther, 1896

Geledi squeaker



(Photo credit: Mark Smith)

DISTRIBUTION AND NOTES:

Northern Ewaso Nyiro, e.g., near Lorian Swamps.

DESCRIPTION:

Maximum known length 30.7 cm TL. D I, 7, spine almost straight, strongly serrated anteriorly, smooth posteriorly; humeral spines relatively short, longer than wide, terminating in a sharp point; D spine shorter than P1 spine; P1 spine strongly serrated anteriorly and posteriorly; D, P1, and C lobes with filamentous extensions; D adipose base long, interspace between it and rayed D < rayed D base; A i-iv, 8-9, obtusely pointed anteriorly; P1 reaching P2, latter not reaching A; C deeply forked; general body form elongate; snout pronounced, subconical; gill opening extending ventrally, terminating anterior to P1 base; maxillary barbel extending to tip of humeral spine, a broad marginal membrane at base, reaching or extending beyond P2, adorned with numerous long fringes; nuchal carapace tectiform, obtusely rounded posteriorly, extending to below anterior soft D ray; outer mandibular barbel \approx 2x longer than inner, former with long slender branches, latter with shorter ramified branches; occipito-nuchal shield rough with a blunt keel, squarely truncate posteriorly; humeral process much longer than wide with weak keel, rugose, acutely pointed, extending posteriorly to occipito-nuchal process; skin strongly villose on flanks; live specimens with uniform coloration, brownish dorsally, whitish ventrally.

CLASS: OSTEICHTHYES
 ORDER: SILURIFORMES
 FAMILY MOCHOKIDAE - Squeakers and Suckermouths

Synodontis manni De Vos, 2001

Feather barbelled squeaker
 "Njigu" (Pokomo, Lower Tana)



(Holotype (NMK FW 600/1))

DISTRIBUTION AND NOTES:

Possibly endemic to the lower Tana river basin, e.g., close to Baomo Village and Wenje area, near Tana River Primate Reserve.

Following Mann (1968), specimens from the Lower Tana River are closely related to *Synodontis clarias* Geoffroy St. Hilaire 1809 from western Africa (see De Vos, 2001b).

DESCRIPTION:

Maximum known length 30 cm TL; D III, 7, spine robust with weak, ventrally oriented serrations on distal half of posterior edge, and similar dorsally-oriented serrations on proximal 2/3 of anterior edge, base relatively short, superior margin weakly concave; D adipose well developed, moderately deep, well separated from rayed D, extending from above vent to posterior A ray; A I, 8, posterior margin straight vertical or slightly convex; C deeply forked, lobes pointed; P1 III, 8, spine robust, small serrations on anterior edge, absent distally, larger serrations on posterior edge; P2 reaching A origin; body elongate, fusiform, dorsal and ventral surfaces relatively straight, deepest close to D origin, an oblique line of sensory organs along midline, extending posteriorly to A base; head relatively narrow, dorsal profile very gently curved from upper lip to occiput; predorsal hump discrete; humeral process large, triangular, flat, granulate, extending posteriorly to nuchal occipital; skull strongly ossified and granulate; eye lateral, moderately sized, proportionally larger in small individuals; gill opening situated laterally above P1 base; snout long, rounded; mouth with distinctive horseshoe-shaped appearance in ventral view, with prominent lateral lobes; upper lip with distinct rostral flap, anteriorly with unlobed ventral margin; mouth inferior, large; barbels moderately developed, maxillary barbel

sometimes reaching P1 base, a distinct marginal membrane at base, up to 9 well-developed, thin, tuberculate branches on anterior edge; mandibular barbel with long tuberculate ramifications; live adult specimens light brown dorsally, whitish ventrally, fins greyish except C brownish; juveniles brownish with irregular, broad, white branching streaks on flanks, fins pale yellowish; preserved adults uniformly brown dorsally and laterally, pale ventrally, fins light brown.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY MOCHOKIDAE - Squeakers and Suckermouths

Synodontis schall (Schneider in Bloch & Schneider, 1801)

Nile squeaker

“Tirr” (Turkana, Lake Turkana); “Tikir” (El Molo, Lake Turkana); “Kikorokoro” (Giriama, Tana River)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Known with certainty from Lake Turkana, e.g. Ferguson’s Gulf, and the Northern Ewaso Nyiro drainage. Records from the Athi and Tana Rivers (Copley, 1952; 1958; Mann, 1968) are misidentifications which probably refer to the putatively endemic *Synodontis zanzibaricus* Peters 1868.

S. smithii Günther 1896 is a junior synonym.

DESCRIPTION:

Maximum known length 43.0 cm TL. D I, 6-7, spine straight or curved, striated, sharp or very finely granulate anteriorly, weakly serrated posteriorly; A iv, 8-9, obtusely pointed anteriorly; P1 spine granulate anteriorly, strongly serrated posteriorly, \approx equal to D length, rarely reaching P2 base; P2 rarely reaching A; C deeply forked, upper lobe longer, sometimes pronounced into a filament; head slightly broader than deep, rugose posterior to snout; snout rounded, \approx equal to length of postocular portion of head; eye supero-lateral; lips moderately developed; maxillary barbel with narrow margin membrane at base, extending between base and posterior fifth of P1 spine; outer mandibular barbel \approx 2x longer than inner, with long, slender branches; inner mandibular barbel with more robust branches and tubercular ramifications; gill opening not extending ventrally beyond P1 base; humeral process slender, obtusely keeled, keel sometimes indistinct, sharply pointed, usually extending posteriorly to occipito-nuchal process; skin variably villose on flanks; live specimens grey-brown or olive dorsally, whitish or creamy ventrally; adult uniform, paired fins and A sometimes blackish; subadult with numerous irregular dark dots on body; juvenile marbled or pale and spotted with oblique yellowish patterning, 2-3 yellowish streaks on snout.

CLASS: OSTEICHTHYES
 ORDER: SILURIFORMES
 FAMILY MOCHOKIDAE - Squeakers and Suckermouths

Synodontis serpentis Whitehead, 1962

Tana squeaker
 “Ningo wa yuvu” (Pokomo, Lower Tana); “Kikorokoro” (Giriama, Lower Tana)



(Photo Source: Luc de Vos/NMK)

DISTRIBUTION AND NOTES:

Galana-Sabaki and Lower Tana River systems, e.g. at Garsen.

DESCRIPTION:

Maximum known length 12.5 cm TL. D I, 7, spine straight or weakly curved, smooth anteriorly, serrated posteriorly; D adipose not greatly developed; A III-IV, 9-10, sharply rounded; P1 spine finely serrated anteriorly, strongly serrated posteriorly; P2 almost reaching A base; C deeply forked; dorsal surface of head granulate; eye superolateral; snout rounded; maxillary barbel with lateral membrane on basal portion, barbel reaching \approx midway along P1 spine, inner and outer mandibular barbels with short tubular branches, inner barbel \approx half length of outer; gill opening not extending beyond P1 base; humeral process pointed at tip, keeled, extending to or just beyond tip of occipito-nuchal shield; live specimens mottled or marbled olive dorsally, whitish to yellowish ventrally, irregular black spots often fused into larger blotches or lines covering body; head olive with smaller black spots extending onto humeral process; all fins olive with 2-3 rows of black spots; live juvenile with a distinct yellow or white vertical bar immediately anterior to D adipose, another on CP, a thinner thin bar anterior to D, bars usually edged with black or dark olive resulting in a marbled appearance; preserved specimens grey dorsally, whitish ventrally, black markings as in live individuals.

CLASS: OSTEICHTHYES
 ORDER: SILURIFORMES
 FAMILY MOCHOKIDAE - Squeakers and Suckermouths

Synodontis victoriae Boulenger, 1906

Lake Victoria squeaker
 "Okoko" (DhoLuo, Lake Victoria)



(Photo Source: KMFRI)



(Photo credit: Denis Tweddle/SAIAB 65058)

DISTRIBUTION AND NOTES:

Occurs throughout Lakes Sare and Victoria, including rivers flowing into the Winam Gulf. Records of *S. victoriae* from the Tana River (Copley, 1941; Mann, 1966; 1968) are misidentifications and probably refer to *S. zanzibaricus*.

DESCRIPTION:

Maximum known length 35.1 cm SL. D I, 6-7, spine strong, straight, smooth anteriorly, with 8 very small serrae posteriorly; A III-IV, 8; P1 spine moderately serrated on anterior edge in smaller individuals, less so in larger specimens, strongly serrated posteriorly at all ages; P1 spine < HL, not reaching P2; P2 not reaching A; C deeply notched, crescentic, upper lobe longer; head granulated dorsally, interorbital region slightly concave, occipital region convex; occipito-nuchal shield simply convex rugose, pitted, ending in two blunt points, not keeled, extending slightly beyond D origin; gill opening not extending beyond P1 base; snout smooth, rounded; humeral process covered with granular asperities, 1.5x as long as broad, pointed, not extending to occipito-nuchal shield posteriorly; skin smooth; eye supero-late-

ral; lips moderately developed; maxillary barbel simple, a narrow marginal membrane at base, extending to P1 origin, occasionally beyond humeral process; mandibular barbel with slender simple branches, outer 2x longer than inner, \approx half HL; live specimens greyish-silver or brown dorsally and laterally, with variably-sized, rounded, dark spots (indistinct in some specimens), whitish ventrally; iris pure white; C occasionally spotted.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY MOCHOKIDAE - Squeakers and Suckermouths

Synodontis zanzibaricus Peters, 1868

East coast squeaker

“Ingorongo” (Samburu, North Ewaso Nyiro); “Ningo” (Pokomo, Lower Tana);
“Kikorokoro” (Giriama, Lower Tana)



(NMK FW 1423)

DISTRIBUTION AND NOTES:

Pangani, lower Athi (Galana-Sabaki), lower Tana (e.g. at Garsen), and Northern Ewaso Nyiro river basins.

Taxonomic status uncertain; *Synodontis punctulatus* Günther 1894 and *S. leopardus* Pfeffer 1894, reported from Tanzania and Somalia, might be synonymous with this species (Seegers 1996). Specimens from the Tana and Northern Ewaso Nyiro Rivers were misidentified as *S. zambezensis* Peters 1852 by Whitehead (1959, 1962) and Mann (1966, 1968).

DESCRIPTION:

Maximum known length 31.1 cm TL. D I, 7, spine equal in length to P1 spine, both weakly serrated anteriorly; distance between rayed D and D adipose > D length; C deeply forked, lobes pointed in juvenile, acute in adult; A iii, 10; gill opening extending ventrally, terminating anterior to P1 origin; nuchal carapace with sharp posterior processes, not extending to D spine, not greatly arched; humeral process pointed posteriorly; maxillary barbel not fringed, mandibular barbels with long filamentous branches, outer barbel < HL; live specimens with numerous small brown dots on head, body and D adipose, becoming larger in posterior portion of body but never exceeding pupil diameter.

CLASS: OSTEICHTHYES
ORDER: SILURIFORMES
FAMILY MOCHOKIDAE - Squeakers and Suckermouths

Synodontis spec. "Lower Tana"

Ocellated Tana squeaker



(NMK FW 1372/1)

DISTRIBUTION AND NOTE:

Lower Tana drainage. A single specimen of this unidentified *Synodontis* species was collected by S. Engelhardt and exported to Germany. Live individuals may have large rounded blackish spots on an olive-brown base.

DESCRIPTION:

Maximum known length 10 cm TL.

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: SALMONIFORMES
FAMILY SALMONIFORMES - Trouts

Oncorhynchus mykiss Walbaum, 1792

Rainbow trout



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Non-native species. Well established and self-sustaining in streams throughout the Aberdare, Mount Kenya and Mount Elgon ranges.

First introduced to upper reaches of the Athi and Tana Rivers from South Africa and the United Kingdom around 1910 for angling and aquaculture. It is naturally widespread in Pacific drainages of Northern Asia and North America. Also reported from Kenya under the currently synonymous names *Salmo irideus* Gibbons 1855, and *S. gairdneri* Richardson 1936, plus the old binomen *Parasalmo mykiss* (Walbaum 1792).

DESCRIPTION:

Maximum known length 120.0 cm TL; D iv, 10-12, origin \approx at midbody; D adipose small, lobate; A iii, 8-12; C forked; scales very small; body streamlined; head rounded; mouth terminal, extending to posterior margin of orbit when closed; lower jaw of mature male enlarged, hooked; live specimens silver or light golden with small black spots; D and C with black spots, D adipose with spots and distal margin; a broad lilac-mauve iridescent band extending from head to C; older male individuals tend to darken; juvenile with around 10 broad dark grey vertical bars (parr marks) along the body.

CLASS: OSTEICHTHYES
ORDER: SALMONIFORMES
FAMILY SALMONIFORMES - Trouts

Salmo trutta Linnaeus, 1758

Brown trout



(Photo credit: Bernt René Voss Grimm)

DISTRIBUTION AND NOTES:

Non-native species. Well established and breeding in a handful of streams of the Aberdare and Mount Kenya ranges, plus the Maron River in the Cherangani Hills.

Introduced from the United Kingdom for sport fishing, e.g., into affluents of the upper Athi and Tana Rivers, since around 1910, but now largely replaced by *Oncorhynchus mykiss*. Its native range covers Europe and western Asia, plus the Atlas Mountains in North Africa.

DESCRIPTION:

Maximum known length 120.0 cm TL; D iv, 9-11; A iii, 7-10; C deeply notched in juvenile, truncate or weakly notched in adult; relatively small fins including lobate D adipose; 95-128 LL scales; scales very small; body streamlined; mouth large; jaws extend posterior to orbit when closed; lower jaw of mature male enlarged, hooked; maxillary extending to below posterior third of eye in adult, to below or slightly beyond posterior border of eye in juvenile; eyes moderately sized; gill opening large; colour pattern in live specimens varies with age and water conditions but general features are large brown and red spots on flanks and dorsal surface of head and body, or olive-brown dorsally, shading to golden yellow-white ventrally; small black and red spots on dorsum and flanks, sometimes encircled with whitish or bluish; a large round black spot on operculum; D and A spotted with dark and light anterior margins; C largely without spots except on upper and lower rays; ground colour varies from silvery brown to yellowish; mature male individuals tend to darken in colour; a series of 9 to 12 vertically oval, large, blackish spots on each flank in juvenile, traces of these usually persisting in adult; young specimens less spotted and more silvery, with a series of dark grey vertical bars (parr marks) on body.

CLASS: OSTEICHTHYES
ORDER: SALMONIFORMES
FAMILY SALMONIFORMES - Trouts

?*Salvelinus fontinalis* (Mitchill, 1814)

Brook trout, American brook charr, American brook trout, Speckled trout



(Photo credit: Erwin Schraml)

DISTRIBUTION AND NOTES:

Native to Northeastern North America, but according to Welcomme (1988) was introduced to Kenya from the United Kingdom in 1969 in the hope that it would breed in endorheic lakes. Copley (1953) mentions introduction of the species from the United Kingdom in 1949, but reports that it did not become established in Lake Höhnel on Mount Kenya. It is unlikely that this species still survives in Kenya.

DESCRIPTION:

Maximum known length 86.0 cm SL. D iii, 9-10, short; A iii, 7-9, short; C emarginate to truncate; scales minute, giving leathery appearance; lateral line distinct, straight; body streamlined, fusiform; head with moderately large eye; mouth terminal, upper jaw extending beyond posterior margin of orbit when closed; lower jaw of mature male enlarged, hooked; colour in live specimens variable, dark olive brown to reddish brown to mauve; flanks with scattered red spots surrounded by bluish pigmentation; D with dark brown-black spots.

CLASS: OSTEICHTHYES
 ORDER: CYPRINODONTIFORMES
 FAMILY APLOCHEILICHTHYIDAE - Top minnows or Lampeyes

Aplocheilichthys bukobanus (Ahl, 1924)

Lake Victoria lampeye
 "Mande" (DhoLou, Lake Kanyaboli)



(Photo credit: Martin Grimm)



(Photocredit: Denis Tweddle/SAIAB 57055)

DISTRIBUTION AND NOTES:

Lake Victoria drainage, including the Lake Kanyaboli catchment. Inhabits swamps, rice fields, ditches and shallow zones in and around the lakes, e.g. Ahero, Kaloleni, southeast Kisumu, Homa Bay.

Parenti (1981) moved this species into the monotypic genus *Cynopanchax*, while Huber (1999) proposed the name *Lacustricola bukobanus* for it. *A. meyburgi* Meinken 1971 and *Micropanchax ericae* Meinken 1971 are junior synonyms. Records from Lake Victoria under the names *Haplochilus pumilus* Boulenger 1906 or *Aplocheilichthys pumilus* (Boulenger 1906) are misidentifications.

DESCRIPTION:

Maximum known length 5.0 cm TL. D 10-11, origin close to C base, distance between D origin and centre of eye 2x that between D and C base; A 14-16, origin equidistant from eye and C base; P1 reaching 2; C rounded; 24-29 LL scales; snout broad, rounded; OD < postorbital length; preserved specimens dark dorsally, brown ventrally, a broad dark longitudinal stripe extending from operculum to C base (may be steel blue in life); all fins blackish.

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY APLOCHEILICHTHYIDAE - Top minnows or Lampeyes

Aplocheilichthys rudolfianus (Worthington, 1932)

Turkana lampeye



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Endemic to the Lake Turkana basin, e.g., Loyangani on the eastern shore.

Originally described as *Haplochilichthys rudolfianus* (Worthington 1932), and has also been referred to the genera *Aplocheilichthys* and *Micropanchax* in the past.

DESCRIPTION:

Maximum known length 3.5 cm TL. D 8, origin above centre of A, 2x more distant from snout tip than C; A 14-15; P1 extending to P2 base; P1 \approx half HL, closer to snout tip than C base; C subtruncate, > HL; 28-29 LL scales; head flattened dorsally; snout very short; mouth superior, lower jaw projecting; interorbital width < postorbital length; live specimens yellow dorsally, pale ventrally, scales finely edged with black pigmentation; fins colourless.

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY APLOCHEILICHTHYIDAE - Top minnows or Lampeyes

Aplocheilichthys spec. "Baringo"

Baringo lampeye



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Lake Baringo drainage, where it is possibly endemic to the southern tributary of the lake.

The taxonomic status of this species is uncertain. It appears to be closely-related to *Aplocheilichthys maculatus* Klausewitz 1957, described from the coastal area around Dar es Salaam in eastern Tanzania, and was referred to as *A. aff. maculatus* by Wildekamp (1995). It is listed under the name *Aplocheilichthys loati* (Boulenger 1901) in the BMNH (BMNH 1979.1.12: 4-28). According to Ruud Wildekamp (pers. com.) it is a member of the genus *Lacustricola*, although some current sources include it in *Micropanchax*.

The natural population is apparently declining and might be under threat of extinction due to competition with non-native *Poecilia reticulata*.

DESCRIPTION:

Maximum known length 4.0 cm TL.

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY APLOCHEILICHTHYIDAE - Top minnows or Lampeyes

Aplocheilichthys spec. "Naivasha"

Naivasha lampeye

(Specimen: (BMNH 1924.8.25:1-10) at BMNH, London)

DISTRIBUTION AND NOTES:

Known only from Lake Naivasha, but apparently extinct since the 1970s or 1980s due to competition or predation by introduced fishes.

Has been reported under the names *Haplochilichthys antinorii* and *Aplocheilichthys antinorii* (Vinciguerra, 1883), but is not conspecific with this taxon. Worthington (1932) reported two different morphotypes from Lake Naivasha; a "normal" form found in shallow weedy margins and a pelagic morph occurring at depths of 6-19 metres.

DESCRIPTION:

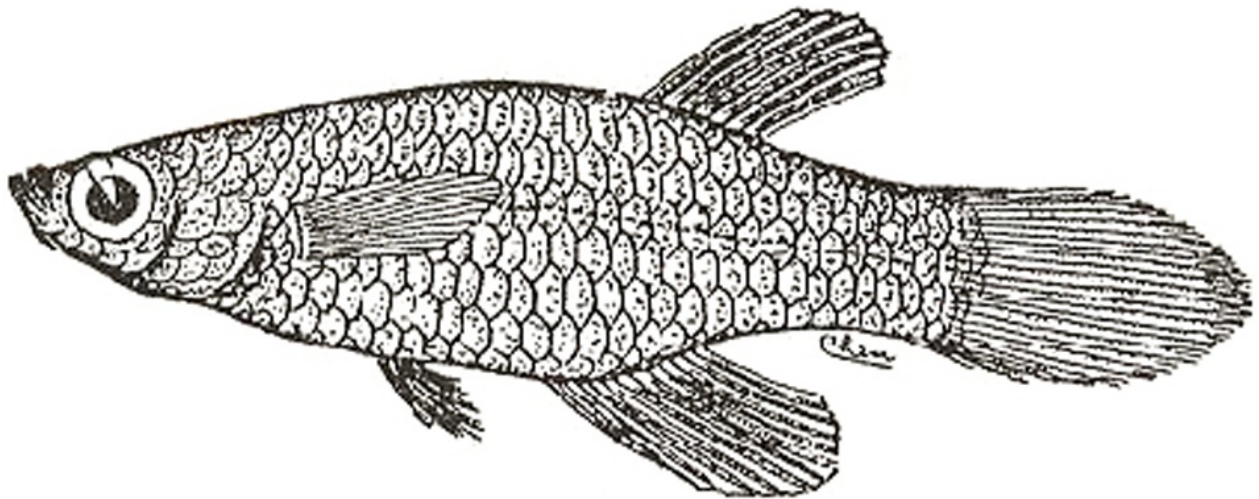
Maximum known length 3.0 cm TL.

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY APLOCHEILICHTHYIDAE - Top minnows or Lampeyes

Lacustricola jeanneli (Pellegrin, 1935)

Omo lampeye



(After Pellegrin, 1935; specimens: (BMNH 1981.2.17: 2272-2275) at BMNH, London)

DISTRIBUTION AND NOTES:

Endemic to the Lake Turkana basin, e.g. Ferguson's Gulf.

Originally described as *Haplochilichthys jeanneli* Pellegrin 1935, and has also been referred to the genus *Aplocheilichthys* in the past.

DESCRIPTION:

Maximum known length 3.5 cm TL. D 8-9, origin above centre of A, 2x closer to C base than snout tip; A 12-13; P1 12, origin high on body, almost reaching A; P2 6, origin \approx beneath centre of P1, noticeably closer to snout tip than C base; C rounded; 25-26 LL scales, no visible pores; head flattened dorsally; OD fits 2.5-3x in HL; mouth slightly superior, lower jaw prominent; live specimens yellowish, each scale rimmed with black pigmentation; lateral line narrow, black; fins greyish; dorsal fin with blackish margin.

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY APLOCHEILICHTHYIDAE - Top minnows or Lampeyes

?*Micropanchax loati* Boulenger, 1901



(Photo credit: Stefano Valdesalici)

DISTRIBUTION AND NOTES:

Occurs in the Sio River near Busia.

Possibly conspecific with the unidentified taxon *Micropanchax* spec. "Sio" collected around the Uganda border region.

DESCRIPTION:

Maximum known length 2.5 cm TL. D 7-8, base above posterior third of A, 2x more distant from eye than C base; A 14-15; P1 extending to P2 base, P2 small, \approx equidistant from snout tip and C base; C rounded; 25-26 LL scales; OD > snout length, equal to postorbital length; live specimens yellowish olive with dark-edged scales dorsally, whitish ventrally; lateral stripe narrow, blackish, usually present; fins whitish, without markings.

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY APLOCHEILICHTHYIDAE - Top minnows or Lampeyes

Pantanodon stuhlmanni (Ahl, 1924)

Eastcoast lampeye



(Photo credit: Finn Milvertz)

DISTRIBUTION AND NOTES:

Lower reaches of rivers and brooks of eastern coastal drainages, including salt pans. Also collected at Koreni.

Pantanodon podoxys Myers 1955 is a junior synonym according to Seegers (1996). Originally described as *Haplochilichthys stuhlmanni* Ahl 1924, and has also been included in the genus *Aplocheilichthys*.

DESCRIPTION:

Maximum known length 6.0 cm TL. D 6-7, D entirely posterior to A; A 20, a deep "pocket" beside it; P1 origin high on body, anterior ventral rays spinous; 30 LL scales; operculum squamated in male; snout broad; eye very large, OD fits 3.5x in HL; mouth superior; preserved specimens light yellow with a narrow steel blue lateral stripe on body.

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY POECILIIDAE - Livebearers

Gambusia holbrooki (Girard, 1859)

Eastern mosquito fish



(Photo credit: Daniel Konn-Vetterlein)

DISTRIBUTION AND NOTES:

Probably introduced into tributaries of the Lake Victoria drainage for mosquito control in the early 1960s (Mann, 1966), and since recorded from the Sondu-Miriwu, Athi and Tana river systems. May also be present in Lake Naivasha where Muchiri & Hickley (1991) reported the establishment of a *Gambusia* sp. (presumably *G. holbrooki*). Reported as *G. affinis* (Baird & Girard 1853) from the Sondu-Miriwu River system by Mugo & Tweddle (1999). Native range is drainages of the Atlantic coast in North America and peninsular Florida, as far west as Alabama state.

DESCRIPTION:

Maximum known length 3.5 cm TL (male), 6.0 cm TL (female). D 6-8; A 9-10; C rounded; CP elongate, more pronounced in male; male slender with prominent gonopodium, female with deep, rounded abdomen; A short; 29-30 LL scales; head flattened dorsally; mouth superior; live specimens plain translucent light brown, sometimes with small black spots and iridescent blue reflections; operculum metallic silvery gold; abdomen silvery; fins clear or lightly marked with dusky spots; a black region above vent typical in gravid female.

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY POECILIIDAE - Livebearers

Poecilia reticulata (Peters, 1859)

Guppy, Millions fish



(Photo credit: Chen Hung-Jou)

DISTRIBUTION AND NOTES:

Introduced throughout much of Kenya. Present in the Athi (e.g. at Kibwezi: Whitehead, 1959; at Athi River town: See-
gers, 1987), Tana (e.g. Golbanti area: Whitehead, 1959), upper Pangani, and Northern Ewaso Nyiro (e.g. springs at
Shaba Lodge, Shaba National Reserve) river systems, plus Lake Naivasha.

DESCRIPTION:

Maximum known length 3.5 cm TL (male), 6.0 cm LT (female). D 7-8; A 8-9; both sexes with elongate CP and variable C
morphology; 26-28 LL scales; female with rounded abdomen, male slender with well developed gonopodium; colour
pattern in live specimens extremely variable, often spectacular, with combinations of iridescent red, blue, turquoise
and yellow; black spots and stripes often present; gravid females typically with a dark region above vent.

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY APLOCHEILIDAE - Aplocheilid killifishes

Nothobranchius bojiensis Wildekamp & Haas, 1992

Boji Plains nothobranch



(Photo credit: Béla Nagy)

DISTRIBUTION AND NOTES:

Endemic to the Northern Ewaso Nyiro drainage where it is found in seasonal waters of the Boji Plains, north of northeast of Merti, plus the Habaswein, Fundisa Kibaoni, Gongoni, Tana and Mwatsuma tributary drainages (Nagy, 2010).

DESCRIPTION:

Maximum known length 5.5 cm. TL. D 18-20; A 19-22; D and A rounded in male, tips of rays projecting from membrane; papillae present on posterior D rays and all A rays in male; proximal portions of D and A covered with epidermal tissue; D rounded in female; C slightly truncate; free end of brachial membrane wrinkled in male; A pointed, rays 4-12 long and ridged, branched near tip; 39-44 LL scales; body scales generally small and irregularly set; ctenii present on scales near P1 base, lower part of operculum and above A in male; anterior portion of head scaleless; preoperculum, operculum and cheek with numerous very small scales; mouth wide, superior, maxilla almost extending to anterior rim of pupil; branchiostegal membrane projecting beyond operculum; neuromast system present; body in male robust, female smaller; in live specimens D reddish brown, paler with red-brown spots basally, darker distally; A red-brown, pale basally, dark red-brown distally, no visible markings; C uniformly red-brown, lighter than distal portions of D and A; P2 dark red-brown, darker distally; branchiostegal membrane pale brownish; preserved male pale red-brown, lighter ventrally, irregular, dark reddish-brown vertical bars on posterior portion of body; preserved female light yellowish brown, some short reddish-brown vertical bars may be present on posterior portion of body; all fins whitish, hyaline.

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY APLOCHEILIDAE - Aplocheilid killifishes

Nothobranchius elongatus Wildekamp, 1982

Elongate nothobranch



(Photo credit: Béla Nagy)

DISTRIBUTION AND NOTES:

Seasonal waters of southeastern coastal drainages northwest of Mombasa, close to Kaloleni, Mariakani, Mwatsuma, and Matope.

DESCRIPTION:

Maximum known length 5.5 cm TL. D 15-16; A 16-18; hook-like papillae on D and A; 30-32 LL scales; D and A origins \approx equidistant from snout; A and C rounded; live male light blue dorsally, silver to bright blue in anterior portion of body; each scale with reddish-orange outline forming net-like pattern on body, tips of fin rays white, bases red; D olive yellow with reddish-brown spots and lines; P1 and P2 yellowish with white margins; female uniform, greyish-brown dorsally, whitish ventrally; scale margins reddish-brown; preserved specimens greyish-blue dorsally, yellowish-white ventrally, each scale with orange outline, forming faint net-like pattern on body; C orange-yellow; P2 faint grey; P1 orange.

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY APLOCHEILIDAE - Aplocheilid killifishes

Nothobranchius aff. *fasciatus*? Nagy, 2009

Banded Somali nothobranch



(Photo credit: Béla Nagy)

DISTRIBUTION AND NOTES:

Occur in ephemeral pools in eastern Kenya, e.g. at Mnazini (Nagy, 2009), including temporal river systems which drain the area north of the Kokani flood plain into the Tana River during wet periods.

Taxonomic status unclear.

DESCRIPTION:

Maximum known length 7.0 cm TL.
[Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY APLOCHEILIDAE - Aplocheilid killifishes

Nothobranchius interruptus Wildekamp & Berkenkamp, 1979

Kikambala nothobranch



(Photo credit: Béla Nagy)

DISTRIBUTION AND NOTES:

Seasonal pools and waters of northeastern coastal drainage near Kikambala, about 15 km north of Mombasa.

DESCRIPTION:

Maximum known length 6.6 cm TL. D 14-16; A 14-17; 27-33 LL scales; body depth fits 3x in TL; D and A origins \approx equidistant from snout; A rounded; live specimens similar to *N. jubbi* but with dark, greyish-blue marginal band in C reduced to a series of blotches or entirely absent.

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY APLOCHEILIDAE - Aplocheilid killifishes

Nothobranchius jubbi Wildekamp & Berkenkamp, 1979

Blue nothobranch



(Photo credit: Béla Nagy)

DISTRIBUTION AND NOTES:

Seasonal pools north of Malindi and in the lower Tana drainage, e.g., at Mnazini. A red-tailed form occurs in Musumalini Creek, north of Kongoni on the road to Garsen. A record of *N. guentheri* (Pfeffer 1893) from the Tana River by Mann (1968) most likely represents a misidentification of *N. jubbi* since *N. guentheri* is confined to Zanzibar Island.

N. cyaneus Seegers 1981 is a junior synonym.

DESCRIPTION:

Maximum known length 6.0 cm TL. D 15-19; A 16-20; 29-32 LL scales; live male grey-blue on body, darker dorsally, lighter ventrally, with whitish, dark-edged scales forming a net-like pattern; D grey-blue with numerous dark spots forming irregular bands; A pale grey-blue with several dark spots; CP base and majority of C red, grey-blue in juvenile, with dark grey-blue marginal band, which may be partially or entirely absent in senescent individuals; P1 light brown; P2 colourless with light blue margin; preserved specimens light grey, scales with blue-grey rims, sometimes appearing as small spots; D with several dark spots at base, remaining fins without such markings.

CLASS: OSTEICHTHYES
 ORDER: CYPRINODONTIFORMES
 FAMILY APLOCHEILIDAE - Aplocheilid killifishes

Nothobranchius melanospilus (Pfeffer, 1896)

Black-spotted nothobranch



(Photo credit: Hristo Hristov)

DISTRIBUTION AND NOTES:

Seasonal water bodies of the southeastern coastal zone, from Uмба northwards to the Ramisi drainage.

DESCRIPTION:

Maximum known length 7.0 cm TL. D 14-15, origin closer to C base than occiput, base of anterior ray above anterior 2-3 A rays; A 15-18, below D; P1 reaching or extending beyond P2 origin; P2 small, ≈ equidistant from snout tip and C base, not reaching anterior A rays; C rounded; in male body slightly compressed and moderately deep, all unpaired fins rounded, D and A covered with thin layer of epidermal tissue, ctenii on all D and A rays projecting from epidermis, tips of D and A rays slightly projecting from membrane, opercular membrane slightly projecting from opercle; female smaller, body less compressed, A triangular, positioned more posteriorly, no epidermal tissue covering D, A or ctenii on rays, opercular membrane not projecting from opercle; 29-33 (+ 3-5 on C base) LL scales; snout rounded, short and broad; mouth superior, lower jaw projecting; space between eye and lip very narrow; lip forming an angle fitting into a notch close to eye; anterior supraorbital squamation partly covered with epidermal tissue; dorsal profile slightly concave on head, concave from nape to end of D base; CP profile straight; in live male C red with narrow black distal margin, D and A with narrow white margins, posterior margin of scales red in some specimens, merging into posteriorly orientated chevron-like cross bars; operculum with three oblique red stripes; iris silver; female specimens with irregularly-dispersed black spots on flank and basal portion of unpaired fins, posterior portion of body brownish with black dots; iris silver.

CLASS: OSTEICHTHYES
 ORDER: CYPRINODONTIFORMES
 FAMILY APLOCHEILIDAE - Aplocheilid killifishes

Nothobranchius microlepis (Vinciguerra, 1897)

Small-scaled nothobranch



(Photo credit: Béla Nagy)

DISTRIBUTION AND NOTES:

Seasonal pools of the lower to middle Tana drainage, e.g., pools at Mnazini, or 53 Km north of Garsen on the Garissa road.

DESCRIPTION:

Maximum known length 8.0 cm TL. D 16-20, origin closer to C base than head; A 17-20, below D; P1 reaching or extending beyond P2; 35-42 LL scales; scales generally small and irregularly set posteriorly; anterior portions of head, snout, and chin naked; preoperculum, operculum and cheek with numerous very small scales; head flattened dorsally, as deep as broad; mouth slightly superior, gape wide, maxilla extending to anterior border of pupil; lower jaw projecting; snout moderately long; in older male individuals D and A rounded, tips of rays projecting from epidermal tissue or membrane, proximal half and posterior body scales covered with tissue; prominent papillae present on all A rays; C truncate; body robust, laterally compressed, dorsal profile strongly convex; most individuals with distinctive hump-backed appearance; branchiostegal membrane projecting beyond operculum, free edge wrinkled; in female D rounded, C truncate, A 3-12, long, rigid and pointed, only branched near tips, fin papillae absent, no epidermal tissue on fins or posterior body scales, dorsal profile slightly convex, greatest body depth above P2, branchiostegal membranes projecting slightly from operculum, free end not wrinkled; live specimens with distinctive dark grey to black bar extending from upper part of head over nape and through eye to corner of mouth; live male colour pattern comprising: body uniform pale brownish-blue to grey; D region blue grey becoming darker toward its margin; a marbled pattern of grey brown spots at D base becoming smaller distally; A blue grey without markings but lighter at base; P2 blue grey, becoming very dark to almost black at tip; C blue grey with some small brown spots basally and a distinct narrow black terminal bar; free ends of scales with narrow brown margin; in some specimens 3-4 short, thin, dark grey

bars between P1 and P2; abdomen light grey; projecting part of branchiostegal membrane pink, wrinkled end with a narrow creamy margin; live female: body uniform brownish-grey, sometimes with a light pale blue-green hue; central parts of anterior body scales lighter brown-grey to yellowish; abdomen light grey; no body markings, no eye band; D and C hyaline; A transparent, yellow-brown at base, pale white near tip.

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY APLOCHEILIDAE - Aplocheilid killifishes

Nothobranchius palmqvisti (Lönnberg, 1907)

Pangani nothobranch



(Photo credit: Béla Nagy)

DISTRIBUTION AND NOTES:

Seasonal pools of the southeastern coast, e.g., near Mrima, from Uмба northwards to the Ramisi drainage.

DESCRIPTION:

Maximum known length 5.0 cm TL. D 16, origin closer to C base than snout tip; A 15, origin \approx below D origin; A rays slightly shorter than D rays and with short spines in male; A length almost equal to body depth; P1 reaching P2 base; P2 reaching A base in male; C rounded, squarely truncate; 27-28 LL scales; body compressed posterior to occiput; dorsal surface of head flat and broad, upper contour straight to slightly concave; OD fits 4x in HL; in live male each scale with a carmine red band on posterior margin forming continuous, oblique transverse bands; C bright red, sometimes with a dark marginal band and similarly-coloured spots; D and A with carmine red streaks on rays forming irregular bands; female uniformly yellowish-olive or greenish.

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY APLOCHEILIDAE - Aplocheilid killifishes

Nothobranchius patrizii (Vinciguerra, 1927)

Somali nothobranch



(Photo credit: Béla Nagy)

DISTRIBUTION AND NOTES:

Seasonal ponds of the lower Tana drainage. Msumalini Creek at Gongoni on the road to Garsen is the southern limit of its range (Nagy, 2009).

DESCRIPTION:

Maximum known length 5.0 cm TL. D 16, equidistant between snout tip and C base, anterior to A origin, posterior ray longest; A 15, posterior rays longest, shorter than D; P1 extending beyond D base; C slightly rounded; 25-26 LL scales; body depth in male and female \approx equal; eye in anterior portion of head; head profile slightly concave; mouth superior; premaxillary angular, almost reaching eye; snout in male $>$ OD, in female $<$ OD; interorbital flat; live specimens yellowish with brown transverse bands; vertical fins covered with brown dots.

CLASS: OSTEICHTHYES
 ORDER: CYPRINODONTIFORMES
 FAMILY APLOCHEILIDAE - Aplocheilid killifishes

Nothobranchius robustus Ahl, 1935

Red Victoria nothobranch



(Photo credit: Béla Nagy)

DISTRIBUTION AND NOTES:

Lake Victoria drainage, including the Sio River floodplains near Busia in Western Province, the Nyando River floodplain, and seasonal pools near Ahero. Also known from Namalira in Uganda.

DESCRIPTION:

Maximum known length 5.5 cm TL. D 15-17; A 15-18; D and A large; A rounded in male, triangular in female, tip rounded, no papillae on D and A; D and A covered with a layer of epidermal tissue; fin-ray papillae minute and hardly visible, not projecting from epidermal tissue; 28-33 LL scales; body deep, laterally compressed; mouth slightly superior; preopercular neuromast system set in a distinct groove, distal rim not overlapping operculum; in male branchiostegal membrane projecting from operculum, free margin slightly wrinkled; female smaller than male, branchiostegal membrane not projecting from the operculum; live male: light blue on operculum and anterior portion of flanks; scales with distinct red-brown to red margins, entirely red in posterior portion of body; D, A and C red, purple red or red-brown depending on population, occasionally with narrow black margins; female: uniform yellowish grey-brown on head and flanks; scale margins grey; fins hyaline.

CLASS: OSTEICHTHYES
 ORDER: CYPRINODONTIFORMES
 FAMILY APLOCHEILIDAE - Aplocheilid killifishes

Nothobranchius ugandensis Wildekamp, 1994

Uganda nothobranch



(Photo credit: Béla Nagy)

DISTRIBUTION AND NOTES:

Ephemeral pools of the Sio River flood plain, especially near Busia and in the Lake Victoria drainage Wildekamp (1994). Also known from Kiziba, Uganda.

A record of *Nothobranchius taeniopygus* Hilgendorf 1891 by Wourms (1965) refers to this species.

DESCRIPTION:

Maximum known length 5.2 cm TL. D 15-19, origin slightly anterior to A, about equidistant from eye and C base; A 15-19; 28-33 LL scales; body deep, laterally compressed; dorsal surface of head convex; mouth superior; lower jaw projecting; preopercular neuromast system set in distinct groove, posterior rim overlapping operculum; in male: D and A small, with spine-like tubes; A and C rounded, D and A covered with thin layer of epidermal tissue, rays with distinct papillae, free margins projecting from epidermal tissue; ctenii present on scales of lower operculum and ventral half of posterior portion of body; branchiostegal membrane projecting from operculum, free margin wrinkled; female: smaller than male, A triangular with rounded tip, rays more rigid, only branched near tips; no scale ctenii and no fin ray papillae; branchiostegal membrane slightly projecting from operculum, free margin not wrinkled; in live male: C immaculate, red at base, orange-red distally with narrow black margin, sometimes with yellow sheen anteriorly; two distinct male phenotypes with C yellow or red; in yellow C phenotype: D sky blue, basal half with small, irregular, red-brown spots between rays; A sky blue with a vague, slightly darker mid-band; operculum and flank reflective sky blue; scales with narrow grey-brown margins; no cross bars; lips grey-brown, ventrum pale light blue; throat light blue; in

red C phenotype: D light to sky blue, basal part with irregular red-brown spots between rays; A sky blue to pale yellow, or a combination of both, sometimes narrowly edged in black; operculum and flanks reflective light blue; scales with red margins varying locally in width to form oblique or <-shaped cross bars; lips red, throat light blue; live females do not display phenotypic differentiation: pale grey-brown on flanks, reflective silver anteriorly; flank scales with indistinct grey-brown margin; all fins hyaline, brown, with dark edges; D dark purplish-brown; A and C purplish-brown with whitish central band.

CLASS: OSTEICHTHYES
 ORDER: CYPRINODONTIFORMES
 FAMILY APLOCHEILIDAE - Aplocheilid killifishes

Nothobranchius willerti Wildekamp, 1992

Mnazini nothobranch



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Coastal plains of the lower Tana River system, e.g., near Mnazini.

The type series was collected by Manfred Willert and the species has not been recorded since.

DESCRIPTION:

Maximum known length 4.0 cm TL. D 15-17; A 16, rectangular, tips rounded; D and A rays projecting from membrane, both fins covered with a thin layer of epidermal tissue basally; in male: large and distinct papillae on distal portion of A; 26-28 LL scales; cephalic squamation regular, comprising 10 enlarged scales; ctenii on scales of lower preoperculum only; body slender, laterally compressed with superior mouth; upper lip narrow; all supraorbital neuromast grooves and pits with small lobes; branchiostegal membrane not projecting from operculum; in female: A 4-8, longer and more rigid; A positioned more posteriorly; ctenii absent, no papillae or epidermal tissue on unpaired fins; C longer and narrower; in live male: flank light blue to reflective blue-green; body reddish-brown dorsally, whitish to pale pink ventrally; dorsum and flank scales with red margins, less pronounced on anterior portion of flanks, forming an indistinct V-shaped cross bar pattern on posterior portion of flanks and CP; D light blue to light blue-green with dense pattern of irregular red bands and red margin; C red to orange red, usually with a narrow, semi-transparent dark grey margin; in live female: body and head light yellow-brown, darker dorsally, lighter ventrally; scales on anterior portion of flank with silver centres; scales on posterior portion of flank and CP with a narrow grey margin, partially forming v-shaped cross bar pattern; all fins hyaline.

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY APLOCHEILIDAE - Aplocheilid killifishes

Nothobranchius spec. "Lake Victoria"

Blue Victoria nothobranch



(Photo credit: Ruud Wildekamp)



(Photo credit: Stefano Valdesalici)

DISTRIBUTION AND NOTES:

Inhabits ephemeral water bodies of the River Nyando floodplains, Lake Victoria basin, including seasonal pools between Ahero and Kisumu, e.g. at Odiénya, west of Ahero, and at Kioleni.

DESCRIPTION:

Maximum known length 5.0 cm TL.

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY SYNGNATHIDAE - Pipefishes

Hippichthys spicifer (Rüppell, 1838)

Blue-spotted pipefish, Bellybared pipefish



(Photo credit: John E. Randall)

DISTRIBUTION AND NOTES:

Marine species entering lower reaches of coastal streams, rivers, estuaries, and lagoons, e.g., Lower Sabaki and Jilore basins (Whitehead, 1960).

DESCRIPTION:

Maximum known length 17.5 cm TL. D 23-30, short, origin posterior to vent; A comprising 2 minute rays; P1 15-18; subadults and adults with keeled scutella; eye located 3x OD from snout; operculum with a raised longitudinal keel, an elevated ridge along upper edge of snout, extending to nape; interorbital space concave due to elevated upper margin of orbit, ending posteriorly in a ridge which continues to nape; body compressed, greater in depth than breadth; brood pouch with protective plates beneath posterior portion of body; live specimens variably brownish, mottled or with approximately 15 prominent dark cross-bars ventrally, or with a dark brown streak extending from orbit to angle of mouth, and a second from posterior border of eye across opercle; a few black spots on lower jaw; bars absent or obscured by dark ground colour in some adult specimens; D barred with brown spots, 5-6 sub dorsal bars; C blackish with a light brown base.

CLASS: OSTEICHTHYES
ORDER: CYPRINODONTIFORMES
FAMILY SYNGNATHIDAE - Pipefishes

Microphis fluviatilis (Peters, 1852)

Freshwater pipefish



(Photos source: SAIAB)

DISTRIBUTION AND NOTES:

Marine species entering lower reaches of coastal streams, rivers, estuaries, and lagoons, e.g., Lower Sabaki basin (Whitehead, 1960; Dawson, 1986).

DESCRIPTION:

Maximum known length 21.0 cm TL. D 60-69, long, origin posterior to vent; A 4; P1 15-20; 14-16 bands below D and another at midbody; 'tail' length \approx equal to trunk length; male with abdominal brood-pouch, without protective membranous folds; live specimens bluish-green to yellowish-brown with fine black streaks.

CLASS: OSTEICHTHYES
 ORDER: SYNBRANCHIFORMES
 FAMILY MASTACEMBELIDAE - Spiny Eels

Mastacembelus frenatus (Boulenger, 1901)

Longtail spiny eel
 "Okunga" (DhoLuo, Lake Victoria)



(Photo credit: Suephoto)

DISTRIBUTION AND NOTES:

Rivers and swamps of the Lake Victoria catchment basin, and throughout the lake itself. Collected from the Tana River, and records by Copley (1952) from the Athi River system might refer to this species.

Also reported under the generic names *Afromastacembelus*, *Aethiomastacembelus*, and *Caecomastacembelus*. *Mastacembelus victoriae* Boulenger 1903 is a junior synonym, although taxonomic status of mastacembelids from the Athi River drainage requires investigation.

DESCRIPTION:

Maximum known length 33.0 cm TL. D XXVII-XXXV, 64-85; A II, 66-90, anterior spine often deeply embedded in a fold of skin; D and A long, confluent with C; P2 absent; scales very small, cycloid; body slender, elongate, eel-like; head and tail pointed; snout pronounced as a fleshy, trilobed appendage; lips large, fleshy; mouth not protractile, cleft of mouth extending to below anterior border of eye and nostril; anterior nostril forming a short tentacle; vent equidistant between snout tip and C base; colour pattern in live specimens extremely variable with dark brown marbling dorsally, yellowish ventrally, small light spots laterally; head pale brown, spotted or marbled with an irregular dark lateral band passing through eye; a series of large, round, dark brown spots may be present along lower margin of C; some specimens with reticulated pattern, more intense on C where it may form ocelli; two brown bars across C; certain elements of colour pattern may be influenced by environmental conditions, e.g., brown base-colour varies from dark chocolate, almost black in some cases, to a bright, orangey-brown.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY LATIDAE - Nile perches and relatives

Lates longispinis Worthington, 1932

Turkana perch, Golden perch
“Iji” (Turkana, Lake Turkana); “Jinte” (El Molo, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Endemic to Lake Turkana and originally described as the subspecies *Lates niloticus longispinis* Worthington 1932, before being raised to full species level by Greenwood (1976).

DESCRIPTION:

Maximum known length 27.5 cm TL; third D spine very long; 65-71 LL scales in mid-lateral series; eye large; maxillary extending to below posterior margin of eye in some specimens.

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY LATIDAE - Nile perches and relatives

Lates niloticus (Linnaeus, 1758)

Nile perch

“Iji”, “Idji” (Turkana, Lake Turkana); “Jinte” (El Molo, Lake Turkana); “Mbuta” (DhoLuo, Lake Victoria); “Mputa” (Luhya, Lake Victoria)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Recorded throughout Lake Victoria including lower reaches of tributaries. The population from Murchison Falls (Victorian Nile drainage) was introduced to Lake Victoria in the late 1950s (Coulter et al. 1986), and supplemented by fish from lakes Albert and Turkana in the early 1960s (Gee 1969). Lake Victoria *Lates* have thus always been referred to as *L. niloticus* although they may not be conspecific. The Lake Turkana population has been described as *Lates niloticus rudolfianus* Worthington, 1932, currently a synonym of *L. niloticus*. According to Hartley (1984) and unpublished data, introduction of *L. niloticus* into Lake Naivasha took place in the early 1970s and individuals have been collected occasionally since the early 1980s, although no information as to its present status is available. Mann (1966) reported the escape of *L. niloticus* from Sagana Fish Culture Farm into the middle Tana River following exceptional floods that occurred at the end of 1961, but apparently it has not become established.

DESCRIPTION:

Maximum known length 180.0 cm TL. D VII-IX/I-II, 9-14, spines robust, connected at base, first and second short, third extremely strong, length usually \geq longest soft ray; A III, 7-13 (commonly 7-9) spines, short; C rounded; 60-80 LL scales; cheek, operculum, and occiput with large scales; all soft rays of vertical fins relatively densely scaled, at least basally; body shape variable, dorsal profile of head usually concave; snout rounded; lower jaw projecting; OD fits 4-7x in HL depending on age of specimen; maxillary extending to or beyond posterior margin of eye; clavicle with strong denticulation above P1 base; live adult uniform brown or olive dorsally, silverish ventrally, sometimes tinged with yellow; juvenile usually brown, marbled, sometimes uniform; very young specimens with irregular dark brown cross-bands, the first of which extends onto deepest part of D; fins whitish, dark at base in juvenile.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY AMBASSIDAE - Glass perches

Ambassis gymnocephalus (La Cepède, 1802)

Bald glassie
"Dodosi" (Dogo, South Coast)



(Photo credit: Hermosa, Jr., Gregorio V)

DISTRIBUTION AND NOTES:

Marine species entering lower parts of rivers, e.g. Ramisi and Uмба systems.

DESCRIPTION:

Maximum known length 16.0 cm TL. D VII/I, 9-10, spines robust, striated; A III, 9-10, third spine longer but less robust than second, its length \approx to fourth D spine; C deeply forked, upper lobe slightly longer; P2 extending \approx two thirds of distance to A; 27-29 LL scales; lateral line interrupted between scales 8-12 terminating entirely in some specimens; pseudobranchiae well-developed; OD dependant on age, in juvenile \approx 40% HL, in adult \approx 30% HL; eye half OD from snout tip; lower jaw longer than upper; maxilla extending to below anterior margin of orbit; live specimens silvery with a bright longitudinal lateral band, some brown spots on anterodorsal portion body; blackish pigmentation between second and third D spines, C with thin black margin.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY TERAPONTIDAE - Thornfishes

Terapon jarbua (Forsskål, 1775)

Thornfish
“Tende”, “Jivo”, “Ngangu” (Swahili, Coast)



(Photo credit: R. Saravanan)

DISTRIBUTION AND NOTES:

Coastal and mangrove species entering lower parts of rivers.

DESCRIPTION:

Maximum known length 30.0 cm SL. D XI-XII/I, 10-11, origin posterior to vertical through axilla, first spine very short, spines 3-5 longest; anterior soft rays longest but shorter than longest spines; A III, 7-8, second and third spines equal, or third slightly longer, base \geq second D; C deeply notched; 80-90 LL scales; cheek and opercle covered with small scales; snout convex, equal to OD in adult, slightly shorter in juvenile; maxillary extending to below anterior third or centre of eye; entire border of pre-operculum serrated, serrae strongly enlarged basally; opercular spine long, very robust; live specimens predominantly silver, olive dorsally; three olive brown or blackish streaks on each flank, upper below spinous D, second extending from nape to CP, third from occiput to C; fins white or pale yellow; a large black blotch on spinous D, a small one at tip of soft D; C with five black bands, one along central rays and two pairs converging posteriorly.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY LUTJANIDAE - Snappers

Lutjanus argentimaculatus (Forsskål, 1775)

River snapper
"Unga" (Digo, South Coast)



(Photo credit: Simon Agembe)

DISTRIBUTION AND NOTES:

Coastal species entering lower reaches of coastal rivers (e.g. Ramisi River).

DESCRIPTION:

Maximum known length 120.0 cm TL. D X, 13-14, depression at confluence between D spines and soft rays; A III, 7-8; P1 long, pointed, extending beyond P2 to below centre of D; P2 soft ray sometimes extended into a filament in juvenile; C truncate with blunt-edged lobes; 46-47 LL scales; preopercle notch shallow; live specimens generally greenish-brown dorsally, reddish ventrolaterally; scales with dark centres and white margins giving overall reticulated effect; 1-2 horizontal blue lines on cheek sometimes present; median fins dusky brown often with reddish-blue; anterior portion of A dark brown or blackish; P2 dusky brown, blackish or red with narrow white anterior margin; P1 translucent to slightly dusky; juvenile generally brown with 10-12 narrow whitish bars on flanks, alternate bars relatively broad, 2-3 scales in width, with intervening bars about half as wide and sometimes very faint.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CENTRARCHIDAE - Sunfishes and Freshwater Basses

?*Lepomis cyanellus* Rafinesque, 1819

Green sunfish



(Photo credit: Thorke A.S. Østergaard)

DISTRIBUTION AND NOTES:

Introduced into Kenya from USA (Welcomme, 1988) but according to Lever (1996) the species has not become established. Its native range is east central North America.

DESCRIPTION:

Maximum known length 31.0 cm TL. D X, 10, faint depression between spines and soft rays; A III, 9, very broad; P1 small, trapezoidal; C rounded, notched; head elongate, lower jaw slightly longer than upper; opercle curved; body elliptical, elongate; live specimens olivaceous-gold with numerous irregular blue spots; head brown dorsally; cheeks with blue vermiculations; blackish, oblong humeral spot, blackish; small specimens appearing entirely blue at a distance; iris golden; C olive blue; D ray tips brownish.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CENTRARCHIDAE - Sunfishes and Freshwater Basses

?*Lepomis macrochirus* Rafinesque, 1819

Bluegill



(Photo credit: Thorke A.S. Østergaard)

DISTRIBUTION AND NOTES:

Introduced into artificial lakes, e.g., Nairobi dam, and the upper Tana River (Mann, 1968; Welcomme, 1988) but has not become established (Lever, 1996). Native range is eastern and central North America from the Great Lakes to the Mississippi drainage, and southwards to the Rio Grande drainage in northeastern Mexico.

DESCRIPTION:

Maximum known length 41.0 cm TL. D IX-XI, 10-11, deep and rounded, spinous and soft-rayed portions continuous; A III, 10-12, broad and rounded; P1 long and narrow, reaching A; C emarginate, forked; 40-44 LL scales; lateral line single, complete; body deep, rounded to oval in shape; head small, scaly, unscaled anterior to eye; opercle flexuose; head profile steep, opercle with a large, black projection on upper extremity; mouth small, eyes large; jaws equal; colour pattern in live specimens variable depending on environmental conditions, usually iridescent green-blue with vague vertical bars; numerous small brown dots; D, A and C sooty black; P1 with a yellowish tinge; iris golden-brown; nuptial males orange anteroventrally.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CENTRARCHIDAE - Sunfishes and Freshwater Basses

Micropterus salmoides La Cepède, 1802

Largemouth bass, Black bass, Green bass
“Chengu” (Swahili, Lake Naivasha)



(AM/AMGP 14212)

DISTRIBUTION AND NOTES:

Established in affluent rivers of Lake Victoria (Ochumba & Manyala, 1992) and reported from the lake itself in 1989. Originally introduced from North American or Europe in 1929 for angling (Welcomme, 1988). Introduced into various natural and artificial waters, dams (e.g. in coffee plantations). According to Lever (1996) the initial stock came from Europe. Copley (1941) reported introduction into Lake Naivasha in 1928. Following Mann (1966), this species escaped from ponds at Sagana fish farm during the exceptionally high floods at the end of 1961 into the middle Tana River, although it does not appear to have become established there. Native range is eastern and southern USA to northern Mexico.

DESCRIPTION:

Maximum known length 97.0 cm TL. D VIII-IX/I, 12-13, a deep cleft in membrane between spinous and soft-rayed sections; A III, 9-11, origin posterior to second D; P1 and P2 \approx in length; P2 base below P1 base; C emarginate; CP elongate; 58-69 LL scales; lateral line complete; D and A bases unscaled; posterior edge of upper opercle pointed; mouth large, extending well beyond posterior margin of orbit when closed; live specimens olive-green dorsally, light green laterally, whitish ventrally; a connected series of short, dark olive green vertical bars forming an irregular band along body, 2 or 3 broad olive stripes radiating posterior to eye.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY CICHLIDAE - Cichlids

Astatoreochromis alluaudi (Pellegrin, 1904)

Alluaud's haplo
 "Hamaga" (DhoLuo, Lake Kanyaboli)



(Photo Source: KMFRI)



(Photo Source: Kevin Bauman)

DISTRIBUTION AND NOTES:

Lake Victoria system, including rivers associated with Lake Kanyaboli and the Winam Gulf. Introduced in the upper At-hi River drainage near Nairobi (De Rham 1991).

DESCRIPTION:

Maximum known length 18 cm. TL. D XVII-XIX, 6-9, spines increasing in length posteriorly; A IV-VI, 6-9, posterior spine \leq posterior D ray; P1 not extending to A origin; P2 extending beyond A origin; C rounded; 32-34 LL scales; 4-5 scale series on cheek; $BD \geq HL$; snout with straight or slightly convex profile, equal to OD in juvenile, slightly longer in adult; jaws equal, or lower projecting slightly; maxillary extending to below or slightly beyond anterior margin of eye; live specimens olive or brownish, with or without ill-defined dark vertical bars; some young specimens dark steel-grey, blackish on dorsum; a black or blackish bar running through eye, another sometimes extending from behind eye to angle of preoperculum; vertical fins dark, with relatively distinct small dark spots; D and A usually with blackish margin; A with two or three transverse series of light, dark-edged ocelli in male.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Ctenochromis pectoralis Pfeffer, 1893

Pangani haplo



NMK FW 842/2

DISTRIBUTION AND NOTES:

Pangani drainage, including Lake Jipe, and Tsavo system, e.g., Mazima Springs. Taxonomic status of the latter population is unclear, however.

DESCRIPTION:

Maximum known length 18.5 cm TL. D XV, 11, spines increasing in length posteriorly; longest D soft rays > half HL; A III, 9, third spine longest, < longest D spine but more robust; P1 acutely pointed, not reaching vertical through A base; P2 reaching A base; C truncate; 37 LL scales; scales weakly denticulate, very slim on nape and pectoral region; live specimens reddish-brown dorsally, lighter laterally between two dark longitudinal stripes, the lower of which is more well-defined and extends from opercular spot to above lower lateral line; a poorly-defined dark bar below eye; gular and pectoral regions dark brown; P1 whitish; P2 black; majority of A bright yellow with three large ocelli; D and C brown, latter with basal portion of lower lobe yellow.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY CICHLIDAE - Cichlids

Haplochromis macconneli Greenwood, 1974

McConnel's haplo



(NMK FW 41/1-9)



(Photo credit: Mark Smith)

DISTRIBUTION AND NOTES:

Endemic to Lake Turkana, e.g., north west of Central Island.

DESCRIPTION:

Maximum known length 10 cm. TL. D XIII-XVI, 8-10; A III, 7-9; anterior P1 rays slightly elongated, more so in larger individuals; P2 extending to or beyond A origin; C truncate, scaled proximally; abdominal scales very small, grading in size with subpectoral scales; 3-4 rows of imbricating scales on cheek; a small naked area anterior to D origin in most specimens; dorsal profile of head gently concave, sloping at an angle to horizontal; snout profile varying from straight to decurved, with premaxillary tooth pedicels interrupting the outline; mouth slightly oblique, posterior tip of maxilla reaching anterior margin of orbit; anterior tip of lower jaw usually pronounced into a symphysial knob; live adult female pale greenish-fawn with traces of greenish iridescence laterally; all fins colourless except for three conspicuous and bright yellow ocelli on A; in preserved specimens of both sexes base colour of body and head uniformly pale yellowish-fawn; all fins hyaline with dark spots on proximal portion of C; D in male darker, P2 with dense aggregation of melanophores on anterior portion.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY CICHLIDAE - Cichlids

Haplochromis nubilus (Boulenger, 1906)

Blue Victoria haplo
 “Furu”, “Fulu” (DhoLuo, Swahili, Lake Victoria)



(Photo credit: Frank Teigler)



(Photo credit: Kevin Bauman)

DISTRIBUTION AND NOTES:

Endemic to riverine systems throughout the Lake Victoria basin (e.g. around 10 km before the Nzoia River from Siaya). Expected to occur in the Mara River.

DESCRIPTION:

Maximum known length 12.0 cm TL. D XV-XVI, 9-10; A III, 9-10; anterior branched P1 ray slightly extended in both sexes; P2 extending to or beyond A origin; C subtruncate or rounded; 29-33 LL scales; dorsal head profile sloping steeply, straight except for a marked concavity above orbit; upper margin of orbit below level of dorsal profile; mouth terminal or slightly superior; lips thickened; jaws equal in length; snout slightly wider than long; live adult male predominantly black, A and distal margin of C often bright vermilion; orange ocelli sometimes present on A; female and juvenile dark grey or brown to blackish, with or without black pigmentation on body; usually a black vertical bar below anterior portion of eye; a black opercular spot; D and A dark grey or brown, with relatively distinct small dark spots; ventral fins greyish or yellow.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis rudolfianus Trewavas, 1933

Lake Rudolf haplo



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Endemic to Lake Turkana, e.g., Loyangalani on the eastern shore.

DESCRIPTION:

Maximum known length 8.0 cm. TL. D XIV-XVI, 9-11; A III, 8-11, third A spine \leq D; P2 reaching vent or A base, anterior branched ray slightly extended in both sexes, more so in adult male; C subtruncate, scaled basally; 30-33 LL scales; anteroventral body scales much smaller than posteroventral; small naked region immediately anterior to D origin, another below ventral row of cheek scales; 2-4 scale rows on cheek; snout straight or slightly concave; mouth slightly superior; jaws equal in length; maxillary extending to below anterior margin of eye; live specimens with dark vertical bar below eye, another on nape; opercular spot present; 6-7 vertical stripes below D, two series of spots on CP, spots and stripes sometimes united by a lateral body stripe; D sometimes with two black basal blotches; A with 1-3 ocelli.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY CICHLIDAE - Cichlids

Haplochromis turkanae Greenwood, 1974

Lake Turkana haplo



(Photo credit: Erwin Schraml)

DISTRIBUTION AND NOTES:

Endemic to Lake Turkana, e.g. north west of Porr.

This species has been referred to as *Thoracochromis turkanae* (Greenwood 1974) by some authors.

DESCRIPTION:

Maximum known length 11.0 cm. TL. D XIV-XV, 9; A III, 7-8; anterior P2 ray extended; P1 sometimes extending to second branched A ray; C strongly subtruncate, almost rounded, scaled proximally; 31-32 LL scales; 4-5 imbricate scale rows on cheek; a naked region anterior to D origin; anteroventral body scales smaller than posteroventral; dorsal head profile straight or gently curved; mouth slightly superior; lips slightly thickened; lower jaw longer than upper; snout wider than long, with smoothly rounded anterior profile when viewed from above; live non-nuptial male light grey to yellowish-grey dorsally, pearly white ventrally, separated by a lateral stripe on body and CP; most dorsal, lateral and ventrolateral flank scales with a narrow dark margin; lower jaw, branchiostegal membrane, sub-operculum and lower cheek pearl-white; ≈ five very faint dark vertical bars on flank, another on CP in some individuals; bars narrow dorsally and do not extend onto ventral portion of body; vertical limb of preoperculum variably dusky with broad maxillary tip, narrowing abruptly and continuing ventrally and medially onto lower jaw; entire soft D and posterior half of spinous D densely spotted, arranged in four lateral rows anteriorly to six or more rows posteriorly; spots confluent on anterior portion of spinous D forming dark, vertical streaks between spines; dorsal fin lappets black; entire C covered with dark spots forming irregular vertical bars when fin not expanded; A hyaline except for three pale ocelli; anterior portion of P2 dusky, posterior portion hyaline; anterior P2 ray whitish.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis aff. *bloyeti* (Sauvage, 1883)

Bloyet's haplo



(Photo credit: Frank Teigler)

DISTRIBUTION AND NOTES:

Pangani drainage including Lake Jipe.

The taxonomic status of Kenyan populations is uncertain.

DESCRIPTION:

Maximum known length 15.0 cm TL. D XIII-XVI, 8-12, longest soft ray < HL; A III-IV, 8-11, third spine \leq D; P1 < HL; P2 reaching vent, sometimes extending beyond A; C subtruncate or rounded; 28-36 LL scales; 3-5 scale rows on cheek; snout profile straight or slightly concave; jaws equal or lower slightly projecting; maxillary extending to below anterior portion of eye; live specimens brownish to olive green, with or without indistinct dark bars, sometimes with an interrupted dark lateral stripe extending from eye to C base; a dark brown or black bar below anterior portion of eye; often two dark streaks across snout; dark opercular spot present; vertical fins with or without small dark and light spots; D often with black margin in male; A in male typically with several yellow or orange ocelli outlined with red; P2 yellow in female, black or blackish in male; some specimens entirely dark brown or black.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis aff. *brownae* Seegers, 1981

Osani haplo



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Lake Victoria basin, e.g., the Osani/Oyani River, near Migori.

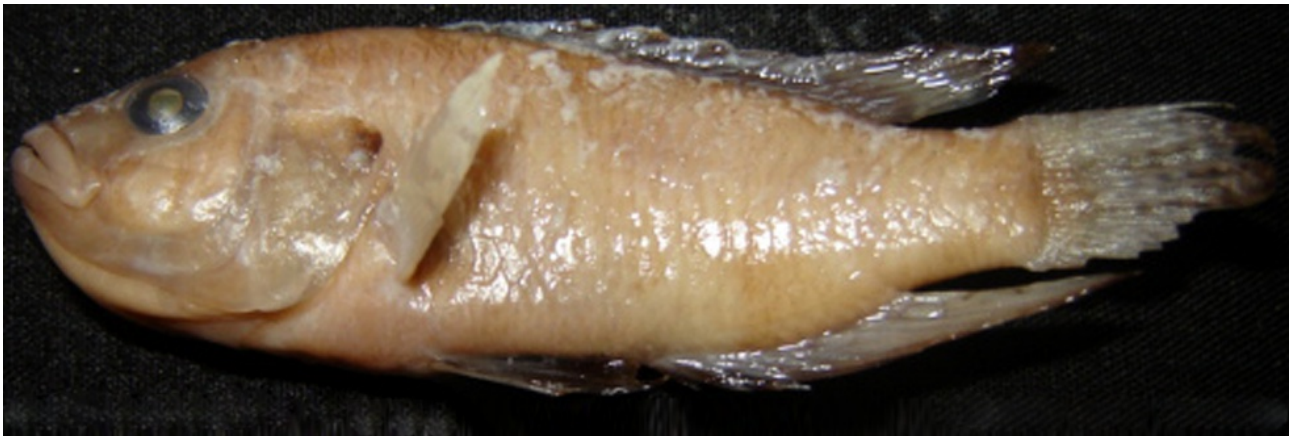
DESCRIPTION:

Maximum known length 10.4 cm SL. D XIII-XVI, 8-10; A III, 8-10; C truncate; P1 short, equal to HL; 30-33 LL scales; 2-3 imbricate scale rows on cheek, 6-8 scales P1 base and P2 base; mouth terminal or slightly superior; jaws equal; lips not thickened; posterior tip of maxilla reaching or almost reaching vertical through anterior margin of orbit; live male grey-green dorsally, silver-blue ventrally, snout dark grey-green; nuptial specimens with a bright orange flush on cheek, operculum, flank, and abdomen, and a pronounced lachrymal stripe; D, C and A sooty-grey; D with 3-5 horizontal rows of ruddy spots between spines and rays; A usually with a single row of 3-4 orange ocelli; P1 black; female silver-grey dorsolaterally, silver ventrally; all fins hyaline except light lemon-yellow P1; some individuals with small orange spots in place of A ocelli; preserved female brownish dorsally, silver ventrally and on cheek, a faint stripe on P1, 5 transverse bars on flank not extending to P2, a short dark mid-lateral streak above A in some specimens, all fins colourless; preserved male more variable, some individuals resemble females but with a more intense lachrymal stripe and distinct postorbital bar, all fins except P2 hyaline, D with dusky lappets, P2 dark laterally, greyish medially.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis spec. "Amboseli"

Amboseli haplo



(NMK FW 559/1-4)



(NMK FW 559/1-4)

DISTRIBUTION AND NOTES:

Ol-Tukai swamps, Amboseli National Park.

An unidentified taxon currently under study.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis spec. "Lake Challa"

Lake Challa haplo



(NMK FW 116/1)

DISTRIBUTION AND NOTES:

Lake Chala at the border between Kenya and Tanzania, southeastern flank of Mt. Kilimanjaro, Taita Taveta County (Pangani drainage).

Taxonomic status of this fish is uncertain. According to local fishermen from Lake Chala, it was introduced in the 1970s together with tilapiine species which probably originated from Lake Babati (South of Lake Manyara) in Tanzania.

DESCRIPTION:

Maximum known length 11.0 cm TL.

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis spec. "Migori"

Migori haplo



(Photo credit: Ruud Wildekamp)



(Photo credit: Mark Smith)

DISTRIBUTION AND NOTES:

Apparently endemic to the Lake Victoria drainage. Recorded from the Kuja-Migori River west of Logorien, and Silanga Dam, off the Uriri-Migori road at Kakrao Central.

An unidentified taxon.

DESCRIPTION:

Maximum known length 10.0 cm TL.

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis spec. "Mzima 1"

Mzima haplo



(Photo credit: Jen Guyton and Douglas McCauley)

DISTRIBUTION AND NOTES:

Collected from Mzima Springs, e.g. the upper pool just below the spring, in the Tsavo River System.

An unidentified taxon; tissue samples were removed for genetic study in 2012.

DESCRIPTION:

Maximum known length 7.5 cm TL.

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis spec. "Mzima 2"

Mzima Springs haplo



(Photo credit: Jen Guyton and Douglas McCauley)

DISTRIBUTION AND NOTES:

Collected from Mzima Springs, e.g. the upper pool just below the spring, in the Tsavo River System.

An unidentified taxon; tissue samples were removed for genetic study in 2012.

DESCRIPTION:

Maximum known length 6.5 cm TL.

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis spec. "Sio"

Sio haplo



(Photo credit: Ruud Wildekamp)

DISTRIBUTION AND NOTES:

Known only from the Sio River in western Kenya, Lake Victoria drainage.

An unidentified taxon.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis spec. "Turkana 1"



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Known only from Lake Turkana.

An unidentified taxon.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis spec. "Turkana 2"



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Known only from Lake Turkana.

An unidentified taxon.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis spec. "Turkana 3"



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Known only from Lake Turkana.

An unidentified taxon.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Hemichromis exsul (Trewavas, 1933)

Turkana jewel cichlid



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Lake Turkana, e.g., at Loyangalani on the eastern shore.

Listed as *Hemichromis bimaculatus* Gill 1862 by Trewavas (1973) and Hopson & Hopson (1982), and as *H. letourneuxi* Sauvage 1880 by Loiselle (1979). According to Seegers (1998), the Lake Turkana population is probably a distinct species endemic to the lake. Originally described as *Pelmatochromis exsul* Trewavas 1933.

DESCRIPTION:

Maximum known length 10.0 cm SL. D XIV-XV, 10-11; A III-IV, 8-9; 26-27 LL scales; 4 scale rows on cheek; P2 terminating above or anterior to vent; C rounded; upper profile of snout straight; mouth with oblique cleft; jaws equal in length, or lower projecting slightly; maxillary terminating below anterior margin of eye; live specimens silverish, a dark marking on dorsum, another on lower lateral line, an indefinite patch below upper lateral line, opercular spot present, a faint bar below eye; a few light spots on upper C lobe and posterior portion of D; P2 dusky; small individuals plainer and with clear D margin.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis maxillaris Trewavas, 1928

“Fulu” (DhoLuo, Lake Victoria)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Lake Victoria basin, particularly the mouth of the Nzoia River. Expected to occur elsewhere, including the Lambwe and Kuja rivers, and Lake Kanyaboli.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY CICHLIDAE - Cichlids

Neochromis nigricans (Boulenger, 1906)

“Fulu” (DhoLuo, Lake Victoria)



(Photo Source: KMFR1)

DISTRIBUTION AND NOTES:

Expected to occur around river mouths (e.g. Lambwe and Kuja) in the Lake Victoria basin, plus in the lake itself (e.g. at Mbita Point).

Has been referred to the genus *Lipochromis* in the past.

DESCRIPTION:

Maximum known length 9.4 cm SL. D XV-XVI, 9-10, spines equal from VIII-VIII, almost half HL; A III, 9-10, 3rd spine equal to longest D spines; P1 almost equal to HL, not extending to vertical through A base; P2 extending beyond A base; C truncate; 31-32 LL scales; scales denticulate; 3 series of scale rows on cheek, width of scaled portion slightly < OD; large scales on occiput and abdomen; cycloid scales on posterior portion of ventrum, absent in anal region; male distinguished from all other *Neochromis* species by possessing enlarged cephalic pores and large ventrolateral scales, grading to small scales at P2 origin; body deep; dorsal head profile strongly decurved, moderately convex; head twice as long as wide; mouth terminal, small; thick lips not extending to anterior margin of eye; lower jaw short and narrow; snout wider than long, \leq OD in most specimens >6.5 cm SL, with equal length and width in smaller individuals; eyes large; live specimens blackish or steel grey dorsally, paler ventrally; 7 poorly-defined or 8-10 distinct black bars on body, black bars on head, black opercular spot, a vertical black bar below anterior portion of eye; D and P2 dark brown or black, other fins dark greyish brown; A spines, D spines, and tips of D rays reddish, remainder of D grey to deep blue; remainder of A light with a patch of 3-5 rounded orange ocelli.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Alcolapia aff. *alcalicus* (Hilgendorf, 1905)

Shombole tilapia



(Photo Source: KMRD)

DISTRIBUTION AND NOTES:

Northern portion of the Lake Natron drainage, and the Shombole swamps in the South Ewaso Nyiro drainage.

Described as *Tilapia alcalica* Hilgendorf 1905 and also been referred to as *Oreochromis alcalicus* in the past. Reported from the Shombole Swamps as *Chromis niloticus* var. *mossambicus* (Coe, 1969). Specific rank according to Seegers & Tichy (1999).

DESCRIPTION:

Maximum known length 8 cm TL. D IX-XIII, 11-15, spines subequal from IV, < half HL, longest soft ray \approx half HL; some D spines in nuptial male with slender, slightly flexible distal section with a blunt tip used in courtship; A III, 11; P1 short, not reaching A origin; P2 not reaching vent; C truncate; 25-30 LL scales; 3-4 scales rows on cheek; abdomen naked or with minute scales interrupted by naked patches, especially near bases of P1 and P2; exposed surfaces of large scales granulated, giving a finely ctenoid edge; mouth terminal, extending to vertical between nostril and eye; eye small; tilapia mark on D absent, an inconspicuous unringed marking present in some individuals; live specimens brownish dorsally, whitish ventrally; 8-10 dark vertical flank bars becoming reddish in nuptial individuals; anterodorsal scales with a blue vertical streak; live nuptial male pale olive-green on dorsum of head; no black oblique bar across eye; scales pale blue in centre; operculum pale yellow with green iridescence, opercular blotch faint; iris black, rim of pupil red; corners of lower lip brilliant white; throat and abdomen brilliant lemon-yellow; D pale yellowish with grey spots basally, margin black; C with yellow-blue spots proximally, crimson distally, posterior portion red; live female duller; preserved specimens appear very similar to *A. alcalicus*.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Alcolapia grahami (Boulenger, 1912)

Lake Magadi tilapia



(Photo Source: KMRD)

DISTRIBUTION AND NOTES:

The Lake Magadi basin, including springs at its southern end. Introduced to Lake Nakuru in 1953, 1959, and 1962 (Vareschi, 1979), and may also have been introduced to Lake Elementaita. Subalisky (2012) suggested it might occur in the Mara River system and if this proves the case this is another potentially introduced population.

Described as *Tilapia grahami* Boulenger 1912 and has been considered synonymous with *A. alcalicus* in the past. Misidentified as *Tilapia mossambica* (non Peters 1852) by Woodhouse (1912). Specific rank according to Seegers & Tichy (1999).

DESCRIPTION:

Maximum known length 15 cm TL. D XI-XIII, 12-13, spines subequal from III; A III, 8-9; D and A spines weak; P1 not reaching A base; P2 not reaching vent; C rounded; 28-30 LL scales; 2-3 scale rows on cheek; abdomen naked; head large; snout rounded, upper profile convex; mouth large, extending to vertical between nostril and eye; lips strongly developed, lower forming a lobe at each side; live specimens dark bluish with ill-defined darker bars dorsally, nuptial male whitish ventrally; snout and top of head grey-mauve; flank with pale blue spots forming vertical bars; body scales bright blue in centre; operculum iridescent blue with black blotch; eye bordered with white and orange, a black oblique cross bar in male; lower labial lobe white; D transparent with greyish to black spots and black margin; D, A, and C soft rays with numerous small blackish spots which may form vertical bars on C; posterior margin of C faint pink to orange-red, distal portion orange in nuptial male; preserved specimens appear very similar to *A. alcalicus*.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Oreochromis andersonii (Castelnau, 1861)

Three-spotted tilapia



(Photo credit: Panduleni Ndinelago Elago and IFC)

DISTRIBUTION AND NOTES:

Unknown if established in natural waters of Kenya. Around a thousand juvenile tilapiines from Botswana, which later proved to be a mixture of *O. andersonii*, *O. machrochir* (Boulenger 1912) and *Tilapia rendalli* (Boulenger 1897), were introduced to Nairobi dam in 1980 by I. Parker (Motiti Pan, and extension of the Okavango drainage) for aquaculture purposes. It is possible some of these entered the Nairobi River system. Also introduced at Bamburi Nature Trail, Mombasa.

DESCRIPTION:

Maximum known length 50.0 cm TL; D XVI-XVIII, 11-15; A III, 11-13; C truncate, scaled basally; 31-35 LL scales; 2-4, usually 3, scale rows on cheek; male genital papilla bluntly conical with a narrow flange, slightly notched medially; jaw enlarged in nuptial male; live adult specimens silver blue-grey, darker dorsally, typically with 2-4 black midlateral spots and light scale borders, fins blue-grey with light spots on soft D and A; D and C in both sexes with pink to red margins, red flush extending over much of C and A in some individuals, others with few white spots on A and dark spots or bars on D; C sometimes spotted basally but usually lacking spots; colour pattern in nuptial individuals of both sexes including 3-4 conspicuous midlateral blotches and bright red margin on D and C; nuptial male blue-black with silvery mesh-like patterning, broad red fin margins, a dark iridescent purplish-brown colour or maroon flash dorsolaterally, masking midlateral spots; juvenile silvery with 8-9 irregular thin bars on body and 3-4 midlateral spots, tilapia-mark on D disappears or becomes part of barred pattern on D soft rays in specimens >7.0 cm SL; preserved specimens with no spots but relatively extensive dark markings and six faint vertical bars; vertical body bars may predominate and midlateral spots may be faint or absent in individuals measuring <11.0 cm SL.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY CICHLIDAE - Cichlids

Oreochromis esculentus (Graham, 1928)

Graham's tilapia

"Ngege" (Swahili, Luhya, DhoLuo); "Osamo" (DhoLuo, Lake Victoria); "Dwela" (DhoLuo, Lake Kanyaboli)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Recorded from lower reaches of rivers flowing into Lakes Sare and Kanyaboli within the Lake Victoria drainage, plus Kavirondo Gulf and Muhuru Bay in the lake itself, while Angienda *et al.* (2011) recorded it from Lake Namboyo in the Yala swamps. Appears to be under threat of extinction in the Victoria basin, but has been translocated to several reservoirs and other water bodies, such as the Kano, Gem, and Nyakach rivers, and Lake Jipe in the Pangani system.

Originally described as *Tilapia esculenta* Graham 1928.

DESCRIPTION:

Maximum known length 50.0 cm TL. D XVI-XVIII, 11-12; A III, 10-12; 31-35 LL scales; 2-3 scale rows on cheek; C truncate, often rounded due to damage in adult, not densely scaled but in large specimens small scales may extend onto rays almost to margin and can be densely-arranged on upper and lower rays; genital papilla in adult male short, not prolonged, entire or bifurcate, bluntly bifid in some specimens, with a number of spongy lobes; live non-nuptial specimens olive-brown to watery green, reddish dorsally, cream to silvery-white ventrally; soft vertical fins usually with round white or greyish spots, or weakly spotted and tinged with red; D without colour or deep red; nuptial male with sooty dorsum, ventrum, P2, anterior portion of A, and D, flanks reddish; juvenile silvery-grey; tilapia mark comprises a well defined black spot outlined in pale yellow on D; posterior lappets and upper edge of soft D dark crimson in a few specimens; white or greenish-white spots on D and C sometimes intense in male; sides of head and dorsal portion of flank crimson, elsewhere scales grey with pinkish-fawn margin.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY CICHLIDAE - Cichlids

Oreochromis hunteri Günther, 1889

Lake Chala tilapia



(Photo credit: Luc de Vos/NMK)

DISTRIBUTION AND NOTES:

Endemic to Lake Chala.

Has been referred to as *Tilapia hunteri* Günther 1889, or by the misspelling *T. hunter*.

DESCRIPTION:

Maximum known length 30.0 cm. TL. D XVI-XVII, 11-12, longest soft ray extending to C base; A III-IV, 10-13, longest soft ray < longest D soft ray; P1 ≤ HL, ≈ reaching vertical through A base; P1 and P2 long; C truncate; 34-36 LL scales; lateral line interrupted below tip of spinous dorsal; cheek scales small, in 3 series, abdominal scales very small, an abrupt transition from flank scales posterior to P2 interspace in some individuals, D scales also sometimes small; dorsal head profile relatively straight; mouth large, terminal, jaws meeting evenly, extending to between nostril and eye; snout rounded, upper profil concave, slightly wider than long; preorbital convex, ≥ OD; live specimens uniform dusky to dark brown tinged with rusty pigmentation, some scales on dorsum with reddish-brown spot at base; adult metallic blue-black dorsally, iridescent dark greenish-blue on lower portions of operculum and jaw, blackish-bronze laterally; breast speckled dark green and white, grey to white ventrally; some individuals with dark orange D margin; vertical and ventral fins blackish; juvenile with bronze flanks, greenish-bronze dorsum, cream ventrum, pale head, C and D dark green, lower fins paler iridescent green; a checkered effect in both juvenile and adult produced by darker anterior margin on each scale; preserved juveniles <10.0 cm SL with a well-defined dark midlateral stripe, 11-13 narrow dark vertical bars, 5-7 blotches above upper lateral line; tilapia mark laterally elongate.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Oreochromis jipe (Lowe-McConnell, 1955)

Jipe tilapia
"Roketi", (Lake Jipe)



(Photo credit: Luc de Vos/NMK)

DISTRIBUTION AND NOTES:

Pangani river drainage, including western shores of Lake Jipe and surrounding ponds.

Described as *Tilapia jipe* Lowe 1955, and also referred to as *T. (Sarotherodon) jipe*, *T. (Oreochromis) jipe*, and *Sarotherodon jipe* in the past. The nominal species *Tilapia girigan* Lowe-McConnell 1955 and *T. pangani* Lowe-McConnell 1955, as well as the subspecies *Oreochromis pangani pangani*, are current junior synonyms.

DESCRIPTION:

Maximum known length 47.0 cm. TL. D XVII-XIX, 11-14; A III-IV, 10-13; D and A rays long, posterior tip of D extending to centre of C; P2 ≈ reaching A; C long; 32-36 LL scales; 2-3 series of subocular cheek scales; abdominal scales very small; dorsal head profile steep, ≈ straight in adult, sometimes concave in mature male, convex in smaller specimens; lower jaw shorter than upper; live non-nuptial specimens light grey or grey-green, dorsolateral scales with black or dark brown centres, light grey ventrally, spots sometimes extending onto head, often most well-defined at lateral line pores; sometimes 7-9 faint vertical stripes on body; D with dark spots or reticulations anteriorly, oblique bars posteriorly; A barred posteriorly; D and A grey with black spots anteriorly and stripes posteriorly; P1 unpigmented, P2 dark in larger individuals; nuptial specimens, especially male, with green and purple sheen on body, cheek, and operculum, bright orange D margin and crimson, yellow, or orange C margin, sometimes bluish-green P2 A margin, sometimes yellow spots on D and A; C with well-defined black or dark brown vertical stripes, sometimes irregular or fading distally; juvenile <8 cm in length olive-green body with 9-14 thin dark brown vertical bars, C and A striped; black tilapia mark extending from posterior D spine to third or fourth soft ray, with three black bars posteriorly; dark flank markings more intense during aggressive or sexual interactions; vertical stripes on C useful in field identification.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY CICHLIDAE - Cichlids

Oreochromis korogwe (Lowe-McConnell, 1955)

Korogwe tilapia



(NMK FW 813/1-7)

DISTRIBUTION AND NOTES:

Pangani drainage, e.g. at Korogwe, Tanzania.

Originally considered to represent what is now *O. niloticus* (Linnaeus 1758) but later described as the subspecies *Tilapia mossambicus korogwe* Lowe-McConnell 1958 before being elevated to full species rank by Trewavas (1966). No specimens have been collected from Kenyan territory on an official basis, but the species is most likely present in the upper Pangani system and may have been introduced in Lake Chala.

DESCRIPTION:

Maximum known length 20.8 cm. TL. D XVI-XVIII, 9-11; A III-IV, 8-11; 29-32 LL scales; 2-3 rows of subocular scales on cheek; C truncate; P2 extended into a long filament in mature male; lips thick; maxillary sometimes extending almost to below eye; nuptial individuals may not display a well-defined colour pattern, although corners of C become white in male; non-nuptial male generally dark iridescent blackish-green, iridescent green on snout, a narrow red D margin; preserved female and non-nuptial male with lateral and vertical bands represented by intense black blotches which may be contiguous; usually a well-defined dorsal blotch on CP; C plain or with vertical bars or series of spots; vertical bars sometimes more well-defined ventrolaterally in male; interspaces between bars on abdomen plus a variable, uneven area on operculum whitish-silver to aluminum; branchiostegal membrane black in male, pale in female; genital papilla white in both sexes, conspicuous against dark background in male.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY CICHLIDAE - Cichlids

Oreochromis leucostictus (Trewavas, 1933)

Blue-spotted tilapia
 "Odede" (DhoLuo, Lake Kanyaboli)



(Photo credit: Ruud Wildekamp)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Recorded from lower reaches of tributaries in the Lake Victoria basin, including Lake Kanyaboli. Introduced to the Kenyan portion of Lake Victoria (e.g. Migori River, Lake Kanyaboli) in 1953 or 1954 from Lake Albert (Welcomme, 1967, 1988; Lever, 1996). Also recorded in some dams and fish ponds in Bungoma Butere, Emuhaya, Hamisi, Igulu, Khwisero, Malava, Minere, Navakholo, and Vihiga districts of Western Province. Introduced into Lake Naivasha where it has become established.

Originally described as *Tilapia leucosticta* Trewavas 1933, while *Tilapia trewavasae* Poll 1939 is a current synonym.

DESCRIPTION:

Maximum known length 32.0 cm TL. D XVI-XVII, 11-12, soft D rays extending beyond C base in female, to centre of fin in male; A III-IV, 9-11, posterior spine \approx equal to D; P1 extending to or beyond A origin; C truncate; 28-31 LL scales; 2 scale rows on cheek; jaws equal, or lower jaw projecting slightly; maxillary terminating below or slightly posterior to

nostril; OD equal to preorbital length; genital papilla small, crenellated in mature specimens; live specimens dark olive-green to slatey-black, lateral scales with whitish or silvery green centres; dorsum of head and nape dark; opercular blotch and preorbital bone with dark violet iridescent sheen; lower lip often bluish-white, bluish-green or greenish-white in male, dark in preserved specimens; branchiostegal membrane sometimes with yellow patches in non-nuptial male and ripe female, black in brooding female; 8-11 dark vertical bars sometimes visible on flank in adult; juvenile with 8-12 dark vertical bars, remaining scales dark, shading to pearly grey; D, A and C dark; soft D, entire C and A with well-defined bluish-white spots; nuptial male dark blue-black with intense whitish spots and dark reticulations on body and fins, sometimes restricted to base or middle of fins; nuptial female overall more intense with black markings on P2; iris in both sexes bright yellow with an oblique dark bar in nuptial individuals; dorsal margin may contain red pigmentation mixed with melanin which disappears post mortem leaving plain black lappets; tilapia mark in juvenile <6.5-7.0 cm SL comprises relatively indistinct marbling on a yellow background; genital papilla bright white and conspicuous throughout life.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Oreochromis mossambicus (Peters, 1852)

Mozambique tilapia
"Para Para" (Digo, South Coast)



(Photo credit: Frank Teigler)

DISTRIBUTION AND NOTES:

Recorded only from brackish habitats in the lower Ramisi River where it was most likely introduced for aquaculture. Status uncertain and may not have become established.

DESCRIPTION:

Maximum known length 40.0 cm SL. D XV-XVII, 10-13, longest soft D ray extending to proximal portion of C in female and immature male, > half fin length in mature male; A III, 9-12, extended in mature male, not reaching C; C truncate, often with rounded tips, densely-scaled; 26-32 LL scales; body moderately deep; head profile straight in juvenile and female, concave in mature male; genital papilla of male simple or with a shallow distal notch; jaw of sexually mature male enlarged, often causing upper profile to appear concave; maxillary tips between nostril and eye in female and immature male, below anterior margin of eye in mature male; live female and non-nuptial male silvery-olive to deep blue-grey with 2-5 mid-lateral blotches, 3-4 markings dorsally; mature male deep grey-black, ventral surface of head white, D and C with red margins; nuptial male deep blue-black to black except a white area on lower portion of operculum, preoperculum, cheek and branchiostegal membrane, D and C with scarlet margins, P1 rays red; throat and cheek may be white or bright yellow; juvenile silvery with 6-7 vertical bars, 3 spots along flank, ringed tilapia mark present in specimens < 8.0 cm SL, appearing as intensified proximal extremity of a grey oblique bar in larger individuals; bands absent in preserved female and sexually immature male, but intersections of facultative bands may be represented by blotches.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Oreochromis niloticus (Linnaeus, 1758)

Nile tilapia
“Ngege” (Swahili, Luhya, DhoLuo, Lake Victoria and Lake Kanyaboli); “Nyamami” (DhoLuo, Lake Victoria)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Rivers throughout the Lake Victoria drainage including the Sio and Nyando floodplains, and Kano-Ahero drainage. Introduced into Lakes Kanyaboli and Sare in 1957, and recently recorded from Lake Namboyo in the Yala swamps (Angienda et al., 2011). The introduced fish may belong to the subspecies *Oreochromis niloticus eduardianus* (Boulenger 1912). Cultured in ponds in Bungoma, Busia, Butere, Emuhaya, Hamisi, Igulu, Ikolomani, Kabras, Kakamega, Khwisero, Lugari, Lurambi, Malava, Minere, Navakholo, Shinyalu, and Vihiga districts of Western province, and in Nyanza Province at Dominion Farms, Siaya, Kisii, Ahero, Nyakach, and Migori. A record from the Northern Ewaso Nyiro by Copley (1941) was not discussed in Trewavas (1983), but probably refers to a misidentification of *O. spilurus* (Günther 1894).

Originally described as *Perca nilotica* Linnaeus 1758, and has also been referred to as *Tilapia nilotica* in the past.

DESCRIPTION:

Maximum known length 50.0 cm TL. D XV-XVIII, 12-14; A III, 9-11, length of A spine variable; 30-35 LL scales; 2-3 scale rows on cheek; P1 \approx reaching vertical through A origin; P2 reaching vent or A; C truncate in juvenile, normally rounded in adult; HL variable; neither allometric nor sexual difference in jaw size; male genital papilla conical; live specimens yellowish-brown or grey laterally, dark olive or silverish dorsally; scales often darker at base or lighter in centre; some specimens with black spots on body; juvenile with 8-9 relatively distinct body bars and a dark spot below upper margin of CP, markings may persist in adult with faint traces of 6-7 dark vertical bars on flank and CP; a blackish opercular spot; D and A with irregular blackish and whitish to greyish spots forming an oblique series, or with oblique dark streaks; C grey with a variable number of dark red sinuous vertical bars; nuptial male with red flash on head, lower body, D and C, and ventrum; A, D, and P2 black.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Oreochromis niloticus baringoensis Trewavas, 1983

Baringo tilapia
"Sopore", "Sibore" (Lake Baringo); "Nyamami" (DhoLuo, Lake Victoria)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Endemic to the Lake Baringo drainage, e.g., off Baringo Lodge, and hot springs near Lake Bogoria.

Previously misidentified as *Tilapia nilotica* (Linnaeus 1758).

DESCRIPTION:

Maximum known length 28.0 cm. TL. D XVI-XVII, 12-14; A III, 9-11; 32-33 LL scales; live specimens pale (possibly an environmental effect); D with black or dark grey lappets and upper margin; P2 and A of nuptial male with dark grey tips; C with dark brown vertical stripes distally, irregular stripes proximally, light grey background; throat and abdomen dusky grey; body in female and juvenile pale slate-grey, abdomen and P2 white; mature male somewhat darker, especially on dorsum; P2 rays red to light brown; flank sometimes with 7-8 vertical bars.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Oreochromis niloticus eduardianus (Boulenger, 1912)

Edward tilapia
“Ngege”, “Nyamami” (DhoLuo, Lake Victoria)



(Photo credit: Erwin Schraml)

DISTRIBUTION AND NOTES:

Introduced to the Lake Victoria basin, e.g., Homa Bay at landing stage, and expected to occur in the Tana River and tributaries such as the Mogus.

This nominal subspecies is considered a synonym of *O. niloticus* by some authorities.

DESCRIPTION:

Maximum known length 50.0 cm TL. D XVI-XVII, 11-13, spines subequal from V-VI; A III, 9-10, third spine > longest D ray, > in *O. niloticus*; P1 long, reaching beyond vertical through A base; P2 reaching vent or A base; C truncate (vs. rounded in adult *O. niloticus*); 31-32 LL scales; 2-3 scale rows on cheek; head almost 2x as long as wide; snout rounded with straight or curved upper profile, much wider than long; mouth extending to between nostril and eye; live specimens dark brown dorsally, with or without indistinct cross bars, yellowish ventrally; head and flank flushed red; a black opercular spot; fins brown or blackish, uniform or with oblique streaks on soft D; vertical stripes on C distinct, anastomosing basally; nuptial male with black abdomen, P1, D and A.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY CICHLIDAE - Cichlids

Oreochromis niloticus sugutae Trewavas, 1983

Suguta tilapia
 "Sopore", "Sibore" (Lake Baringo); "Nyamami" (DhoLuo, Lake Victoria)



(Photo credit: Ruud Wildekamp)



(NMK FW 1487/1-11)

DISTRIBUTION AND NOTES:

Endemic to the Suguta River and its tributaries, such as the Karpado.

DESCRIPTION:

Maximum known length 25.0 cm TL. D XIV-XVI, 12-14; A III, 9-11; P1 relatively short; C slightly emarginate to truncate, lower rays sometimes densely-scaled; 31-33 LL scales; usually 2, rarely 3, rows of cheek scales; male genital papilla conical with a subterminal pore; live specimens greenish dorsolaterally, darkening to red- or brownish-green with brownish dorsum in mature individuals; opercular spot distinct; in mature male: operculum pink, iris with a bright red border, branchiostegal membrane yellow, abdomen off-white, P1 and P2 pale yellow, A orange-yellow with silverish spots and reddish margin, D dark brown with silver-white spots on membrane, C with brown vertical stripes and variable green-blue markings forming a series of indistinct spots, or sinuous stripes forming a network pattern; posterior portion of C red; lappets with narrow brown or black margin, notches between posterior lappets reduced; pigmenta-

tion uneven on throat and abdomen; P2 and A darkish; mature female: iridescent green cheek and operculum, iris with dull red border, lips pinkish, throat and abdomen white with black spots, P1 pale yellow suffused with pink, C with brown stripes on a pale pinkish background, P2 pale with greenish inner border, A brown with paler translucent patches, D with fawn patches; preserved specimens often with 9-10 dark vertical flank bars; juvenile with one or two blotches along lateral mid-line, soft D and A often spotted.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY CICHLIDAE - Cichlids

Oreochromis niloticus vulcani (Trewavas, 1933)

Turkana tilapia

“Kokine”, “Rogene” (Turkana, Lake Turkana); “Sigir orok” (El Molo, Lake Turkana)



(NMK FW 3023/1-8)

DISTRIBUTION AND NOTES:

Endemic to the Lake Turkana drainage, e.g., springs at Loyangalani, eastern shores of the lake. Used in aquaculture at Sagana fish farm in the upper Tana River.

This subspecies was originally described as *Tilapia vulcani* Trewavas 1933, and is considered a current synonym of *O. niloticus* by some authorities. It has been misidentified as *T. nilotica*, *Sarotherodon niloticus* (Hopson & Hopson 1982) and is possibly conspecific with the fossil species *T. crassispina* Arambourg 1948.

DESCRIPTION:

Maximum known length 30.8 cm TL. D XV-XVII, 14-16; A III, 10-11, A spine III \approx half HL, sometimes \approx posterior D ray; P1 reaching or extending beyond A base; C truncate; 32-34 LL scales; 2-3 rows of cheek scales; maxillary extending to below anterior margin of eye; live male dark green with blue iridescence or dark blue, P1 and P2 darker; nuptial male black ventrally and with black P1, D, and A; males entirely dark in some populations, except transparent P1 with red rays and white genital papilla; C margin red; dorsum of head sometimes bright sky-blue.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Oreochromis spilurus niger (Günther, 1894)

Athi River tilapia
“Ngege” (Athi River, Meru Tana River system); “Pali”, “Kipapara”, “Kina” (Athi River)



(Photo credit: Luc de Vos/NMK)

DISTRIBUTION AND NOTES:

Native to the upper Athi River, e.g. near Athi River town, its tributaries above Lugard’s Falls, and upper tributaries of the Tana River, e.g., the Makindu and Tsavo Rivers. Introduced in many dams and river systems elsewhere. According to Trewavas (1983) the distribution of *Oreochromis spilurus spilurus* and *O. s. niger* in Kenya was quite separated during the 1930s, although artificial stocking had been taking place since the 1920s. Today it difficult to encounter pure populations of *O. spilurus niger*, however, due to extensive hybridisation with *O. spilurus spilurus*.

O. s. niger was introduced to Lake Naivasha in 1926 but subsequently disappeared, probably due to competition with more recently introduced tilapiines. It was also introduced but later eradicated from Nakuru when the lake became temporarily dessicated.

This subspecies was originally described as *Oreochromis niger* Günther 1894, and is currently considered a synonym of *O. spilurus* by some authorities. It has also been referred to as *Tilapia nigra*, *T. spilurus nigra*, *T. nigra nigra*, and *T. nilotica* var. *athiensis* Boulenger 1916. *T. athiensis* Hubbs 1918 and *T. browni* (non Nichols 1923) are junior synonyms. See Trewavas (1983) for further details.

DESCRIPTION:

Maximum known length 35.0 cm TL. D XVII-XIX, 9-12; A IV, 9; P2 extending to A; 29-32 LL scales; 2-3 rows of cheek scales; C truncate, not heavily scaled; scales smooth; HL \approx half body length; upper profile of snout straight or slightly

convex in juvenile, concave and elongate with upper jaw pronounced in mature individuals; male genital papilla short, club-shaped or with a shallow distal notch; proximal portion of D grey, bright blue with yellow spots posteriorly, lappets bright red; C grey with yellow spots, margin bright red; P1 deep blue and red with colourless membrane; opercular spot black; flank silver-grey, outer edges of scales yellow ventrally; 7-9 dark vertical bars extending from D base to midbody, not always visible and disappearing quickly if fish stressed; ventral portion of head and abdomen white or yellow; dorsal surfaces grey-brown to olive-brown; upper lip dark grey, lower lip yellow, white at corners; a dark grey bar immediately below lower lip, remainder of throat yellow-white to dusky-green; iris distinctively silver; adult female: preorbital brassy-green, nape brassy, snout darker, lower lip white, flanks yellowish-silver with faint vertical bars, no lateral spots, isthmus yellow, C with grey network pattern and yellowish interstices, D lappet tips red; juvenile: silver with dark vertical bars on body, sometimes with a faint mid-lateral spot, C normally marked with relatively regular bars, tilapia mark small and not sharply defined, undistinguishable in specimens > 9.0 cm SL; preserved specimens of all ages dark with black fins.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY CICHLIDAE - Cichlids

Oreochromis spilurus percivali (Boulenger, 1912)

Buffalo Springs tilapia



(NMK FW 105/1-10)

DISTRIBUTION AND NOTES:

Upper Northern Ewaso Nyiro above Chanler's Falls, e.g., hot springs in the Buffalo Springs National Reserve.

Taxonomic status uncertain, and currently considered a synonym of *O. spilurus* by some authorities. Originally described as *Tilapia percivali* Boulenger 1912, and may be synonymous with *T. nyirica* Lönnberg 1911.

DESCRIPTION:

Maximum known length 18.0 cm. TL. D XIII-XV, 11-13, spines increasing in length posteriorly; A III-IV, 9-10, third spine < half HL; P1 reaching A origin; P2 reaching vent or A; C subtruncate with rounded edges, may be scaled basally; 29-31 LL scales; 2-3 rows of cheek scales; body depth equal to HL; head as long as wide; mouth large and wide, extending to below anterior margin of eye; snout rounded with straight or slightly convex upper profile; lips strongly developed; genital papilla in mature male prominent, conical or club-shaped with a subterminal pore, located very close to anterior A spine in female; live mature male: rich brown to black dorsally and laterally, lighter ventrally, lips white; C orange with crimson spots and narrow vertical bars, melanophores mixed with iridescent guanophore; nuptial male: uniform golden or with yellow margins on flank scales, A with grey spines and yellow soft rays, throat and abdomen white, light blue during courtship, C and P1 orange, genital papilla white; female green on body, darker dorsally, whitish ventrally; preserved female and juvenile light brown with faint vertical bars, more prominent on midbody in some specimens; an ill defined tilapia mark present in most specimens.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Oreochromis spilurus spilurus (Günther, 1894)

Sabaki tilapia

“Nkutu” (Pokomo, Lower Tana); “Kipapara” (Giriama, Lower Tana); “Para Para” (Digo, South Coast)



(Photo credit: Luc de Vos/NMK)

DISTRIBUTION AND NOTES:

Present in all east-flowing rivers except the upper Athi, including floodplains, warm saline lakes and coastal lagoons. Recorded from the Voi system, coastal drainages from the Mwena basin near the Tanzanian border to the lower Sabaki-Galana below Lugard's Falls, pools and lakes in the Athi flood-plain and coastal lagoons near its mouth including the warm saline lake Chem Chem, lower and middle Tana, Loi, and Northern Ewaso Nyiro below Chanler's Falls. Has also been introduced in many artificial lakes and other river systems including lakes Kamnarok and Turkana. Records from the Southern Ewaso Nyiro (see Trewavas, 1983) are unsubstantiated.

Originally described as *Chromis spilurus* Günther 1894 and considered to have a number of synonyms by some authorities. See Trewavas (1983) for more details.

DESCRIPTION:

Maximum known length 25.0 cm TL. D XIV-XVIII, 10-13; A III-V, 8; P1 extending to or slightly beyond A base; C truncate, scaled basally; scales smooth; 29-31 LL scales; 2+ rows of cheek scales; body scales smaller ventrally; interorbital space flat; male genital papilla conical or club-shaped with a subterminal pore, bluntly bifurcate beyond pore in one mature specimen measuring 9.8 SL; live specimens greenish to silverish laterally; female and immature male buff yellow with a series of midlateral markings; opercular spot blackish; CP marking blackish, located close to upper margin and C base; D and C with rows of blackish spots; P2 and A predominantly sky-blue; mature male intense golden yellow posterolaterally, conspicuous bright blue regions on D, A, and P2, orange or red D lappets; male generally of variable colour pattern, although most display some yellow laterally and light blue patches on fins; scales red; preserved specimens usually with a dorsal blotch on CP.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Oreochromis variabilis (Boulenger, 1906)

Victoria tilapia

“Mbiru”(DhoLuo, Lake Victoria); “Ngege” (DhoLuo, Luhya, Lake Victoria)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Endemic to the Lake Victoria basin including affluent rivers such as the Yala and Nzoia, although it is in strong decline or has already disappeared in many areas. Also lacustrine in lakes Kanyaboli and Sare, plus Muhuru Bay. Cultured in ponds in Bongoma, Butere, Emuhaya, Hamisi, Igulu, Khwisero, Malava, Minere, Navakhalo, and Vihiga districts of Western province. Originally described as *Tilapia variabilis* Boulenger 1906.

DESCRIPTION:

Maximum known length 32.0 cm TL. D XVI-XVIII, 11-12, spines robust, posterior longest, \leq half HL; A III, 10-11; P1 extending to vertical through A origin; P2 \approx reaching vent, rarely A origin; C truncate, oblique in adult with lower angle rounded; 31-33 LL scales; 2-3 rows of cheek scales; dorsal head profile curved; mouth small, slightly superior, extending to between nostril and eye; snout wider than long; nuptial male with conspicuous, highly ornate, branched, rosette, genital papilla several centimeters long; colour in live specimens variable; subadult uniformly grey to greyish-green; adult flank scales darker at centre, dorsal portion of flank and dorsum dark or pale blue-grey sometimes with a porcelain-like or pale-green sheen, abdomen greyish, some specimens olive-brown or vermillion on flank, others bright yellow with black markings, fins grey, C sometimes faintly spotted; D and C with red margins, tipped with scarlet in adult and subadult; juvenile with black ocellar tilapia mark on anterior D; D with orange tips throughout life; iris grey or dark hazel with a red ring around pupil; nuptial male: bluish-grey to bluish-green, C with bright orange outline; nuptial female similar to non-breeding individuals; a distinct phenotype with piebald black and silver markings with variable bright orange blotches, more common in female; juvenile: greyish-silver with 8-10 dark vertical stripes on flank and CP, D with orange outline; tilapia mark comprises a relatively indistinct black marbled region.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY CICHLIDAE - Cichlids

Haplochromis chilotes (Boulenger, 1911)

Thicklip haplo
 "Fulu" (DhoLuo, Lake Victoria)



(Photo Source: Kevin Bauman)

DISTRIBUTION AND NOTES:

Endemic to the Lake Victoria basin. Expected to occur around mouths of the Lambwe and Kuja rivers, and also inhabits sheltered, rocky, sublittoral and littoral areas, e.g., Mbita Point.

Paratilapia chilotes Boulenger 1911 and *Paralabidochromis chilotes* (Boulenger 1911) are current synonyms.

DESCRIPTION:

Maximum known length 17.0 cm SL; male typically 12-14 cm SL, female 8-9 cm SL; D XVI-XVIII, 9, spines increasing in length posteriorly, longest soft rays almost half HL; A III, 8-9, third spine longest, equal to posterior D spine; P1 almost reaching vertical through A base; P2 reaching A base; C truncate; 31-32 LL scales; 3 rows of cheek scales; body scales denticulate; body robust; snout pointed with straight or slightly convex upper profile; jaws equal, maxillary not extending to below anterior margin of eye; lips thick, pronounced into a globular swelling projecting beyond mouth; live specimens brown dorsally, whitish ventrally; spinous fin rays sky blue with bright red tips, many small spots between rays; snout brilliant blue; male: body blue to blue-green, abdomen bright-red to orange; flank with 5-7 dark transverse bars crossed by a dark longitudinal band extending from behind eye to CP; C with blue rays and small red blotches; A red-orange, sky blue distally, 3 large yellow ocelli with blackish outline; P2 dark blue to black; P1 colourless; 2 black vertical bars on head, first from anterior border of eye to corner of lip, second from posterior border of eye to between cheek and gill opening; iris eye pale yellow with black spot on outer portion; pupil black; stressed male faded blue with silver reflections from bars and stripes; red flush on abdomen; female: silver-green; fins colourless except for small red flecks on C, some specimens with small colourless ocelli on A but less well-defined than in male.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis chromogynos Greenwood, 1959

Purple-yellow haplo
"Fulu" (DhoLuo, Lake Victoria)



(Photo Source: Kevin Bauman)

DISTRIBUTION AND NOTES:

Endemic to the Lake Victoria basin. Expected to occur around the mouths of rivers such as the Lambwe and Kuja, but also lacustrine, e.g. at Mbita Point.

Paralabidochromis chromogynos (Greenwood 1959) is currently a synonym.

DESCRIPTION:

Maximum known length 11.0 cm SL. D XV-XVI, 8-10; A III, 8-9; P1 slightly shorter than HL; anterior P2 ray variably pronounced but usually reaching spinous portion of A; 31-34 LL scales; 2-4 rows of cheek scales; 8 or 9 scales between P1 base and P2 base; abdominal scales small; mouth lateral, jaws of equal length; lips thickened, posterior tip of maxilla extending to or slightly beyond vertical through anterior margin of orbit; most live females display a variable, black and yellow, piebald 'bicolour' colour pattern; preserved female yellow-white, silver or brown; preserved male greyish-brown to grey; lips, lower jaw and anterior portion of branchiostegal membrane lighter; 6-7 faint transverse bars on flank and CP; a faint lachrymal stripe often present; D with dusky spinous rays, lappets lighter, soft rays orange-yellow; A dusky on basal half, orange-yellow distally, with 1-3 white ocelli arranged in a single row; C dark with a broad, orange-yellow margin; P2 black anteriorly, orange posteriorly.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis spec. "Rock Kribensis"

Rock krib haplo
"Fulu" (DhoLuo, Lake Victoria)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Endemic to Lake Victoria. Occurs around mouths of rivers such as the Lambwe and Kuja, and in rocky littoral habitats, e.g., at Mbita Point.

An unidentified taxon lacking official description to date.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Pseudocrenilabrus multicolor victoriae Seegers, 1990

Dwart Victoria mouthbooder
"Ajuoga" (DhoLuo, Lake Kanyaboli)



(Photo credit: Diane Brown)

DISTRIBUTION AND NOTES:

Affluent rivers entering Lake Kanyaboli, e.g., the Yala drainage, and other tributaries in the Lake Victoria basin, plus the Nyando floodplains and ponds around Ahero and Kisumu. Introduced to the upper Athi and upper Tana systems.

DESCRIPTION:

Maximum known length 8.0 cm TL; D XIII-XVI, 8-10, spines subequal or increasing in length posteriorly; A III, 6-10; P1 and P2 not reaching A origin; 25-29 LL scales; snout straight or convex; live specimens greyish or olive, with or without regular dark vertical bars and an interrupted blackish lateral stripe; a dark bar often extending from below anterior portion of eye to mouth; a black opercular spot and another at C base; soft D and A dark with transverse series of white spots which may form streaks in male, sometimes with dark bars on C and a red spot at tip of A.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis spec. "Victoria 1"

Long snout haplo
"Oduol" (DhoLuo, Lake Victoria)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Endemic to the Lake Victoria basin. Recorded from open waters behind Rusinga Island in Kenya.

An unidentified taxon.

DESCRIPTIONS:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis spec. "Victoria 2"

Hippo Point salmon
"Fulu" (DhoLuo, Lake Victoria)



(Photo Source: Kevin Bauman)

DISTRIBUTION AND NOTES:

Endemic to Lake Victoria. Occurs around mouths of rivers including the Lambwe and Kibos, and close to sandy beaches around Hippo Point, Kisumu, and Mbita Point.

An unidentified taxon.

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis orthostoma Regan, 1922

“Fulu” (DhoLuo, Lake Victoria)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Known only from the Lake Victoria basin, with records from the Nzoia River, Lake Kanyabul, plus Victoria itself.

Pyxichromis orthostomata is a synonym.

DESCRIPTION:

Maximum known length 9.1 cm SL. Male larger than female; live male greenish with red dorsum, more intense during courtship; female uniform silvery.

[Incomplete].

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY CICHLIDAE - Cichlids

Sarotherodon galilaeus galilaeus (Linnaeus, 1758)

Galilaea tilapia

“Kokine”, “Nanyang” (Turkana, Lake Turkana); “Yerigo” (El Molo, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

In Kenya present only in Lake Turkana.

Originally described as *Sarus galilaeus* Linnaeus 1758. *Tilapia galilaea* (Linnaeus 1758) is a synonym, *T. galilaea* a misspelling.

DESCRIPTION:

Maximum known length 40.0 cm TL. D XIV-XVII, 11, soft rays longer in mature male; A III, 9-13; P1 usually extending to vent or spinous A rays; P2 pronounced into a short white filament reaching vent; C slightly emarginate, not densely scaled, in young specimens small scales may extend on or between rays on proximal half of fin; 29-32 LL scales; 2 rows of cheek scales; body deep, mouth small, interorbital space wide; snout profile straight; genital papilla small in both sexes, subconical in male, a short scalloped funnel in female; live specimens pale silvery-grey dorsally, whitish ventrally; 3-5 vertical bars of variable intensity may be present on flank, dependant on mood; D margin orange or pinkish; C unspotted, with broad intense pink or reddish margin; flank and operculum silvery to bright silver; non-nuptial specimens: pale yellowish-white ventrally, black vertical bars and midlateral stripe composed of irregularly arranged spots, D generally with 6-8 yellow spots with orange margins, iris yellow; nuptial individuals: dusky greyish-silver ventrally, black vertical bars and mid-lateral stripe continuous, D spots pinkish, iris yellow with vertical black bar.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Tilapia rendalli (Boulenger, 1896)

Redbreast tilapia

“Kokine”, “Nanyang” (Turkana, Lake Turkana); “Yerigo” (El Molo, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Occurs throughout lower reaches of major rivers flowing into Lake Victoria plus many other river systems and artificial lakes. It was introduced into the Lake Victoria basin for culture in 1955 from an unspecified source in Botswana (Welcomme, 1988; Lever, 1996), and later established elsewhere. Now present in the Tana (Mann, 1966; 1968), Pangani, including Lake Jipe, and Athi/Sabaki systems, plus eastern shores of Lake Challa. Native range is West and Central Africa.

Has been misidentified as *Tilapia melanopleura* Boulenger 1911 and *Oreochromis spilurus niger* (De Rham 1991) in the past.

DESCRIPTION:

Maximum known length 25.0 cm TL. D XVI-XVI, 12-13, spines increasing in length posteriorly, longest \approx half HL; A III, 9-10, third spine longest, equal to central D rays; P1 pointed, $>$ HL; P2 short, not reaching vent; C emarginate; 28-32 LL scales; scales rough, not denticulate; 4 rows of cheek scales; large scales on opercle and interorbital region; body deep; juvenile with rounded head, beak-like mouth; head profile convex; mouth protruding; preopercular limbs forming a right angle; eye \approx equidistant from snout tip and gill-opening; maxillary not extending to below anterior margin of eye; live mature specimens olive green to brown, often with scattered blue scales; 5-7 broad dark olive vertical bars on body; a well-defined tilapia mark; throat and abdomen bright red; extremities of soft D, A, and lower half of C yellow to red; P1 without pigment in juvenile, soft D with bars, body without distinct markings, snout and opercular spot blackish, D with blackish spots and oblique bars.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY CICHLIDAE - Cichlids

Tilapia zillii (Gervais, 1848)

Redbelly tilapia

“Kokine”, “Loroto” (Turkana, Lake Turkana); “Kido” (El Molo, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Tributaries within the Lake Victoria system, and expected to occur in the Mara River basin. Introduced into Kenyan waters from Lake Albert between 1953-1955 in order to fill a "vacant niche" (Welcomme (1967, 1988) and now occurs throughout the lake. Introduced into Lake Naivasha and the Tana River in 1955, while Mann (1968) reported an established "wild" population in the Tana River. Occurs naturally in Lake Turkana, e.g., Loyangalani, eastern shore. Cultured in ponds in Bungoma, Butere, Emuhaya, Hamisi, Igulu, Ikolomani, Kabras, and Kakamega districts, and Khwisero, Lugari, Lurambi, Malava, Minere, Navakholo, Shinyalu, and Vihiga municipalities in Western Province. In Nyanza Province it is cultured in Kisii, Migori, and Siaya.

DESCRIPTION:

Maximum known length 30.5 cm TL; XIV-XVI, 10-13, posterior spine longest, central soft rays pronounced in adult, usually equal to HL; A III, 7-10, shorter than longest D ray, third soft A ray usually longest; P1 ≤ HL, rarely extending to vertical through A origin; P2 usually reaching vent or A; C truncate to subtruncate, rounded in senescent specimens; 28-33 LL scales; body scales weakly denticulate; 3-4 rows of cheek scales, scaled region ≥ OD in adult; body deep; head up to 2x as long as wide; snout straight to slightly concave, slightly wider than long, ≤ postorbital length; mouth usually large, sometimes extending to anterior margin of eye; live specimens dark green, olive, or brown with iridescent blue sheen, ventral portion of body often dark red; abdomen pinkish, black with an intense crimson flush in nuptial individuals; body usually with 6-8 distinct dark vertical bars, a dark midlateral stripe sometimes present; opercular spot black; large blackish tilapia mark almost completely outlined in yellow; sometimes a dark vertical bar below eye; lips bright green; D, C and A olive with yellow spots, D and A often with dark streaks, outlined by a narrow orange band; C often dark, with or without round whitish spots; nuptial specimens tend to have more intense colour pattern.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY CICHLIDAE - Cichlids

Haplochromis phytophagus Greenwood, 1966

Christmas haplo
 "Fulu" (DhoLuo, Lake Victoria)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

In association with lower reaches of the Nzoia and Yala rivers, plus the Yala Swamps system within the Lake Victoria basin. Also lacustrine and often associated with vegetation, e.g., in Lake Kanyaboli.

Xystichromis phytophagus (Greenwood 1966) is a synonym.

DESCRIPTION:

Maximum known length 8.6 cm SL. D XII-XVIII, 8-10; A III, 8-9; C truncate, scaled basally; 30-32 LL scales; body scaleless between upper lateral line and D base; dorsal head profile slightly curved or straight, sloping at an angle to horizontal; snout slightly wider than long; mouth terminal or slightly superior, lips not noticeably thickened, posterior tip of maxilla reaching or extending beyond vertical through anterior margin of orbit; live specimens of both sexes dark green, lighter ventrally, female and sexually inactive male silvery; nuptial male brown, silver-grey ventrally, dorsum of head dark, a faint to distinct lachrymal stripe present, no nuchal or interorbital bars, very faint traces of short, vertical bars or blotches on midbody region; D dusky, lappets black; A greyish with 3-4 dark-white ocelli; C dark basally, hyaline distally; P2 entirely dusky, dusky on outer portion, or entirely hyaline; female and juvenile light grey-brown, silver ventrally, flanks often crossed by up to 8 faint vertical bars extending to upper lateral line dorsally, to \approx level with a vertical through anterior portion of P2 base ventrally; posterior 2 bars fused into a short longitudinal blotch in some specimens; all fins hyaline and yellowish, D sometimes faintly greyish-black, upper half of C with dark spots; preserved nuptial male brown dorsally, dusky brown ventrolaterally and on CP; a distinct broad lachrymal stripe extending from

angle of jaw to anterior margin of orbit; a narrower, much fainter diffuse band and anterorbital stripe across dorsum of head, absent in some specimens; some specimens with 6-7 very faint vertical bar midlaterally on flank, which may be linked by a faint longitudinal stripe at upper lateral line; D dusky, melanophores most concentrated basally on soft portion; lappets black; C dark on proximally, dark hyaline distally; A spines black, remainder of C dusky proximally, hyaline distally; 3 greyish ocelli close to posteroventral margin of soft portion; P2 dusky.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY CICHLIDAE - Cichlids

Haplochromis laparogramma Greenwood and Gee, 1969

“Fulu” (DhoLuo, Lake Victoria)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Endemic to Lake Victoria where it is pelagic.

The vernacular name refers to the conspicuous midlateral line. *Yssichromis laparogramma* (Greenwood & Gee 1969) is a synonym.

DESCRIPTION:

Maximum known length 8.5 cm SL. D XV-XVI, 9-10; A III, 8-9; anterior P2 ray pronounced in both sexes; C truncate, scaled basally; 32-35 LL scales; 2-4 rows of cheek scales; dorsal head profile straight or slightly curved in nuchal region; snout as long as wide; lower jaw sloping steeply, jaws equal or lower projecting slightly, terminating in a low mental protuberance; posterior extension of maxilla variable from a point slightly anterior to margin of orbit to below anterior portion of eye; live adult male dark blue dorsally, greenish-silver laterally, silver ventrally, a dark midlateral stripe extending from behind head to base of C; dorsum of head brownish to yellowish-brown, snout sometimes crossed by 2 distinct, chevron-shaped dark bars, apex oriented towards mouth; opercle and cheek yellowish, branchiostegal membrane dusky; D and C pale yellowish-orange, A hyaline with orange ocelli; P2 black; preserved male light to dark brown in dorsally and on CP, silver ventrally, with faint duskiness laterally and anteroventrally in some specimens; brown and silver pigmentation distinctly demarcated by a midlateral stripe extending from behind operculum to C base, usually broader anteriorly; snout dusky with faint traces of 2 transverse bars, upper interocular, occiput dusky in some individuals; faint broad lachrymal stripe in all specimens; midlateral stripe sometimes extends anteriorly across operculum to vertical preoperculum limb; D and A hyaline with dusky lappets, A ocelli white, C hyaline, darker basally; P1 dusky to black; preserved female similar but ventral duskiness absent.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY MUGILIDAE - Mullet

Chelon macrolepis (Smith, 1846)

Large-scaled mullet
"Kampango" (Giriama, Galana River)



(Photo credit: John E. Randall)

DISTRIBUTION AND NOTES:

Marine species entering lower courses of east-flowing rivers including the Sabaki and Galana.

This species was formerly included in the genera *Mugil* and *Liza*.

DESCRIPTION:

Maximum known length 60.0 cm SL. D1 IV, D2 I, 7-8, base of D1 closer to C base than snout tip; A 9-10, origin anterior to D2, base soft, scaled; D2 and A falciform; auxiliary D scale well developed; auxiliary P1 scale rudimentary; P1 15-18, extending to P2, elongate and oriented superiorly; P2 5, base equidistant between snout tip and A base; C 15, forked, lobes blunt; rayed portion of A, P2, and C coated with small, delicate, membranous scales; P2 and D1 bases with an elongate pointed scale on each side; P2 and A posterior margins almost equal; 30-35 LL scales; 4 rows of quadrangular scales below eye, oriented ventrally, two lowermost rows commencing at posterior extremity of lower jaw, opercular scales large with three posterior edges, those adjoining eye smaller; scales on dorsum of head very large and regular; snout moderately broad, slightly arched, two nostrils on each side, close together; body truncate or cylindrical, moderately robust, dorsal outline almost straight, ventrum distinctly arched between head and A, almost straight posterior to A; maxilla exposed when mouth closed; upper margin of operculum notched close to P1 base; live specimens lavender-purple to pearl-grey dorsally, with oil-green sheen anterior to D, yellowish-white with faint traces of lilac purple ventrally (or silver-grey dorsally, bluish laterally, silverish-white ventrally); posterior edge of each scale semipellucid; P1, A and C pale orange, P1 most intensely, P1 golden basally; operculum pale purplish-white with hints of violet-purple (or silver-blue, flap whitish); infraorbital space white with ochre-yellow.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY MUGILIDAE - Mullet

Moolgarda malabarica Bleeker, 1853

Bluetail mullet



(Photo credit: Trevor Meyer)

DISTRIBUTION AND NOTES:

Primarily marine species ascending the Sabaki and Galana rivers.

Previously misidentified as *Valamugil buchani* (Bleeker 1853) in Kenyan literature.

DESCRIPTION:

Maximum known length 100.0 cm TL. D IV/I, 7-9, first D origin closer to C base than snout tip, or midway between them; A III, 9; P1 17-19, auxiliary scale very long; 32-37 LL scales; adipose eyelid absent; live specimens with a gold patch on operculum; P1 yellow with a dark blue spot on upper portion of base.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY ELIOTRIDAE - Sleepers

Eleotris fusca (Schneider in Bloch & Schneider, 1801)

Dusky sleeper, brown gudgeon
 “Vumbika” (Digo, South Coast)



(Photo credit:K.T. Shao. The Fish Database of Taiwan. WWW Web electronic publication. version 2009/1
<http://fishdb.sinica.edu.t>. (2011-6-1))

DISTRIBUTION AND NOTES:

Marine species entering lower reaches and estuaries of all east-flowing coastal rivers including the Tana, Sabaki and Ramisi.

DESCRIPTION:

Maximum known length 26.0 cm TL. D VI/I, 8, narrowly separated; A I, 8, origin posterior to second D origin; P1 broad, rounded, longer than P2; C long, pointed; CP elongate; 57-78 LL scales; body scales strongly ciliated; body weakly compressed; head depressed, longer than wide, scaled except on snout; a postocular groove on each side; mouth large, extending to below centre of eye; cheek scaled to below eye; snout broad, rounded; lower jaw projecting; maxillary extending to below posterior portion of eye; preoperculum with a strong, angled antrorse spine covered with skin; live specimens dark brown to black with a series of light horizontal stripes; fins often with small light spots; first D sometimes with light and dark ocellar spots; C with vertical bars.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY GOBIIDAE - Gobies

Awaous aeneofuscus (Peters, 1852)

Freshwater goby

“Chokole” (Pokomo, Lower Tana); “Jumburu” (Giriama, Lower Tana); “Kijumburu” (Giriama, Galana River)



(Photo credit: Ronald E. Watson)

DISTRIBUTION AND NOTES:

Enters lower reaches of all east-flowing coastal rivers including the Tana, Athi, Sabaki-Galana (lower Sabaki River at Jilore), and also recorded at Mzima Springs (Tsavo system).

Originally described as *Gobius aeneofuscus* Peters 1852. Hoese (1986) used the generic name *Awaous* while Maugé (1986) placed it in the generic name *Chonoforus*. The argument of Skelton (1993) to use *Awaous* is followed here.

DESCRIPTION:

Maximum known length 26.0 cm SL. D VI/I, 9-11, widely separated, longest rays \approx half HL; A I, 10-11, origin below second D; P2 with a broad basal membrane, terminating far from vent; C rounded, shorter than head; 50-64 LL scales; body scales strongly ciliated; body cylindrical or weakly compressed; head depressed, broader than deep; cheek and operculum unscaled; snout rounded, upper profile curved; OD equal to interorbital width in adult; mouth subinferior, subterminal, larger in male, extending \approx to anterior margin of eye; upper lip thick; upper jaw projecting slightly; live specimens olive-brown or greenish brown with darker brown blotches and wavy stripes dorsally, a dark stripe extending anteriorly from eye, metallic bronzy or golden laterally, whitish ventrally; second D with numerous small blackish spots; C with transverse series of black spots which may be confluent forming irregular cross-bars.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY GOBIIDAE - Gobies

Glossogobius giuris (Hamilton-Buchanan, 1822)

Tank goby, bar-eyed goby, flathead goby

“Chokole” (Pokomo, Lower Tana); “Jumburu” (Giriama, Lower Tana); “Kijumburu” (Giriama, Galana River)



(Photo credit:: Yang Ningsheng)

DISTRIBUTION AND NOTES:

Lower reaches of all east-flowing coastal drainages including the Tana and Sabaki-Galana drainages, e.g., lower Sabaki River at Jilores; at Mariakani.

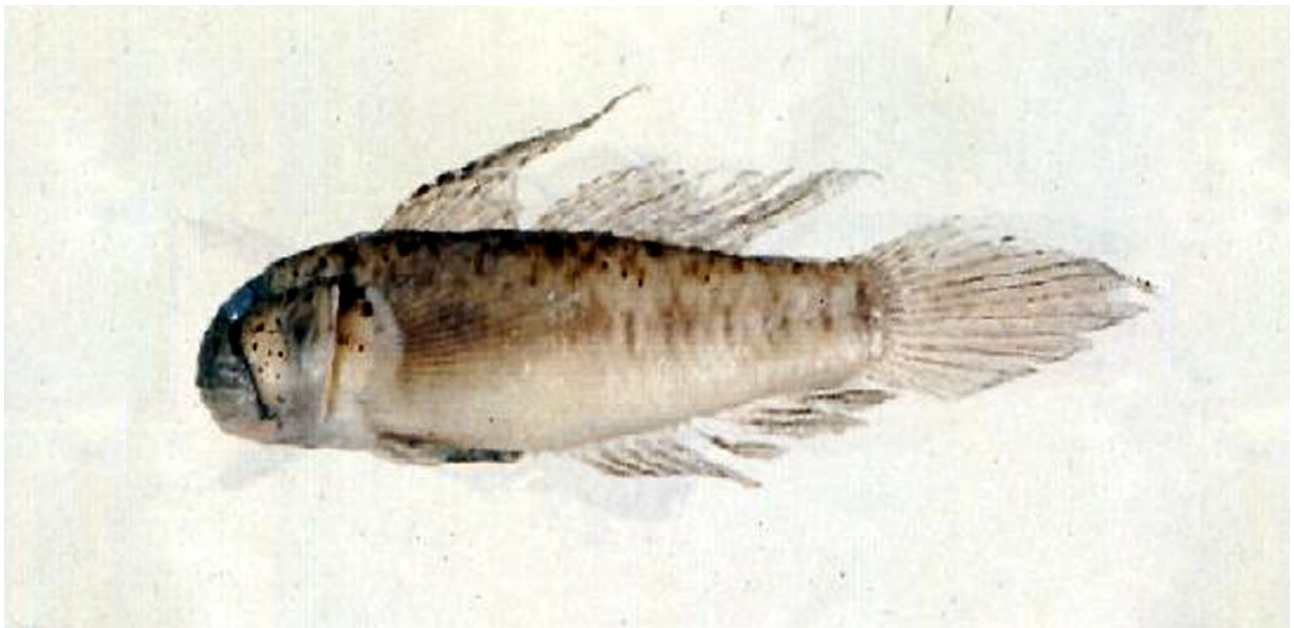
DESCRIPTION:

Maximum known length 50.0 cm TL. D VI/I, 8-11, spines longer than soft rays, second spine longest, remainder diminishing in length, soft rays of nearly equal length; D2 sharply pointed, first ray undivided, remainder branched, posterior divided to base; C bluntly or sharply pointed; A I, 7-9; 29-35 LL scales; body scales imbricate, terminating at an angle and firmly adhered posteriorly; upper portion of opercle scaled; P1 large, rounded; P2 small, forming a disc-like structure ventrally; head depressed, wider than body; mouth very large, descending posteriorly; jaws flattened, lower projecting strongly, upper protrusible; gill opening wide; lateral line straight; nostril located anteriorly on snout, with two apertures on each side, midway between eye and mouth; 3-5 lines of papillae on cheek; nape with visible scales; eyes well posterior to snout; live specimens translucent brown to pale green with dark brown or black spots and blotches dorsally and laterally, forming a midlateral series; some lateral golden markings, somewhat diaphanous ventrally; D rays and C with numerous rows of black spots.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY GOBIIDAE - Gobies

?Oligolepis acutipennis (Valenciennes in Cuvier & Valenciennes, 1837)

Sharptail goby



(Photo credit: K.T. Shao. The Fish Database of Taiwan. WWW Web electronic publication. version 2009/1
<http://fishdb.sinica.edu.tw>, (2011-6-1))

DISTRIBUTION AND NOTES:

Marine species entering estuaries and lagoons (Maugé, 1986), such as the lower Sabaki basin.

The specimen stored at BMNH under the name *Oligolepis acutipennis* may represent a misidentification of *Stenogobius kenya* Smith 1959, and the fish occurring in Kenya is unlikely to be *O. acutipennis*. The genus is in need of revision, with the name typically applied to any fish with comparable morphology, colour pattern and a pointed caudal fin.

DESCRIPTION:

Maximum known length 15.0 cm TL. D VI/I, 10, 3-5 D spines extended into filaments in male; A I, 11, base entirely below D; P1 21, oval-tipped; P2 I, 5; C pointed; 25-29 LL scales; cheek, operculum, predorsal, and prepelvic bases unscaled; centre of ventrum scaled; live specimens brownish with numerous dark blotches dorsally; a series of faint blotches, ≈ OD laterally, terminating at C base; a black stripe extending from eye to posterior tip of upper jaw; fins clear to dusky, often spotted.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY GOBIIDAE - Gobies

Stenogobius kenyae Smith, 1959

East African river goby, African river goby



(NMK FW 1278/1)

DISTRIBUTION AND NOTES:

Lower reaches of all east-flowing coastal rivers such as the Sabaki and Galana, e.g., lower Sabaki River at Jilore.

DESCRIPTION:

Maximum known length 12.0 cm TL. D VI/I, 10, spines 2-4 elongate in male, 3rd longest, soft rays longer posteriorly, equal to body depth, extending to C base when adpressed; A I, 10-11, extending to C base when adpressed; P1 not reaching vent; P2 \approx reaching vent, frenum strong; 46-50 LL scales, ctenoid posteriorly, cycloid on nape and ventrum; P2 base unscaled; prepelvicregion mostly unscaled, sometimes a few minute embedded scales; nape fully scaled to eye, head mostly unscaled, occasionally 3 small scales on upper portion of opercle; C pointed; head compressed; eye diameter fits 4x in HL, equal to snout; 5 vertical series of papillae below eye, 1-2 along cheek; anterior nostril extending as a small tube, paired nostrils set close together on snout; gill opening reduced; maxilla extending to between anterior margin and centre of eye; live specimens yellowish with darker markings, \approx 6 vertical bars on flank; A and P1 with dark margins.

CLASS: OSTEICHTHYES
 ORDER: PERCIFORMES
 FAMILY ANABANTIDAE - Labyrinth fishes

Ctenopoma muriei (Boulenger, 1906)

Ocellated labyrinth fish

“Sia” (DhoLuo, Lake Kanyaboli); “Oyuso nyaim” (DhoLuo, Lower Sondu-Miriwu)



(Photo Source: KMFRI)



(Photo dredit: Denis Tweddle/SAIAB 57037)

DISTRIBUTION AND NOTES:

Affluents of Lake Kanyaboli in the Lake Victoria drainage. Common in swamps near Ahero and those associated with shorelines throughout the Lake Victoria basin.

Originally described as *Anabas muriei* Boulenger 1906.

DESCRIPTION:

Maximum known length 10.0 cm TL. D XIV-XVI, 8-10, spines subequal from V-VI; A IX-XI, 8-11, similar to D; P2 ≈ reaching A base; C rounded; CP very short; 27-28 LL scales, lateral line interrupted, forming upper and lower series of poroid scales; BD equal to HL; snout rounded, < OD; anterior nostril extended as a tube; maxillary extending to below anterior portion of eye; preorbital and preoperculum complete; suboperculum serrated; operculum with two patches of strong serrae separated by a deep notch; accessory breathing-organ formed from first gill-arch; live specimens silver-grey to olive, numerous small black spots, blackish ocellus spot with yellowish border at C base.

CLASS: OSTEICHTHYES
ORDER: PERCIFORMES
FAMILY ANABANTIDAE - Labyrinth fishes

Ctenopoma spec. "Ochumbae"

Ochumba's labyrinth fish
"Oyuso nyaim" (DhoLuo, Lower Sondu-Miruwu)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

Lower reaches of affluent rivers within the Lake Victoria drainage. Also present in marginal swamps near Lake Kanyaboli and Ahero (Nyando River).

A small, unidentified *Ctenopoma* currently under investigation (L Kaufman *et al.*, work in progress).

DESCRIPTION:

[Incomplete]

CLASS: OSTEICHTHYES
 ORDER: TETRAODONTIFORMES
 FAMILY TETRAODONTIDAE - Puffers

Tetraodon lineatus Linnaeus, 1758

Nile puffer

“Lokwi” (Turkana, Lake Turkana); “Tuwate” (El Molo, Lake Turkana)



(Photo Source: KMFRI)

DISTRIBUTION AND NOTES:

In Kenya, restricted to Lake Turkana, e.g. Loyangalani on the eastern shore.

Tetraodon fahaka Rüppell 1829 is an objective synonym and it has also reported as *T. cf. rudolfianus* Deraniyagala 1948.

DESCRIPTION:

Maximum known length 43.0 cm TL. D 11-14, rounded; A 9-11, rounded, origin below centre of D; P1 rounded to subtruncate; HL \geq width; snout rounded, 2x OD; interorbital region convex; nostril absent, two nasal tentacles on each side of head; head and body with minute spines except on snout, around P1 base, and C region; juvenile with proportionally large head and eye; lateral line system visible as distinct furrows; live specimens dark olive-grey dorsally, yellow ventrally and on D, A, and P1; C dark olive with a broad orange margin; black lateral stripes on flank and CP, converging on dorsum; usually three stripes below P2 and three on each side of CP; dorsal stripes absent in some specimens, in which case dorsum uniform blackish olive, or with roundish lighter spots; some specimens with dark vertical bars on side of head; stripes indistinct or replaced by roundish spots in juveniles.

SYSTEMATIC CHECKLIST OF FRESHWATER FISH SPECIES

This summary contains all fish species known to occur in freshwaters of Kenya.

Abbreviations and notes:

TL: Maximum Total Length, SL: Maximum Standard Length, in cm. FL: Maximum Fork Length in cm. Indicated with an 'X': Auto. – Autochthonous Species; Exot. – Exotic Species; Reloc. – Relocated Species; Undes. – Undescribed Taxon; syn. – Synonymous names.

General remarks and annotations such as geographic range or primary synonyms are included in the main photo guide. See Daget et al. (1984, 1986, 1999) for full synonymy.

FAMILY	Max. TL	Auto.	Exot.	Reloc.	Undes.
Genus and species					
PROTOPTERIDAE					
1. <i>Protopterus aethiopicus</i>	200	X			
2. <i>Protopterus</i> aff. <i>amphibious</i> syn.: <i>Protopterus amphibious</i>	45	X			
3. <i>Protopterus annectens</i> syn.: <i>Protopterus annectens annectens</i>	100	X			
POLYPTERIDAE					
4. <i>Polypterus bichir</i> syn.: <i>Polypterus bichir bichir</i>	72	X			
5. <i>Polypterus senegalus</i> syn.: <i>Polypterus senegalus senegalus</i>	50.5	X			
OSTEOGLOSSIDAE					
6. <i>Heterotis niloticus</i>	105	X			
MORMYRIDAE					
7. <i>Gnathonemus longibarbis</i>	36	X			
8. <i>Hippopotamyrus grahami</i> syn.: <i>Marcusenius grahami</i>	25	X			
9. <i>Hyperopisus bebe</i>	55	X			
10. <i>Marcusenius</i> aff. <i>macrolepidotus</i>	20	X			
11. <i>Marcusenius victoriae</i> syn.: <i>Gnathonemus victoriae</i> <i>Gnathonemus rheni</i>	26	X			
12. <i>Marcusenius</i> spec. "Turkwel" or "Turkwel"		X			X
13. <i>Marcusenius</i> spec. "Omo"		X			X
14. <i>Marcusenius</i> spec. "Lake Victoria"		X			X
15. <i>Mormyrops anguilloides</i> syn.: <i>Mormyrops deliciosus</i>	150	X			
16. <i>Mormyrus bernhardi</i> syn.: <i>Mormyrus hildebrandti</i>	30	X			
17. <i>Mormyrus hildebrandti</i>	20 SL	X			
18. <i>Mormyrus kannume</i>	100	X			
19. <i>Mormyrus longirostris</i>	75	X			
20. <i>Mormyrus tenuirostris</i>	32.2 SL	X			
21. <i>Petrocephalus catostoma</i> syn.: <i>Petrocephalus degeni</i>	15 FL	X			
22. <i>Petrocephalus catostoma tanensis</i>	52.2	X			
23. <i>Pollimyrus nigricans</i> syn.: <i>Marcusenius nigricans</i>	10	X			
GYMNARCHIDAE					

24. <i>Gymnarchus niloticus</i>	151	X			
MEGALOPIDAE					
25. <i>Megalops cyprinoides</i>	100	X			
ANGUILLIDAE					
26. ? <i>Anguilla anguilla</i>	150		X	X	
27. <i>Anguilla bengalensis</i> syn.: <i>Anguilla labiata</i> <i>Anguilla nebulosa labiata</i>	145	X			
28. <i>Anguilla bicolor</i> syn.: <i>Anguilla bicolor bicolor</i> <i>Anguilla unicolor</i>	80	X			
29. <i>Anguilla mossambica</i>	120	X		X	
PRISTIGASTERIDAE					
30. <i>Pellona ditchela</i>	16 SL	X			
CHANIDAE					
31. <i>Chanos chanos</i>	100		X	X	
CYPRINIDAE					
32. 'Barbus' <i>apleurogramma</i> syn.: <i>Barbus amboseli</i>	5.5	X			
33. 'Barbus' <i>bynni</i> syn.: <i>Barbus meneliki</i> <i>Barbus bynni rudolfianus</i>	82	X			
34. 'Barbus' <i>cercops</i> syn.: <i>Barbus trispilopleura</i>	7.4	X			
35. <i>Labeobarbus altianalis</i> syn.: <i>Labeo rüPELLII</i> <i>Barbus altianalis</i> <i>Barbus radcliffii</i> <i>Barbus lobogenys</i> <i>Barbus bayoni</i> <i>Barbus pietschmanni</i> <i>Barbus hollyi</i> <i>Barbus procatopus</i>	90	X			
36. <i>Labeobarbus intermedius australis</i> syn.: <i>Barbus intermedius australis</i> <i>Barbus gregorii</i>	12.8 SL	X			
37. <i>Labeobarbus intermedius</i> syn.: <i>Barbus intermedius intermedius</i> <i>Barbus gregorii</i> <i>Barbus plagiostomus</i> <i>Barbus erlangeri</i>	59	X			
38. 'Barbus' <i>jacksoni</i> syn.: <i>Barbus nummifer</i>	14	X			

39. ' <i>Barbus</i> ' <i>kerstenii</i> syn.: <i>Barbus akeleyi</i> <i>Barbus lumiensis</i> <i>Barbus minchini</i>	10	X			
40. ' <i>Barbus</i> ' <i>lineomaculatus</i>	8.2	X			
41. ' <i>Barbus</i> ' <i>loveridgii</i>	7	X			
42. ' <i>Barbus</i> ' <i>luikae</i>	6.6 SL	X			
43. ' <i>Barbus</i> ' <i>magdalenae</i>	9	X			
44. ' <i>Barbus</i> ' <i>mariae</i> syn.: <i>Barbus matris</i> <i>Barbus oxyrhynchus</i> <i>Barbus rhinoceros</i>	34.2	X			
45. ' <i>Barbus</i> ' <i>mimus</i>	5.5	X			
46. ' <i>Barbus</i> ' <i>neumayeri</i> syn.: <i>Barbus percivali</i> <i>Barbus nairobiensis</i> <i>Barbus luzomela</i>	12	X			
47. ' <i>Barbus</i> ' <i>nyanzae</i>	7.5	X			
48. ' <i>Barbus</i> ' <i>ologogrammus</i>	6.1 SL	X			
49. ' <i>Barbus</i> ' <i>oxyrhynchus</i> syn.: <i>Barbus tanensis</i> <i>Barbus hindii</i> <i>Barbus perplexicans</i> <i>Barbus labiatus</i> <i>Barbus krapfi</i> <i>Barbus mathoiae</i> <i>Barbus ahlSELLi</i> <i>Barbus athi</i> <i>Barbus babaulti</i> <i>Barbus Nairobi</i> <i>Barbus donyensis</i> <i>Barbus copleyae</i> <i>Barbus gregorii</i>	46	X			
50. ' <i>Barbus</i> ' <i>paludinosus</i> syn.: <i>Barbus taitensis</i> <i>Barbus amphigramma</i> <i>Barbus macropristis</i> <i>Barbus thikensis</i> <i>Barbus helleri</i>	40	X			
51. ' <i>Barbus</i> ' <i>profundus</i> syn.: <i>Barbus radiatus radiatus</i>	12 SL	X			
52. ' <i>Barbus</i> ' <i>radiatus</i> syn.: <i>Barbus doggetti</i>	12 SL	X			

<i>Barbus radiatus radiatus</i>					
53. ' <i>Barbus</i> ' <i>sexradiatus</i>	7	X			
54. ' <i>Barbus</i> ' <i>stigmatopygus</i> syn.: <i>Barbus weneri</i>	6.5 FL	X			
55. ' <i>Barbus</i> ' <i>toppini</i>	4	X			
56. ' <i>Barbus</i> ' <i>turkanae</i>	5	X			
57. ' <i>Barbus</i> ' <i>venustus</i>	4	X			
58. ' <i>Barbus</i> ' <i>yongei</i>	7	X			
59. ' <i>Barbus</i> ' <i>zanzibaricus</i> syn.: <i>Barbus argyrotaenia</i>	9.7	X			
60. ' <i>Barbus</i> ' spec. "Athi"		X			X
61. ' <i>Barbus</i> ' spec. "Nzoia"		X			X
62. ' <i>Barbus</i> ' spec. "Sabaki"		X			X
63. ' <i>Barbus</i> ' spec. "Tsavo 1"		X			X
64. ' <i>Barbus</i> ' spec. "Tsavo 2"		X			X
65. ' <i>Barbus</i> ' spec. "Turkwell 1"		X			X
66. ' <i>Barbus</i> ' spec. "Turkwell 2"		X			X
67. <i>Chelaethiops bibie</i>	5.5	X			
68. ? <i>Ctenopharyngodon idella</i>	150		X	X	
69. ? <i>Carassius carassius</i>	64		X	X	
70. <i>Cyprinus carpio</i>	120 SL		X	X	
71. <i>Cyprinus carpio carpio</i>			X	X	
72. <i>Garra dembeensis</i> syn.: <i>Garra</i> sp. <i>Discognathus johnstonii</i> <i>Discognathus hindii</i> <i>Discognathus dembeensis</i>	16	X			
73. <i>Labeo bottegi</i> syn.: <i>Labeo percivali</i>	32	X			
74. <i>Labeo cylindricus</i> syn.: <i>Labeo montanus</i>	40	X			
75. <i>Labeo gregorii</i>	23.1	X			
76. <i>Labeo horie</i>	72	X			
77. <i>Labeo</i> aff. <i>mesops</i> syn.: <i>Labeo spec.</i> aff. <i>mesops</i> <i>Labeo mesops</i>	39	X			
78. <i>Labeo niloticus</i>	72.0	X			
79. <i>Labeo trigliceps</i>	49	X			
80. <i>Labeo victorianus</i>	32.5	X			
81. <i>Labeo</i> spec. "Baomo"		X			X
82. <i>Labeo</i> spec. "Mariakani"		X			X

83. <i>Labeo</i> spec. "Mzima 1"		X			X
84. <i>Labeo</i> spec. "Mzima 2"	45	X			X
85. <i>Leptocypris niloticus</i> syn.: <i>Barilius niloticus</i>	9.5	X			
86. <i>Neobola fluviatilis</i> syn.: <i>Engraulicypris fluviatilis</i>	7.3	X			
87. <i>Neobola stellae</i> syn.: <i>Engraulicypris stellae</i>	3.5	X			
88. <i>Raiamas senegalensis</i> syn.: <i>Raiamas loati</i>	24.5	X			
89. <i>Rastrineobola argentea</i>	9	X			
DISTICHODIDAE					
90. <i>Distichodus niloticus</i>	83	X			
CITHARINIDAE					
91. <i>Citharinus citharus intermedius</i> syn.: <i>Citharinus citharis</i>	58 SL	X			
ALESTIDAE					
92. <i>Alestes baremoze</i>	43	X			
93. <i>Alestes dentex</i>	55	X			
94. <i>Brycinus affinis</i> syn.: <i>Alestes affinis</i>	14.7 SL	X			
95. <i>Brycinus ferox</i> syn.: <i>Alestes minutus</i>	8.1 SL	X			
96. <i>Brycinus jacksonii</i> syn.: <i>Alestes jacksonii</i>	27 SL	X			
97. <i>Brycinus macrolepidotus</i>	32.8	X			
98. <i>Brycinus minutus</i> syn.: <i>Alestes minutus</i>	4	X			
99. <i>Brycinus nurse</i> syn.: <i>Alestes nurse</i>	26	X			
100. <i>Brycinus sadleri</i> syn.: <i>Alestes nurse</i>	15	X			
101. <i>Hydrocynus forskahlii</i> syn.: <i>Hydrocyon forskahlii</i>	90	X			
102. <i>Hydrocynus vittatus</i> syn.: <i>Hydrocyon lineatus</i> <i>Hydrocynus lineatus</i>	70 SL	X			
103. <i>Micralestes</i> aff. <i>elongatus</i> syn.: <i>Micralestes acutidens</i>	6.5	X			
104. <i>Rhabdalestes tangensis</i> syn.: <i>Rhabdalestes leleupi</i> <i>Petersius tangensis</i>	10	X			

BAGRIDAE					
105. <i>Bagrus bajad</i>	72 SL	X			
106. <i>Bagrus docmak</i> syn.: <i>Bagrus degeni</i>	110	X			
107. <i>Bagrus urostigma</i> syn.: <i>Bagrus orientalis</i>	72	X			
CLAROTEIDAE					
108. <i>Auchenoglanis occidentalis</i>	60	X			
109. <i>Chrysichthys auratus</i>	30	X			
110. <i>Clarotes laticeps</i>	80	X			
111. <i>Pardiglanis tarabinii</i>	87.6	X			
SCHILBEIDAE					
112. <i>Parailia somalensis</i> syn.: <i>Parailia (Physailia) somalensis</i> <i>Physailia somalensis tanensis</i> <i>Physailia somalensis somalensis</i> <i>Physailia</i> sp.	10	X			
113. <i>Schilbe intermedius</i> syn.: <i>Schilbe mystus</i> <i>Eutropius depressirostris</i>	60.5	X			
114. <i>Schilbe uranoscopus</i>	40	X			
AMPHILIIDAE					
115. <i>Amphilius jacksonii</i>	15	X			
116. <i>Amphilius uranoscopus</i> syn.: <i>Amphilius grandis</i> <i>Amphilius oxyrhinus</i>	19.5	X			
117. <i>Leptoglanis</i> aff. <i>rotundiceps</i> syn.: <i>Leptoglanis rotundiceps</i>	4	X			
CLARIIDAE					
118. <i>Clariallabes petricola</i>	11	X		X	
119. <i>Clarias alluaudi</i>	23	X		X	
120. <i>Clarias gariepinus</i> syn.: <i>Clarias mossambicus</i> <i>Clarias lazera</i> <i>Clarias anguillaris</i>	150	X		X	
121. <i>Clarias liocephalus</i> syn.: <i>Clarias carsonii</i> <i>Clarias neumanni</i>	32	X		X	
122. <i>Clarias wernerii</i>	23	X		X	
123. <i>Heterobranchus longifilis</i>	180	X		X	
124. <i>Xenoclaris eupogon</i> syn.: <i>Clarias eupogon</i> <i>Xenoclaris holobranchus</i>	22	X		X	

MALAPTERURIDAE		X			
125. <i>Malapterurus electricus</i>	140				
ARIIDAE					
126. <i>Arius africanus</i>	45	X			
MOCHOKIDAE					
127. <i>Chiloglanis brevibarbis</i> syn.: <i>Chiloglanis athiensis</i>	6.1	X			
128. <i>Chiloglanis deckenii</i>	8	X			
129. <i>Chiloglanis</i> aff. <i>niloticus</i>	4.5	X			
130. <i>Chiloglanis somereni</i>	10 SL	X			
131. <i>Mochokus niloticus</i>	6.5	X			
132. <i>Synodontis afrofishcheri</i>	18	X			
133. <i>Synodontis frontosus</i>	34.5	X			
134. <i>Synodontis geledensis</i>	30.7	X			
135. <i>Synodontis manni</i>	30	X			
136. <i>Synodontis schall</i>	43	X			
137. <i>Synodontis serpentis</i>	12.5	X			
138. <i>Synodontis victoriae</i>	35.1 SL	X			
139. <i>Synodontis zanzibaricus</i> syn.: <i>Synodontis punctulatus</i> <i>Synodontis leopardus</i> <i>Synodontis zambezensis</i>	31.1	X			
140. <i>Synodontis</i> spec. "Lower Tana"	10	X			X
SALMONIDAE					
141. <i>Oncorhynchus mykiss</i> syn.: <i>Salmo irideus</i> <i>Salmo gairdneri</i> <i>Parasalmo mykiss</i>	120		X	X	
142. <i>Salmo trutta</i>	120		X	X	
143. ? <i>Salvelinus fontinalis</i>	86 SL		X	X	
APLOCHEILICHTHYIDAE					
144. <i>Aplocheilichthys bukobanus</i> syn.: <i>Lacustricola bukobanus</i> <i>Aplocheilichthys meyburgi</i> <i>Micropanchax ericae</i> <i>Cynopanchax bukobanus</i> <i>Haplochilus pumilus</i> <i>Aplocheilichthys pumilus</i>	5	X			
145. <i>Aplocheilichthys rudolfianus</i> syn.: <i>Haplochilichthys rudolfianus</i> <i>Micropanchax rudolfianus</i>	3.5	X			
146. <i>Aplocheilichthys</i> spec. "Baringo" syn: <i>Aplocheilichthys</i> aff. <i>maculates</i>		X			X

<i>Aplocheilichthys loati</i>					
147. <i>Aplocheilichthys</i> spec. "Naivasha" syn.: <i>Haplochilichthys antinorii</i> <i>Aplocheilichthys antinorii</i>		X			X
148. <i>Lacustricola jeanneli</i> syn.: <i>Haplochilichthys jeanneli</i>	3.5	X			
149. ? <i>Micropanchax loati</i>	2.5	X			
150. <i>Pantanodon stuhlmanni</i> syn.: <i>Pantanodon podoxys</i> <i>Aplocheilichthys stuhlmanni</i>	6	X			
POECILIIDAE					
151. <i>Gambusia holbrooki</i> syn.: <i>Gambusia</i> sp. <i>Gambusia affinis holbrooki</i> <i>Gmbusia affinis</i> <i>Gambusia holbrooki</i>	3.5		X	X	
152. <i>Poecilia reticulata</i>	3.5		X	X	
APLOCHEILIDAE					
153. <i>Nothobranchius bojiensis</i>	5.5	X			
154. <i>Nothobranchius elongatus</i>	5.5	X			
155. <i>Nothobranchius</i> aff. <i>fasciatus</i>		X			
156. <i>Nothobranchius interruptus</i>	6.6	X			
157. <i>Nothobranchius jubbi</i> syn.: <i>Nothobranchius cyaneus</i>	6	X			
158. <i>Nothobranchius melanospilus</i>	7	X			
159. <i>Nothobranchius microlepis</i>	8	X			
160. <i>Nothobranchius palmqvisti</i>	5	X			
161. <i>Nothobranchius patrizii</i>	5	X			
162. <i>Nothobranchius robustus</i>	5.5	X			
163. <i>Nothobranchius ugandensis</i> syn.: <i>Nothobranchius taeniopygus</i>	5.2	X			
164. <i>Nothobranchius willerti</i>	4	X			
165. <i>Nothobranchius</i> spec. "Lake Victoria"	5	X			X
SYNGNATHIDAE					
166. <i>Hippichthys spicifer</i> syn.: <i>Hippichthys (Hippichthys) spicifer</i>	17.5	X			
167. <i>Microphis fluviatilis</i> syn.: <i>Microphis (Belonichthys) fluviatilis</i>	21	X			
MASTACEMBELIDAE					
168. <i>Mastacembelus frenatus</i> syn.: <i>Caecomastacembelus frenatus</i> <i>Mastacembelus frenatus</i>	33	X			

<i>Afromastacembelus frenatus</i>					
<i>Mastacembelus victoricae</i>					
LATIDAE					
169. <i>Lates longispinis</i> syn.: <i>Lates (Lates) longispinis</i> <i>Lates niloticus longispinis</i>	27.5	X		X	
170. <i>Lates niloticus</i> syn.: <i>Lates (Lates) niloticus</i> <i>Lates niloticus rudolfianus</i>	180			X	
AMBASSIDAE					
171. <i>Ambassis gymnocephalus</i>	16	X			
TERAPONIDAE					
172. <i>Terapon jarbua</i>	30 SL	X			
LUTJANIDAE					
173. <i>Lutjanus argentimaculatus</i>	120	X			
CENTRARCHIDAE					
174. ? <i>Lepomis cyanellus</i>	31		X	X	
175. ? <i>Lepomis macrochirus</i>	41		X	X	
176. <i>Micropterus salmoides</i>	97		X	X	
CICHLIDAE					
177. <i>Astatoreochromis alluaudi</i>	18	X			
178. <i>Ctenochromis pectoralis</i>	18.5	X			
179. <i>Haplochromis macconneli</i> syn.: <i>Haplochromis (Thoracochromis) macconneli</i>	10	X			
180. <i>Haplochromis nubilus</i> syn.: <i>Haplochromis (Astatotilapia) nubilus</i>	12	X			
181. <i>Haplochromis rudolfianus</i> syn.: <i>Haplochromis (Thoracochromis) rudolfianus</i>	8	X			
182. <i>Haplochromis turkanae</i> syn.: <i>Haplochromis (Thoracochromis) turkanae</i>	11	X			
183. <i>Haplochromis</i> aff. <i>bloyeti</i>	15	X			
184. <i>Haplochromis</i> aff. <i>brownae</i>	10.4	X			
185. <i>Haplochromis</i> spec. "Amboseli"		X			X
186. <i>Haplochromis</i> spec. "Lake Challa"	11	X			X
187. <i>Haplochromis</i> spec. "Migori"	10	X			X
188. <i>Haplochromis</i> spec. "Mzima 1"	7.5	X			X
189. <i>Haplochromis</i> spec. "Mzima 2"	6.5	X			X
190. <i>Haplochromis</i> spec. "Sio"		X			X
191. <i>Haplochromis</i> spec. "Turkana 1"		X			X
192. <i>Haplochromis</i> spec. "Turkana 2"		X			X
193. <i>Haplochromis</i> spec. "Turkana 3"		X			X

194. <i>Hemichromis exsul</i> syn.: <i>Hemichromis bimaculatus</i> <i>Hemichromis letourneuxi</i> <i>Pelmatochromis exsul</i>	10 SL	X			
195. <i>Haplochromis maxillaries</i>		X			
196. <i>Neochromis nigricans</i>	9.4 SL	X			
197. <i>Alcolapia</i> aff. <i>alcalicus</i> syn.: <i>Tilapia alcalica</i> <i>Oreochromis alcalicus</i> <i>Oreochromis (Alcolapia) alcalica</i>	8	X			
198. <i>Alcolapia grahami</i> syn.: <i>Tilapia grahami</i> <i>Oreochromis alcalicus grahami</i> <i>Oreochromis (Alcolapia) alcalicus grahami</i> <i>Tilapia mossambica</i>	15	X		X	
199. <i>Oreochromis andersonii</i>	50			X	
200. <i>Oreochromis esculentus</i> syn.: <i>Tilapia esculenta</i>	50	X		X	
201. <i>Oreochromis hunter</i> syn.: <i>Tilapia hunter</i> <i>Tilapia (Oreochromis) hunteri</i>	30	X			
202. <i>Oreochromis jipe</i> syn.: <i>Tilapia jipe</i> <i>Tilapia (Sarotherodon) jipe</i> <i>Tilapia (Oreochromis) jipe</i> <i>Sarotherodon jipe</i> <i>Tilapia girigan</i> <i>Tilapia pangani</i> <i>Oreochromis pangani pangani</i>	47	X			
203. <i>Oreochromis korogwe</i>	20.8	X			
204. <i>Oreochromis leucostictus</i> syn.: <i>Tilapia leucosticta</i>	32			X	
205. <i>Oreochromis mossambicus</i>	40 SL			X	
206. <i>Oreochromis niloticus</i> syn.: <i>Oreochromis niloticus eduardianus</i> <i>Tilapia nilotica</i>	50			X	
207. <i>Oreochromis niloticus baringoensis</i> syn.: <i>Tilapia nilotica</i>	28	X			
208. <i>Oreochromis niloticus eduardianus</i>	15			X	
209. <i>Oreochromis niloticus sugutae</i>	25	X			
210. <i>Oreochromis niloticus vulcani</i> syn.: <i>Tilapia vulcani</i> <i>Tilapia nilotica</i>	30	X			

211. <i>Oreochromis spilurus niger</i> syn.: <i>Oreochromis niger</i> <i>Tilapia nigra</i> <i>Tilapia spilurus nigra</i> <i>Tilapia nigra nigra</i> <i>Tilapia nilotica</i> var. <i>athiensis</i> <i>Tilapia athiensis</i> <i>Tilapia browni</i> <i>Oreochromis athiensis</i>	35	X		X	
212. <i>Oreochromis spilurus percivali</i> syn.: <i>Tilapia percivali</i>	18	X			
213. <i>Oreochromis spilurus spilurus</i> syn.: <i>Chromis spilurus</i> <i>Tilapia nyirica</i> <i>Tilapia mossambica</i> <i>Oreochromis spilurus</i>	25	X			
214. <i>Oreochromis variabilis</i> syn.: <i>Tilapia variabilis</i>	32	X			
215. <i>Haplochromis chilotes</i> syn.: <i>Paralabidochromis chilotes</i> <i>Paratilapia chilotes</i>		X			
216. <i>Haplochromis chromogynos</i> syn.: <i>Paralabidochromis chromogynos</i>	11 SL	X			
217. <i>Haplochromis</i> spec. "Rock Kribensis" syn.: <i>Paralabidochromis</i> spec. "Rock Kribensis"		X			X
218. <i>Pseudocrenilabrus multicolor victoriae</i>	8	X			
219. <i>Haplochromis</i> spec. "Victoria 1" syn.: <i>Prognathochromis</i> spec. "Victoria"		X			X
220. <i>Haplochromis</i> spec. "Victoria 2" syn.: <i>Ptyochromis</i> spec. "Victoria"		X			X
221. <i>Haplochromis orthostoma</i> syn.: <i>Pyxichromis orthostoma</i>		X			
222. <i>Sarotherodon galilaeus galilaeus</i> syn.: <i>Tilapia galilaea</i> <i>Sarotherodon galilaeus</i>	40			X	
223. <i>Tilapia rendalli</i> syn.: <i>Tilapia melanopleura</i>	25			X	
224. <i>Tilapia zillii</i>	30.5			X	
225. <i>Haplochromis phytophagus</i> syn.: <i>Xystichromis phytophagus</i>	8.6 SL	X			
226. <i>Haplochromis laparogramma</i> syn.: <i>Yssichromis laparogramma</i>	8.5 SL	X			
MUGILIDAE					

227. <i>Chelon macrolepis</i> syn.: <i>Liza macrolepis</i>	60 SL	X			
228. <i>Moolgarda malabarica</i> syn.: <i>Valamugil buchanani</i>	100	X			
ELIOTRIDAE					
229. <i>Eliotris fusca</i>	26	X			
GOBIIDAE					
230. <i>Awaous aeneofuscus</i> syn.: <i>Gobius (Awaous) aeneofuscus</i>	26 SL	X			
231. <i>Glossogobius giuris</i>	50	X			
232. <i>?Oligolepis acutipennis</i>	15	X			
233. <i>Stenogobius kenya</i>	12	X			
ANABANTIDAE					
234. <i>Ctenopoma muriei</i> syn.: <i>Anabas muriei</i>	10	X			
235. <i>Ctenopoma</i> spec. "Ochumbae"		X			X
TETRAODONTIDAE					
236. <i>Tetraodon lineatus</i> syn.: <i>Tetraodon fahaka</i>	43	X			

GLOSSARY

A

Abdominal: relating to, located in, or occurring in the abdomen; of the abdomen.

Aberrant: not typical.

Aberrantly: deviating from what is typical.

Acuminate: taper to a sharp point; pointed.

Acute: sharply pointed; very great.

Acutely: greatly, severely.

Adductor: a muscle that pulls a leg or arm towards the central line of the body or a toe or finger towards the axis of a leg or arm.

Adipose eyelid: a transparent fixed eyelid that covers or partially covers, and protects the eyelids in some fishes (e.g. elephant-noses, mullets).

Adipose fin: a fleshy rayless median fin located between the dorsal and caudal fins in certain fishes.

Aestivate: to be dormant during the summer or during months of drought.

Alien: does not belong to; from another land.

Allometric: change in proportion of various parts of an organism as a consequence of growth.

Amalgam: a mixture (blend) of two or more elements or characteristics.

Anal: relating to or situated near the anus.

Anal fin: median, unpaired, ventral fin located between the anus and caudal fin, usually in the posterior portion of the body. Used to maintain equilibrium and stability.

Anastomosis: the connection of separate parts of a branching system to form a network. Sometimes used to describe the process by which a relatively regular, e.g. striped, patterning in juveniles of certain fishes breaks up as they mature.

Ankylose: (of bones or a joint) be or become stiffened or united by ankylosis.

Ankylosis: abnormal stiffening and immobility of a joint due to fusion of the bones.

Antorse: positioning towards the front (anterior) of the fish.

Apertures: holes or openings (e.g. nostrils).

Arterially: relating to, affecting, or used in arteries.

Ashen: very pale.

Asperity: roughness, harshness, or severity.

Attenuate: to become less dense, thinner or weaker.

Auxiliary: acting to support or supplement; secondary to something larger.

Axil: the inner or posterior part of the fin base.

Axillary process: scaly flap of skin at the base of the pelvic and pectoral fins of some fish.

Axillary scale: modified, often elongate, scale or group of scales located at the base of the pectoral or ventral fins in some fishes.

B

- Barbel:** fleshy, tentacle-like sensory organ near the mouth of some fish.
- Basal:** at or towards the base.
- Bifid:** divided at one end into two equal parts.
- Bifurcate:** to divide or cause to divide into two parts/branches.
- Bisected:** split into two parts.
- Bloated:** swollen, excessively large.
- Blotch:** an irregular shaped mark, spot, or patch on the skin.
- Branchial:** relating to, of, or resembling the gills of a fish.
- Branchiostegal membrane:** the membrane, sometimes referred to as the gill membrane, connecting the branchiostegal rays and enclosing the ventral portion of the branchial cavity.
- Branchiostegal rays, branchiostegals:** strut-like bones supporting the branchiostegal membranes.
- Bronzy:** deep yellowish-brown color, like that of bronze.
- Buccal:** of or relating to the mouth.
- Buff:** pale yellowish-brown.
- Buffish:** a dull yellowish-beige color.
- Burnished:** polished, shiny.

C

- Canine:** conical, pointed tooth, usually larger than other teeth in the mouth.
- Carapace:** the hard upper shell of a tortoise, crustacean, or arachnid.
- Carmine:** deep red colour, tinged with purple.
- Caudal:** pertaining to the tail or posterior end of the fish.
- Caudal fin:** also referred to as the tail fin, it's main purpose is thrust and propulsion.
- Caudal peduncle:** the typically narrow section of the body located between the posterior of the dorsal and anal fins and caudal fin origin. Its depth is measured vertically at the narrowest point.
- Cephalic:** relating or referring to the head, or head region.
- Cheek:** area between the eye, upper jaw, and edge of the preopercle bone.
- Chevron:** a V-shaped line or stripe.
- Chromatophores:** a pigment-containing or pigment-producing cell that can alter the colour of the skin by expanding or contracting.
- Cicatrice:** scar left by a wound that has healed.
- Ciliated:** with projecting threads (cilia).
- Circuli:** around/circumference.
- Circum-oral:** surrounding the mouthparts.
- Classification:** in taxonomy, the arrangement of organisms into taxonomic groups according to their degree of evolutionary relatedness.
- Clavicles:** refers to the collar bone in human anatomy. Present in the pectoral girdle of some fishes as a paired, dermal bone ventral to or fused with the cleithrum.
- Cleft:** split, divided, or partially divided into two.
- Coarse:** rough or harsh in texture.
- Coarsely:** into large and irregularly shaped pieces.
- Common name:** informal, vernacular name for a fish or other organism. Often varies by language, place or time.

- Compressed:** flattened laterally, e.g., in such a way that the body is deeper than wide.
- Concentric:** of or denoting circles, arcs, or other shapes which share the same centre, the larger often completely surrounding the smaller.
- Confluence:** a meeting or joining of two or more things.
- Conical:** shaped like a cone.
- Conspicuous:** clearly visible.
- Conspicuously:** attracting attention through being unusual or remarkable.
- Continuous:** unbroken; e.g. dorsal fin in which the spinous is joined to the soft-rayed part with no gap between the two.
- Crenellated:** dented or notched.
- Crescentic:** a curve or arc shape like that of the moon when it is less than half illuminated.
- Crimson:** a deep rich red color with a hint of purple.
- Ctenii:** minute projections characteristic of ctenoid scales.
- Ctenoid:** comblike; having an edge or margin with multiple, tiny projections resembling the teeth of a comb.
- Curved:** with a rounded or bended shape.
- Cycloid scale:** a thin flexible scale with a smooth margin.

D

- Decurved:** curved downwards.
- Denticulate:** shaped like a tooth.
- Denticulation:** with fine teeth or pointed projections.
- Dentition:** the type, number, and arrangement of a set of teeth; array of teeth.
- Depressed:** body flattened vertically, from top to bottom.
- Descending:** arranged from highest to lowest or from greatest to smallest.
- Dextral:** relating to the right hand side of the body.
- Diaphanous:** delicate, translucent.
- Diminish:** make or become or appear smaller or less important.
- Discernible:** able to be seen or recognised.
- Distal:** situated away from point of attachment or origin. Opposite of proximal.
- Dorsal fin:** median fin on the dorsal surface of a fish.
- Dorso-lateral:** positioned or orientated between the dorsal and lateral surfaces.
- Dorsum:** the upper surface of the head, body or part.
- Dusky:** dark in colour.

E

- Ecology:** the study of relationships and interactions between living organisms and their natural or developed environment.
- Ecosystem:** biological community comprising interacting organisms plus their physical environment.
- Egg spot or egg dummy:** rounded patches usually appearing on fish anal fin (see also ocellus).
- Electric organ:** specialised electricity producing muscle tissue in some fish that create as an electrical field used for finding enemies, obstacles, and food in murky water, and, in some species, for defence against attack.
- Elliptic:** shape of a geometric ellipse.

Elliptical: in the shape or pattern of a geometric ellipse.

Emarginate: having a notched margin or edge. Often used in reference to a caudal fin with a slightly concave shape.

Embedded: to fix something or become fixed in a surrounding mass; to cover or surround something closely.

Encircled: to form a circle around something; to go in a circle around something.

Encrustation: a hard thick coating or cover.

Endemic: native; unique to a certain area.

Equal: identical in size, quality and value or standard.

Estuary: the wide lower tidal part of a river, the lowest section of which meets the marine system.

Excise: delete (or remove surgically); to remove something by cutting.

F

Falcate: sickle-shaped, tapering to a point; curved or tapering to a point like a sickle.

Family: taxonomic rank below order and above genus. Contains one or more genera.

Fawn: a pale yellowish-brown color.

Feeble: lacking physical strength.

Feebly: weakly.

Filamentous: extended into a slender strand or fibre.

Fin: membranous appendage supported by cartilage or bony rays. Used for locomotion, steering, and balance by fishes and some other aquatic organisms.

Fin ray: any of the bony spines supporting the membrane of a fin including both spines and soft rays.

Fin spine: unsegmented and unbranched, bony structure supporting the fins in teleosts. Usually hard, rigid and pointed and may have a smooth or serrated edge. Not laterally-paired like rays, and in some species modified to form a protective structure.

First dorsal fin: in fishes with two dorsal fins, the anterior fin.

Flank: either side of the body of an animal between the last rib and lower torso.

Flash: emit light abruptly; reflect light from another source; patch of light or bright colour on a dark background (e.g. on animal coat, for protection).

Fleck: small mark, streak or spot.

Flecks: any one of a number of very small marks, streaks or pieces scattered on a surface.

Flexuose (Flexuous): bending, or winding, or curving, or turning.

Flush: go red to become or cause something to become red on the face or on the skin; to glow or cause something to glow with a reddish color.

Fontanelle: non-ossified, usually membranous gap between cranial bones.

Fork length (FL): usually measured from the front end of the head to the tip of the middle tail fin rays (fork or tail fin).

Frenum (Freanum): a connecting or restraining membrane.

Fringe: decorative edge of strands; any border or edging; outer limit.

Fringed: forming a border around something.

Fulcrum: pivot, or the point or support about which a lever turns; part of an animal that acts as a hinge or support, e.g. scales on fins of some fish.

Fusiform: tapering towards each end; spindle-shaped.

G

Genus (pl. genera): taxonomic group into which a family is divided and which contains one or more species characterised by a shared trait or traits. The generic name is used, either alone or followed by one or two specific epithets, to form a binomen or trinomen.

Gill cover: the large upper rear bone of the gill cover, the largest bone of the opercle.

Gill opening: posterior opening of the gill chamber where water flowing over the gills is expelled.

Gilt: covered thinly with gold leaf or pigmentation.

Globular: spherical, or having the shape of a ball or globule; consisting or containing globules.

Gonopodium: modified anal fin used in copulation for the transfer of male gametes to a female. In many cases only the anterior part of the fin is modified.

Granular: appearing to consist of or be covered in small grains or particles.

Granulate (Granulated): rough and grainy in texture or appearance; to form or cause something to form into small grains or particles; to become or make grainy in texture or appearance.

Gravid: carrying eggs or unborn young.

Greyish: slightly grey in colour; tinged with grey.

Guano: animal dropping.

Guanophores: a chromatophore that is characterised by pale granules or iridescent crystals of guanine and occurs notably in the skin of fishes and reptiles.

Gular region: area on the underside of head between left and right lower jaw bones.

Gurnard-like: resembling bottom-dwelling marine fish with an armored head (the gurnard).

H

Habitat: the environment where a species usually lives.

Hallmark: distinguished mark of high quality; a feature of something that distinguishes it from others.

Halo: something that resembles or suggesting a ring of light surrounding something.

Haloes: rings of light or light-coloured pigment.

Handsomely: generously; in an amount that is more than expected.

Hazel: a light brown color with a tinge of green or gold (like a ripe hazelnut).

Histochemical (Histochemistry): the biochemistry of cells and tissues.

Holotype: the single specimen designated as the name-bearing type of a nominal species or subspecies.

Humeral: relating to or located on the humerus.

Hyaline: transparent; clear, translucent, and containing no fibre or granular material.

Hybrid: an animal that results from the mating of parents from two different species or subspecies; animal resulting from cross-species mating.

Hyperostosis (hyperossity): excessive bone growth; musculoskeletal disorders.

I

Ichthyology: the study of fishes.

Ill-defined: not well-defined.

Imbricating: overlapping like roof tiles; animal parts that overlap in a regular pattern.

Immaculate: absolutely clean, free of blemishes; showing faultless perfection.

Imperceptive: not observed: lacking the ability to notice things or to understand something.

Inconspicuous: not obvious; not easily seen or noticed.

Inferior: located on the underside of head.

Inferior mouth: mouth located on the underside of the head.

Insertion: the point of attachment of something (e.g. a fin); the act of putting something into something else.

Interneural: a short nerve cell in the central nervous system that connects the nerve cells in a reflex arc, e.g., a sensory nerve to a motor nerve.

Interneuron: connecting nerve cell.

Interopercle: the lowest (ventral-most) opercular bone.

Interorbital: region between the eyes.

Intersperse: to break up the continuity or flow of something with something else.

Interspinous: between or among spines of a fin.

Interstices: small spaces in body tissue or between parts of the body.

Invariably: always or almost always.

Iridescent: having rainbow colors that appear to change depending on the angle at which they are viewed.

Isthmus: the part of the body that separates left and right gill chambers; the throat region of a fish.

J

Junior synonym: in zoological nomenclature, the more recently-established synonym if two or more exist.

Juvenile: not yet fully mature though mostly similar in form to an adult specimen; young.

K

Keel: ridgelike structure located on the ventral surface, caudal peduncle or caudal fin base in certain fishes.

Khaki: a dull brownish-yellow color.

Kype: curved lower jaw in salmonids.

L

Labials: in, on, closed to, or involving the lips or the labia.

Lappets: small flap or fold of flesh or tissue.

Lateral: relating to, situated on or in, or extending towards the side or sides. Opposite of medial.

Lateral line (LL): systems of minute perforated tubes or canals containing receptors sensitive to low-frequency sounds (vibrations) and water movements made by the motions of nearby animals and currents.

Lateral-line scales: body scales perforated by tubes connected with the lateral line.

Lateral line scale series (LSS): the oblique scale series from the gill opening to the base of the tail fin.

Laterosensory: relating to the lateral line system.

Lilac: pale pinkish colour with a tinge of blue.

Livid: with bluish bruised colour; bluish or discoloured as a result of bruising.

Lobate: having or resembling a lobe or lobes.

Lobe: a curved or rounded projection, division or outgrowth, especially of an anatomical part.

Lunate: crescent-shaped (e.g. a tail fin with deeply indented margin and narrow projecting lobes).

M

- Maculations:** the patterns of spots (spotted markings) on some animals; stained or marking of something with spots.
- Marbled:** having a streaked or mottled appearance similar to variegated marble.
- Marbling:** something resembling marble, in being cold, hard, smooth, or white.
- Mauve:** a pale color between purple and blue or pink; a pale purplish color.
- Maxilla (pl. maxillae):** one of the two bones that comprise each half of the upper jaw.
- Medial:** Relating to, situated on or in, or extending towards the middle; median. Opposite of lateral.
- Median fins:** the dorsal, anal and tail fins.
- Melanophores:** cells in fishes that contain the black to dark brown pigment melanin.
- Midlateral:** orientated along the middle of the side.
- Migration:** the act or process of moving from one region or country to another; movement from one place to another.
- Minutely:** to a very small extent; into a very small shape or very small pieces.
- Monophyletic:** used in reference to a taxonomic group containing all descendants of a single, often hypothetical, common ancestor, often characterised by one or more synapomorphies. A clade is a monophyletic group.
- Morphology:** the form and structure of an organism.
- Mottling:** an irregular pattern of patches or spots of different colors.
- Mouthbrooding:** to carry eggs in the mouth until they hatch (oral incubation).
- Muzzle:** animal's nose and jaw; the projecting part of an animal's face made up of its nose and jaws.

N

- Naked:** in ichthyology, scaleless or smooth skin.
- Nape:** dorsal region at the rear of the head.
- Naris (pl. nares):** openings or passages leading out of the nose or nasal cavity.
- Neuromast:** upright (vertical pole-like) nerve or neurone.
- Nomenclature (zoological):** systems for names for animal species and the categories (taxa) of the hierarchical classification that expresses their hypothesised evolutionary relationships.
- Nuchal:** the nape (back) of the neck.
- Nuptial:** Of, relating to, or occurring during the breeding season.

O

- Oblique:** not being on anatomical plane; slanting away from any of the anatomical planes of the body (e.g. the horizontal or perpendicular planes).
- Oblong:** having a shape that is considerably longer than it is wide.
- Obscure:** not being fully or clearly expressed; not able to be seen (indistinct).
- Obtuse:** having a blunt or rounded tip.
- Occiput:** back part of head or skull.
- Occipital:** relating to or located at the back of the head or skull.
- Occluded (Occlude):** to block or stop something such as a passage; prevent the flow of something such as light or fluid.
- Ocellus (pl. ocelli); ocellar:** an eye-like spot, usually ringed by another color; usually dark-ringed

with a lighter colour inside.

Olivaceous (Oliverous): greenish or blackish.

Opaque: impervious to light, so that images cannot be seen through it; not transparent or translucent.

Opercle: gill cover; the large upper rear bone of the gill cover (the largest bone of the operculum).

Operculum (pl. opercula; opercular): gill cover, comprising four bones – the opercle, preopercle, subopercle and interopercle.

Orbit: the dermal or bony socket for the eye.

Osseus: Composed of, containing, or resembling bone; bony.

Organism: An individual life form that can react to stimuli, reproduce, grow, and maintain homeostasis. There are five main groups, or kingdoms: prokaryotes, protists, fungi, plants, and animals.

Otolith: calcareous 'ear bone' or 'ear stone' in the ear capsule of fishes.

P

Paired fins: The pectoral and pelvic/ventral fins, both of which occur in pairs and are analogous to the fore and hind limbs in higher animals.

Palate: roof of the mouth.

Pale: lacking in colour or intensity.

Papilla (pl. Papillae): a small fleshy, nipple- or teat-shaped protuberance; small lump or tissue or nipple on the surface of something.

Pearl-like: pale greyish-white colour, tinged with blue.

Pectoral fin: anterior, paired fin attached to the pectoral girdle of fishes, usually just behind the opercle and corresponding to the forelimbs of higher vertebrates. Assists in controlling direction of movement and swimming speed. Frequently abbreviated to 'P' or 'P1' in scientific papers.

Pedicels: any short stalk bearing an organ or organism.

Peduncle: slender posterior part of body between rear end of dorsal and anal fin bases and the tail fin.

Pellucid: translucently clear.

Pelvic fins: Either of the pair of fins, also known as pelvic fins, attached to the pelvic girdle in fishes that help control the direction of movement. Correspond to the hind legs in higher vertebrates and vary in position depending on taxon. Sometimes absent entirely.

Penultimate: second to last, in a series or sequence.

Peppered: term sometimes used in reference to fishes with a colour pattern consisting of many small dots or similar markings.

Pharynx (pharyngeal): the throat; the region of the alimentary canal in vertebrate animals that lies between the mouth and oesophagus.

Plica (pl. Plicae): a fold or folded part (e.g. of skin).

Plumbeous: made of, concerning, or like lead.

Posterior: at or towards the rear end of a fish.

Postocular: located behind or after the eye.

Postorbital: situated behind the eye or eye socket.

Porcelain-like: relating to or resembling hard, translucent, ceramic material.

Precaudal: region anterior to the caudal fin.

Precludes (Preclude): to prevent something or make it impossible, or to prevent something from occurring.

Predorsal scales: the line (series) of scales along the mid-dorsal line in front of the first dorsal fin.

Premaxilla (pl. premaxillae; Premaxillaries): the most anterior (tooth-bearing) bone forming the the upper jaw.

Preopercle: boomerang- or L-shaped bone (rear edge usually free and serrated or smooth) behind and below the eye, in front of the opercle and constituting the forepart of the operculum.

Preorbital: bone or region below and in front of the eye.

Protrusile (Protrusible): capable of being thrust or extended forward; appendage that can be quickly extended (e.g. the mouthparts of many fishes).

Protuberances: part of something that sticks out from its surrounding.

Pseudobranch (Pseudobranchiae): small or accessory gill-like organ on the inside of the operculum.

Pterygium: a triangular patch of tissue that obstructs vision by growing over usually the inner side of the eye; vision-obstructing tissue growing on the eye.

Pupillar (Pupil): the dark circular opening at the centre of the iris in the eye, where light enters the eye.

R

Radially: spreading from a common centre as per the spokes of a wheel; running from centre outwards.

Radiating (Radiated; Radiately; Radiate): in the form of parts spreading out from a common centre.

Ramifications: the process of dividing or spreading out into branches; branched division.

Ramified: divided into branches or similar parts.

Reticulated: to form a network or be formed into a network; having a network structure.

Reticulum: network or something resembling a network in structure.

Retorse: pointing backwards (posteriorly); parts that are turned back or down.

Robust: strongly built, or constructed, or designed to be sturdy or durable.

Roseate: of the reddish-pink colour of roses.

Rostral: in fishes, of, like, or associated with the snout.

Rostrum: in fishes, the snout.

Rudimentary: existing at an elementary or basic level; at an early or partially developed stage.

Rugose (Rugosities): a surface of alternating depressions and ridges; with wrinkled or ridged surfaces.

S

Scalloped: make edge wavy; to decorate the edge of object with an undulating pattern (scallop is a marine bivalve mollusc that has a fan-shaped shell).

Scarlet: bright red colour tinged with orange.

Scientific name: the formal name of a taxon (phylum, class, order, family, genus or species); typically binomial or trinomial at the species level, comprising the genus and specific epithet (A species has only one valid scientific name).

Scute: a modified (thickened) bony scale with a keel or a spiny point.

Scitella (Scutellum): hard plate or scale.

Second dorsal fin: in fish with two dorsal fins, that closer to the caudal fin is referred to as the second dorsal fin.

Serrae: small, sharp notches or organs shaped like the tooth of a saw.

Serrated (Serrate): having, or with notches like, the teeth of a saw.

Sexual dimorphism: having differences in colour or morphology between male and female of the same species.

Sheen: a bright, soft, shining (glossy) surface or appearance.

Sinistral: relating to or located on the left side, especially the side of the body; left-handed; coiling clockwise.

- Sinuate:** with wavy indented edge.
- Sinuuous:** full of bends and curves; winding or serpentine.
- Slatey:** dark grey or bluish-green colour.
- Snout:** the projecting part of a vertebrate's head consisting of the nose and mouth.
- Soft ray:** a segmented, often branched, fin ray.
- Sooty:** lined or blocked with soot; covered with soot; dark-coloured.
- sp. (spec.):** usually denotes an unnamed (not formally described) species, or in general for a single species.
- Species:** taxonomic rank into which a genus is divided, but otherwise difficult to delineate precisely with a single definition satisfying all eventualities still lacking to date. There exist a number of concepts of which the most popular in vertebrate taxonomy include the biological species concept and phylogenetic species concept.
- Speckled:** with a pattern of many spots or small irregular patches, often of a contrasting colour.
- Spine:** a sharp projecting point; a fin ray that is not paired, unbranched and has no segments.
- Spinous:** with spines or resembling spines.
- Spinule:** minute spine (not used to refer to fin spines).
- spp. (sp. single):** two or more species.
- Pur:** a bony outgrowth; a normal part of the body but sometimes one that develops such as that on the bottom of the heel after an injury.
- Squamation:** scales or plates like scales; arrangements of scales on an animal's body.
- Standard length (SL):** length of fish, measured from tip of upper jaw (or snout if it projects beyond jaw) to base of caudal fin.
- Steel:** in this book, a cold greyish-blue color.
- Stepped:** increasing in quantity, size, or status, usually in stages.
- Stout:** thick set or heavy.
- Stouter:** thicker and heavier in body.
- Straddles:** extend across or be situated on both sides of something.
- Streak:** thin stripe or band that is a different colour from its background or surrounding.
- Streamline:** design or evolve with smooth shape.
- Streamlined:** designed or evolved with smooth shape in order to move with minimum resistance through water.
- Striae (striated):** thin grooves or scratches channeled in the surface of something.
- Striate:** to mark something with parallel grooves, ridges, stripes or narrow bands.
- Stouter (stout):** relatively thicker and heavier in body; thick set or heavy.
- Sub-:** beneath or under; also nearly or partly.
- Subequal:** approximately equal.
- Subopercle (suboperculum):** gill cover bone that lies below (ventral to) the opercle.
- Suborbital:** beneath the eye.
- Subterminal:** position of mouth slightly below tip of snout.
- Subfalcate:** curved like a sickle; sickle-shaped/falciform.
- Suffused:** spread over or through something (e.g. flanks suffused with red).
- Super:** exceptionally large, powerful, excellent or outstanding qualities.
- Superficial:** with little significance or pattern; not profound.
- Superior:** better than others; above average or better than another in quality or grade.
- Supero-lateral:** situated above and towards the sides.
- Supramaxilla:** small bone on upper rear edge of maxilla.
- Supraoccipital:** median bone at upper rear end of skull.
- Supraorbital:** located above the orbit of the eye.
- Surmount:** arrive to top of something.
- Surmounted:** to be placed on top of something or rise above it.
- Symphysial:** the natural merging of two or more separate bones or parts of the body, or a point

where these occur.

Symphysis: growing together of bones or body parts.

Synonym: different names given to the same species or taxon; the older (senior) synonym is usually the valid name.

T

Tactile: pleasant, pleasing or interesting to the sense of touch.

Taper: make narrower at one end, especially gradually.

Tarnish: becoming dull or discolored; losing shine and become dull due to oxidation.

Tassel: a bunch of loose parallel threads that are tied together at one end and used as a decoration.

Taxon (pl. taxa): a formal taxonomic unit or category of organisms (genus, species, family, etc.).

Taxonomy: the science of classifying plants, animals and microorganisms into increasingly broader categories based on shared features; the study of the rules and practices of classifying or grouping living organisms.

Tectum (Tectiform): a part of a body that forms a covering or is arranged like a roof.

Teleost: a 'modern' (advanced) bony fish.

Terminal: causing or gradually leading to death; forming or found at the extreme point or limit of something, or relating to the very end of something.

Thoracic: the chest region (between the isthmus and belly or abdomen).

Tinge: a slight amount of colour added to something.

Tinged: with another colour added to it.

Tint: pale shade colour with white added to give low saturation.

Total length (TL): length of fish from front of head to tip of caudal fin.

Translucent: letting light through diffusely so that objects on other side can be seen but not clearly distinguished.

Transparent: see through; letting light through clearly so that objects on other side are clearly distinguished.

Transverse: lying crosswise or crossing at right angles to something.

Triangular: relating to or in the shape of a 3-sided figure.

Trifid: divided into 3 parts, e.g. a tail or organ that is into 3 parts.

Trophy: hunting or war souvenir (token or victory – cup, shield, plaque).

Truncate: has a blunt end, giving the impression that a part has been cut off; having the end square-cut or straight.

Tubercle: small raised area or nodule on animal part.

Tuberculate: covered with small rounded swellings or nodules.

Tubular: shaped like or having tubules.

Tubules: a very small tubular part of an animal organism.

Turquoise: a bright greenish-blue colour.

Type(s): representative genus or species of plant or animal whose characteristics best represent the next higher category or taxonomic classification.

U

Unbranched (simple): not dividing into or not producing branches.

Unringed: no ring round neck, bill or other body parts.

V

Vague: not distinctly seen; not having clear or perceptible form.

Valid name: the currently-accepted scientific name of a taxon (species, genus, etc.).

Vent: the external opening in an animal's body through which all waste material and eggs pass.

Venter: belly or abdomen of animal with back bone (vertebrate).

Ventral: on or towards the lower surface (underside) of the fish.

Ventral fins: pelvic fins.

Ventrum: The abdomen.

Venacular name: the 'common' name in a locally spoken language for a fish or other organism; often varies from place to place (e.g. Mombasa to Kisumu) or from one country to another (Kenya to Namibia or South Africa).

Vermiculations: decorative wavy lines, patterns or curvings.

Vermillion: a bright red pigment, sometimes tinged with orange.

Vertebrate: an animal with vertebrae.

Villiform: hair-like (e.g. villiform teeth are very small and slender); resembling a short, bristled tooth-brush or having a velvety appearance.

Villous: relating to, resembling, or covered with minute protuberances.

Villus (Villi; Villose): a soft hair-like filament.

Vivid: strikingly bright or intense in color; extremely clear and fresh, characterised by striking clarity, distinctness.

REFERENCES

- Allee, J.G. (compiler). 1983. *Webster's encyclopedia of dictionaries (Large type)*. New American Edition. Ottenheimer Publishers Inc, Literary Press, USA. 1246 pp.
- Banister, K.E. 1973. A revision of the large *Barbus* (Pisces, Cyprinidae) of East and Central Africa. Studies on African Cyprinidae Part II. *Bulletin of the British Museum (Natural History) Zoology*, 26(1): 1-148.
- Banister, K. E. 1987. The *Barbus perince-Barbus neglectus* problem and a review of certain Nilotic small *Barbus* species (Teleostei, Cypriniformes, Cyprinidae). *Bulletin of the British Museum (Natural History) Zoology*, 53(2): 115-138.
- Barel, C.D.N., W. Ligtoet, T. Goldsmidt, F. Witte & P.C. Goudswaard. 1991. The haplochromine cichlids in Lake Victoria: an assessment of biological and fisheries interests: 258-279. In: M.H.A. Keenleyside (ed.). *Cichlid fishes. Behavior, Ecology and Evolution*. Chapman & Hall, London. 378 pp.
- Bernacsek, G.M. 1980. *Introduction to the freshwater fishes of Tanzania*. Mimeograph. University of Dar es Salaam, Department of Zoology. 77 pp.
- Berrebi, P., M. Kottelat, P. Skelton & P. Rab. 1996. Systematics of *Barbus*: state of the art and heuristic comments. *Folia Zoologica*, 45 (Supplement 1): 5-12.
- Bigorne, R. 1987. Le genre *Mormyrops* (Pisces, Mormyridae) en Afrique de l'Ouest. *Revue d'Hydrobiologie Tropicale*, 20(2): 145-164.
- Boulenger, G.A. 1898. A revision of the genera and species of fishes of the family Mormyridae. *Proceedings of the Zoological Society, London 1898 (Pt. 4)*: 775-821.
- Boulenger, G.A. 1902. Matériaux pour la faune du Congo, additions à la faune ichthyologique du bassin du Congo. *Annales du Musée du Congo*, 2(1): 19-57.
- Boulenger, G.A. 1903. Description of four new species of *Barbus* discovered by Mr. A. Blayney Percival in East Africa. *Annals and Magazine of Natural History*, (7)11(61): 52-54.
- Boulenger, G.A. 1909. III. On a second collection of reptiles, batrachians and fishes made by Dr. E. Bayon in Uganda. *Annali del Museo Civico di Storia Naturale di Genova*, (3)4(44): 303- 307.
- Boulenger, G.A. 1911. *Catalogue of the Fresh-Water Fishes of Africa in the British Museum (Natural History)*. London, v. 2. 529 pp.

- Boulenger, G.A. 1912. Description of two new fishes (*Alestes, Amphilius*) from the Nile system. *Annals and Magazine of Natural History*, (8)10(60): 601-602.
- Boulenger, G.A. 1915. *Catalogue of the Fresh-Water Fishes of Africa in the British Museum (Natural History)*. Printed by order of the Trustees. London, v. 3: 1-526.
- Boulenger, G.A. 1916. Description of three new cyprinid fishes from East Africa. *Annals and Magazine of Natural History*, (8)17(99): 244-245.
- Brewster, B., 1986. A review of the genus *Hydrocynus* Cuvier, 1819 (Teleostei: Characiformes). *Bulletin of the British Museum (Natural History) Zoology*, 50(3): 163-206.
- Copley, H. 1938. Recent additions to fish exhibits in the Museum. *Journal of the East African Natural History Society*, 13(5): 191-192.
- Copley, H. 1941. A short account of the freshwater fishes of Kenya. *Journal of the East African Natural History Society*, 16(1): 1-24.
- Copley, H. 1952. *The Game Fishes of Africa*. Witherby, London. 276 pp.
- Copley, H. 1953. The introduction of the American Brook Trout (*Salvelinus fontinalis*) to Kenya. *Journal of the East African Natural History Society*, 22(1): 35-36.
- Copley, H. 1958. *Common freshwater fishes of East Africa*. Witherby, London. 172 pp.
- A.J. Ribbink. 1986. Unique qualities and special problems of the African great lakes. *Environmental Biology of Fishes*, 17: 161-183.
- Daget, J., J.P. Gosse & D.F.E. Thys van den Audenaerde (eds.). 1986. *Checklist of the freshwater fishes of Africa, CLOFFA*. ISBN Bruxelles, MRAC Tervuren, ORSTOM Paris. v. 2. 520 pp.
- Dawson, C.E. 1986. Syngnathidae. Pp. 281-287. In: J. Daget, J-P Gosse & D.F.E. Thys van den Audenaerde (eds.). *Checklist of the freshwater fishes of Africa, CLOFFA*. ISBN Bruxelles, MRAC Tervuren, ORSTOM Paris. v. 2. 520 pp.
- De Rham, P. 1991. Safaris poisons au Kenya. 2ème Partie. *Aquarama*, 25(121): 21-30.
- De Vos, L. 1995. A systematic revision of the African Schilbeidae (Teleostei, Siluriformes). With an annotated bibliography. *Annales du Musée royal de l'Afrique Centrale, Sciences Zoologiques*, 271. 450 pp.
- De Vos, L. 2001a. Rediscovery of the giant catfish *Pardiglanis tarabinii* (Siluriformes: Claroteidae). *Ichthyological Exploration of Freshwaters*, 12(3): 213-214.
- De Vos, L. 2001b. *Synodontis manni* (Teleostei: Siluroidea: Machokidae), a new catfish from the Lower Tana River, Kenya. *Ichthyological Exploration of Freshwaters*, 12(1): 41-50.
- De Vos, L. & D.F.E. Thys van den Audenaerde. 1990. Petits *Barbus* (Pisces, Cyprinidae) du Rwanda. *Revue d'Hydrobiologie Tropicale*, 23(2): 141-159.

- EAFFRO, 1964. East African Freshwater Fisheries Research Organization (EAFFRO) - Annual Report for 1962/63. *East African Common Services Organization*. Jinja, Uganda.
- EAFFRO, 1976. East African Freshwater Fisheries Research Organization (EAFFRO) - Annual Report for 1974. *East African Common Services Organization*. Jinja, Uganda.
- EAFRO, 1949. East African Fisheries Research Organization (EAFRO) - Annual Report for 1948. *East African Common Services Organization*. Jinja, Uganda.
- Eccles, D.H. 1992. *Field guide to the freshwater fishes of Tanzania*. Food and Agriculture Organization of the United Nations (FAO), Rome, Italy. 145 pp.
- Eccles, D.H. & E. Trewavas. 1989. *Malawian cichlid fishes: the classification of some haplochromine genera*. Hertel, Lake Fish Movies. 334 pp.
- Eschmeyer, W.M. 1990. *Genera of recent fishes*. San Francisco, USA, California Academy of Sciences. 697 pp.
- FishBase. 2000. *FishBase 2000*. CD-Rom. ICLARM, Manila.
- Fowler, H.W. 1936. Zoological results of the George Vanderbilt African expedition of 1934. III. The fresh-water fishes. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 88: 243-335.
- Froese, R. & D. Pauly (eds.). 2000. *FishBase 2000: concepts, design and data sources*. ICLARM, Los Baños, Laguna, Philippines.
- Graham, M. 1929. The Victoria Nyanza and its fisheries. A report on the fishing surveys of Lake Victoria (1927-28). *Crown Agents colonies, London*.
- Gee, J.M. 1964. Nile perch investigation. *EAFFRO Annual Report*, 1962/63: 14-24.
- Gee, J.M. 1969. A comparison of certain aspects of the biology of *Lates niloticus* (Linné) in endemic and introduced environment in east Africa: 251-259. In: L.E. Obeng (ed). *Manmade Lakes: The Accra Symposium*. Accra: Ghana Universities Press. 398 pp.
- Gery, J. 1977. *Characoids of the World*. Neptune City, USA, T.F.H. Publications. 672 pp.
- Goldsmith, T. & F. Witte. 1992. Explosive speciation and adaptive radiation of haplochromine cichlids from Lake Victoria: an illustration of the scientific value of a lost species flock. *Mitteilungen Internationale Vereinigung für Theoretische und Angewandte Limnologie*, 23: 101-107.
- Golubtsov, A.S. & P.B. Berendzen. 1999. Morphological evidence for the occurrence of two electric catfish (*Malapterus*) species in the White Nile and Omo-Turkana systems (East Africa). *Journal of Fish Biology*, 55(3): 492-505.
- Gosline, W.A. 1983. The relationships of the Mastacembelid and Synbranchid fishes. *Japanese Journal of Ichthyology*, 29(4): 323-328.

- Goudswaard, K. & F. Witte. 1997. The catfish fauna of Lake Victoria after the Nile perch upsurge. *Environmental Biology of Fishes*, 49(1): 21-43.
- Greenwood, P.H. 1966. *The Fishes of Uganda*. The Uganda Society, Kampala. 131 pp.
- Greenwood, P.H. 1970. A revision of the cyrinid species *Barbus* (*Enteromius*) *radiates* Peters, 1853, with a note on the synonym of the subspecies *Beiraburbus* and *Enteromius*. *Revue de Zoologie et de Botanique Africaines*, 82(1-2): 1-13.
- Greenwood, P.H. 1976. A review of the family Centropomidae. *Bulletin of the British Museum (Natural History) Zoology*, 29: 1-81.
- Gregory, J.W. 1896. *The Great Rift Valley*. London. 422 pp.
- Günther, A. 1894. Report on the collection of reptiles and fishes made by Dr. J.W. Gregory during his expedition to Mount-Kenia. *Proceedings of the Zoological Society of London 1894*, (Pt. 1): 84-91.
- Hamblyn, E. L. 1962. *A note on Lake Rudolf*. *East African Freshwater Fishery Research Organization*. Annual Report 1961: 46-47 (Appendix H).
- Hartley, J. 1984. *A guide to Lake Naivasha*. Evans Brother, Nairobi. 39 pp.
- Hilgendorf, F.M. 1905. Fische von Deutsch und English Ost-Afrika. Gesammelt von Oscar Neumann, 1893-95. *Zoologische Jahrbücher, Abteilung für Systematik, Geographie und Biologie der Tiere*, 22(4): 405-420.
- Hoese, D.F. 1986. Family No. 240: Gobiidae. Pp. 774-807. In: M.M Smith & P.C. Heemstra (eds.). *Smiths' Sea Fishes*. MacMillan South Africa, Johannesburg. 1047 pp.
- Hopson, A. J. & J. Hopson. 1982. The fishes of Lake Turkana with a description of three new species: *Alestes ferox* sp. nov., *Alestes minutus* sp. nov. (Pisces, Characidae) and *Barbus turkanae* sp. nov. (Pisces, Cyprinidae): 283-347. In: A. J. Hopson (ed.). *Lake Turkana. Overseas Development Administration (ODA)*, London.
- Hori, M., M.M. Gashagaza, M. Nshombo & H Kawanabe. 1993. Littoral fish communities in Lake Tanganyika irreplaceable diversity supported by intricate interactions among species. *Conservation Biology*, 7(3): 657-666.
- Howes, G.J. 1984. A review of the anatomy, taxonomy, phylogeny and biogeography of the African neoboline cyprinid fishes. *Bulletin of the British Museum (Natural History) Zoology*, 47(3): 151-185.
- Huber, J.H. 1996. *Killi-Data. Updated checklist of taxonomic names, collecting localities and bibliographic references of oviparous Cyprinodont fishes (Atherinomorpha, Pisces)*. Société Française d'Ichtyologie, Muséum National d'Histoire Naturelle, Paris, France. 399 pp.
- Huber, J.H. 1999. Updates to the phylogeny and systematics of the African lampeye schooling Cyprinodonts (Cyprinodontiformes: Aplocheilichthyinae). *Cybium*, 23(1): 53-77.

- International Code of Zoological Nomenclature (ICZN)*. 1985. Third Edition. British Museum (Natural History), London. 338 pp.
- International Code of Zoological Nomenclature (ICZN)*. 1999. Fourth Edition. The Natural History Museum, London. 106 pp.
- Jumbe, J.J. 1997. The Status of Tana River Dam Fisheries Twenty Years After Dam Construction: 33-44. In: R. Remane (ed.). *African Inland Fisheries, Aquaculture and the Environment*. FAO and United Nations. Fishing News Books. 400 pp.
- Kersten, O. 1869. Baron Karl Klaus von der Decken's Reisen in Ost-Afrika in den Jahren 1859 bis 1861. *Leipzig und Heidelberg, E.F. Winter'scheVerlagshandlung*. 542 pp.
- La Cepède, B.G.E. 1803. *Histoire naturelle des poisons*. Paris, v. 5. 803 pp.
- Lévêque, C. & J. Daget. 1984. *Cyprinidae*: 217-342. In: J. Daget, J.-P. Gosse, & D.F.E. Thys van den Audenaerde (eds.). *Check-list of the freshwater fishes of Africa, CLOFFA*. MRAC Tervuren, ORSTOM Paris. v. 1. 410 pp.
- Lévêque, C. & R. Bigorne. 1983. Révision des Leptocypris et *Raiamas* (Pisces, Cyprinidae) de l'Afrique de l'Ouest. *Revue d'Hydrobiologie Tropicale*, 16(4): 373-393.
- Lévêque, C., D. Paugy and G.G. Teugels, 1991. Annotated check-list of the freshwater fishes of Nilosudan river basins in Africa. *Revue d'Hydrobiologie Tropicale*, 24(2): 131-154.
- Lever, C. 1996. *Naturalized Fishes of the World*. Academic Press. 408 pp.
- Loiselle, P.V. 1979. A revision of the genus *Hemichromis* Peters, 1858 (Teleostei: Cichlidae). *Annales du Musée royal de l'Afrique Centrale, Sciences Zoologiques*, sér. In 8°, Tervuren (Sciences Zoologiques), 228. 124 pp.
- Lowe-McConnell, R.H. 1958. Observations on the biology of *Tilapia nilotica* Linné (Pisces: Cichlidae) in East African waters. *Revue de Zoologie et de Botanique Africaines*, 57: 129-170.
- Mann, M.J. 1964. *Report on a fisheries survey of Lake Rudolf, Kenya*. East African Freshwater Fisheries Organization, Annual Report 1962/63: 53-62 (Appendix G).
- Mann, M.J. 1966. *A preliminary report on a survey of fisheries of the Tana River, Kenya*. East African Freshwater Fisheries Organization, Annual Report, 1965: 36-43.
- Mann, M.J. 1968. *A note on a second survey of the fisheries of the Tana River, Kenya*. East African Freshwater Fisheries Organization, Annual Report, 1967: 38-41.
- Mann, M.J. 1969. A brief report on a survey of the fisheries of the Tana River, with special reference to the probable effects of the proposed barrages. *EAFPRO Occasional Paper*, 10: 1-13.
- Mann, M.J. 1971. Some taxonomical notes on the fish fauna of the Baringo area. *The African Journal of Tropical Hydrobiology and Fisheries*, 1(1): 25-34.

- Maugé, L.A. 1986. Gobiidae: 358-388. In: J. Daget, J-P Gosse & D.F.E. Thys van den Audenaerde (eds.). *Checklist of the freshwater fishes of Africa, CLOFFA*. ISBN Bruxelles, MRAC Tervuren, ORSTOM Paris. v. 2. 520 pp.
- Meyer, A. and C. Lydeard. 1993. The evolution of copulatory organs, internal fertilization, placentas and viviparity in killifishes (Cyprinodontiformes) inferred from a DNA phylogen of the tyrosine kinase gene X-src. *Proceedings of the Royal Society London Series B*, 254(1340): 153-162.
- Mo, T. 1991. Anatomy, relationships and systematics of the Bagridae (Teleostei: Siluroidei) with a hypothesis of siluroid phylogeny. *Theses Zoologicae*, 17: 1-216.
- Muchiri, S. M. & P. Hickley. 1991. The fishery of Lake Naivasha, Kenya: 382-392. In: I. G. Cowx (ed.). *Catch Effort Sampling Strategies: their application in freshwater fisheries management*. Oxford, Fishing News Books. 432 pp.
- Mugo, J. & D. Tweddle 1999. Preliminary survey of the fish and fisheries of the Nzoia, Nyando and Sondu Miriu rivers, Kenya. *Lake Victoria Fisheries Research Project, Technical Document n° 6*: 106-125.
- Myers, G.S. 1929. Cranial differences in the African characin fishes of the genera *Alestes* and *Brycinus* with notes on the arrangement of related genera. *American Museum Novitates*, 342: 1-7.
- Nagy, B. 2009. Distribution of *Nothobranchius* species in the coastal part of Kenya. *Journal of the American Killifish Association*, 42(5): 194–214.
- Nagy, B. 2010. In search of *Nothobranchius bojiensis* in the wilderness of north-eastern Kenya. *Nothobranchius Archives*, 1(4): 1-17.
- Nelson, I. S. 1994. *Fishes of the World*. Jrd ed. Wiley. New York. 600 pp.
- Ochumba, P.B.O. & J.O. Manyala. 1992. Distribution of fishes along the Sondu-Miriu River of Lake Victoria, Kenya with special reference to upstream migration, biology and yield. *Aquaculture and Fisheries Management*, 23(6): 701-719.
- Okeyo, D.O. 1998. Updating names, distribution and ecology of riverine fish of Kenya in the Athi-Galana-Sabai River drainage system. *Naga, the ICLARM Quarterly*, 21 (1): 44-53.
- Paugy, D. 1984. Characidae: 170-183 In: J. Daget, J.-P. Gosse, & D.F.E Thys van den Audenaerde (eds.). *Check-list of the freshwater fishes of Africa, CLOFFA*. MRAC Tervuren, ORSTOM Paris. v. 1. 410 pp.
- Paugy, D. 1986. Révision systématique des *Alestes* et *Brycinus* africains (Pisces, Characidae). *ORSTOM. Collection Etudes et Thèses, Paris*. 1-295.
- Paugy, D. & J.-F. Guegan, 1989. Note à propos de trois espèces d'*Hydrocynus* (Pisces, Characidae) du bassin du Niger suivie de la réhabilitation de l'espèce *Hydrocynus vittatus* (Castelnaud, 1861). *Revue d'Hydrobiologie Tropicale*, 22(1): 63-69.

- Pellegrin, J. 1935. Pisces. Mission Scientifique de l'Omo. Pisces. v. 2 (*Zool. fasc. 7*): 131-139.
- Peters, W.C.H. 1868. Ueber eine von dem Baron Carl von der Decken entdeckte neue Gattung von Welsen, *Chiloglanis deckenii*, und einige andere Süßwasserfische aus Ostafrika. *Monatsberichte der Königlichen Preussischen Akademie der Wissenschaften zu Berlin*: 598-602.
- Reid, G.M. 1981. The identity and provenance of *Labeo wernerii* Lohberger, a supposedly deadly African species of cyprinid fish. *Copeia*, 1981(4): 915.
- Reid, G.M. 1985. A Revision of African Species of *Labeo* (Pisces: Cyprinidae) and a re-definition of the genus. *J. Cramer, Braunschweig. Theses Zoologica*, No. 6: 1-322.
- Rüppell, E. 1835. Neuer Nachtrag von Beschreibungen und Abbildungen neuer Fische, im Nil entdeckt. *Museum Senckenbergianum: Abhandlungen aus dem Gebiete der beschreibenden Naturgeschichte, von Mitgliedern der Senckenbergischen Naturforschenden Gesellschaft in Frankfurt am Main*, 2(1): 1-28.
- Seegers, L. 1987. Aus Kenia: Zwei neue Prachtgrund-kärpflinge. *Aquarium Heute* 5(2): 7-8.
- Seegers, L. 1996. *The Fishes of the Lake Rukwa Drainage*. Annales, Musée Royal de l'Afrique Centrale, Tervuren, Série in 80, Sciences Zoologiques, v. 278. 407 pp.
- Seegers, L. 1998. Der Jadesee. 1. Die Cichliden des Lake Turkana in Kenya. *Aquarium heute*, 16(4): 182-188.
- Seegers, L. & H. Tichy. 1999. The *Oreochromis alcalicus* flock (Teleostei: Cichlidae) from Lake Natron and Magadi, Tanzania and Kenya, with descriptions of two new species. *Ichthyological Exploration of Freshwaters*, 10(2): 97-146.
- Seegers, L., L. De Vos and D.O. Okeyo. 2003. Annotated check-list of the freshwater fishes of Kenya (excluding the lacustrine haplochromines from Lake Victoria). *Journal of East African Natural History* 92(1): 11-47.
- Sethi, R.P. 1960. *Osteology and phylogeny of oviparous cyprinodont fishes (Order Cyprinodontiformes)*. Ann Arbor, USA, Univ. Florida, Ph.D. Thesis, Univ. Microfilms, 275 pp.
- Skelton, P.H. 1993. *A complete guide to the freshwater fishes of southern Africa*. Southern Book Publishers (Pty) Ltd., Halfway House, RSA. 388 pp.
- Skelton, P.H. 1994. Diversity and distribution of freshwater fishes in East and Southern Africa. In: G.G. Teugels, J.-F. Guégan & J.J. Albaret (eds.). *Biological diversity of African fresh- and brackish-water fishes*. Annales du Musée Royal de l'Afrique Central, Sciences Zoologiques, 275: 95-131.
- Skorepa, V. 1992. Note on the East-African barbel, *Barbus intermedius* (Cyprinidae, Osteichthyes) from Kito Pass, Northern Kenya. *Acta Societas Zoologica Bohemoslov*, 56: 57-62.
- Ssentongo, G. W. 1974. On the fishes and fisheries of Lake Baringo. *The African Journal of Tropical*

Hydrobiology and Fisheries, 3(1): 95-106.

Ssentongo, G. W. 1996. *Report on the present Fisheries situation of Lake Baringo*. Unpublished Report, FAO Fisheries Department, Rome. 9 pp.

Stewart, D.J. 1977. Geographic variation of *Barbus radiatus* Peters, a widely distributed African cyprinid fish. *Environmental Biology of Fishes*, 1(2): 113-125.

Subalusky, A. 2012. *A field guide to the fishes of the Mara River basin, Kenya and Tanzania* (unpublished).

Teugels, G.G. 1986. A systematic revision of the African species of the genus *Clarias* (Pisces; Clariidae). *Annales du Musée royal de l'Afrique Centrale, Sciences Zoologiques*, 247: 1-199.

Travers, R.A. 1984. A review of the Mastacembeloidei, a suborder of synbranchiform teleost fishes. Part I: Anatomical descriptions. *Bulletin of the British Museum (Natural History) Zoology*, 46(1): 1-133.

Trewavas, E. 1933. Scientific results of the Cambridge expedition to the East African lakes 1930-1931. 2. The cichlid fishes. *Journal of the Linnean Society of London. Zoology*, 38(259): 309-341.

Trewavas, E. 1966. A preliminary review of fishes of the genus *Tilapia* in the eastward-flowing rivers of Africa, with proposals of two new specific names. *Revue Zoologique et Botanique Africaine*, 74(3-4): 394-434.

Trewavas, E. 1973. On the cichlid fishes of the genus *Pelmatochromis* with proposal of a new genus for *P. congicus*; on the relationship between *Pelmatochromis* and *Tilapia* and the recognition of *Sarotherodon* as a distinct genus. *Bulletin of the British Museum (Natural History) Zoology*, 25(1): 1-26.

Trewavas, E. 1983. Tilapiine fishes of the genera *Sarotherodon*, *Oreochromis* and *Danakilia*. *British Museum (Natural History)*, London: 1-583.

Vanden Bossche, J.P. & G.M. Bernacsek 1990. *Source book for the inland fishery resources of Africa*, vol. 1. CIFA Technical paper 18/1, FAO Rome. 411 pp.

Vareschi, E. 1979. The ecology of Lake Nakuru (Kenya). II. Biomass and spatial distribution of fish. *Oecologia (Berlin)*, 37(3): 321-335.

Vari, R.P., 1979. Anatomy, relationships and classification of the families Citharinidae and Distichodontidae (Pisces, Characoidea). *Bulletin of the British Museum (Natural History) Zoology*, 36(5): 261-344.

Welcomme, R.L. 1967. Observations on the biology of the introduced species of *Tilapia* in Lake Victoria. *Revue Zoologique et Botanique Africaine*, 76(3-4): 249-279.

Welcomme, R.L. 1988. International introductions of inland aquatic species. *FAO Fisheries Technical Paper*, 294. 318 pp.

- Whitehead, P.J.P. 1958. A new species of *Chiloglanis* (Pisces: Mochochidae) in Kenya. *Annals and Magazine of Natural History*, (13)1(3): 197-208.
- Whitehead, P.J.P. 1959. Note on a collection of fishes from the Tana River below Garissa, Kenya. *East African Agricultural Journal*, 23(4): 167-171.
- Whitehead, P.J.P. 1960. The river fisheries of Kenya. Part II – The Lower Athi (Sabaki) River. *East African Agricultural Journal*, 25 (4): 259-265.
- Whitehead, P.J.P. 1962. A new species of *Synodontis* (Pisces: Mochocidae) and notes on a mormyroid fish from the eastern rivers of Kenya. *Revue de Zoologie et de Botanique Africaines*, 65(1-2): 97-120.
- Whitehead, P.J.P. & P.H. Greenwood. 1959. Mormyrid fishes of the genus *Petrocephalus* in Eastern Africa with a redescription of *Petrocephalus gliroides* (Vinciguerra). *Revue de Zoologie et de Botanique Africaines*, 60(3-4): 295-383.
- Wildekamp, R.H. 1994. The *Nothobranchius* species from Uganda, with description of a new polymorphic species (Cyprinodontiformes: Aplocheilidae). *Ichthyological Exploration of Freshwaters*, 5(3): 193-206.
- Wildekamp, R.H. 1995. *A World of Killies. Atlas of the oviparous cyprinodontiform fishes of the world*. Vol. II. Edited by F. R. Watters. American Killifish Association. 384 pp.
- Woodhouse, G.W. 1912. The fish in Lake Magadi. *Journal of the East African and Uganda Natural History Society*, 2: 95-97.
- Worthington, E.B. 1932. Scientific results of the Cambridge expedition to the East African lakes, 1930-1931. 2. Fishes other than Cichlidae. *The Journal of the Linnean society of London. Zoology*, 38(258): 121-134.
- Worthington, E.B. & C.K. Richardo, 1936. Scientific results on the Cambridge expedition to the East African lakes, 1930-1. No. 15. The fish of Lake Rudolf and Lake Baringo. *The Journal of the Linnean society of London. Zoology*, 39(267): 353-389.
- Wourms, J.B. 1965. Comparative observations on the early embryology of *Nothobranchius taeniopygus* (Hilgendorf) and *Aplocheilichthys pumilus* (Boulenger), with special reference on the problem of naturally occurring embryonic diapause in Teleost fishes. *East African Freshwater Fisheries Research Organisation, Annual Report 1964*, App. H: 68-73.

REFERENCES SPECIFIC TO FRESHWATER FISHES OF KENYA

- Ahl, E. 1924. Neue afrikanische Zahnkarpfen aus dem zoologischen Museum Berlin. *Zoologischer Anzeiger*, 61(5/6): 135-145.
- Ahl, E. 1935. Veber neue oder seltene afrikanische Zahnkarpfen der Gattungen *Aphyosemion* und *Nothobranchius*. *Zoologischer Anzeiger*, 112(5/6): 123-129.
- Bailey, R.G. 1980. A new species of small *Barbus* (Pisces, Cyprinidae) from Tanzania, East Africa. *Bulletin of the British Museum (Natural History) Zoology*, 38(3): 141-144.
- Banister, K.E. 1973. A revision of the large *Barbus* (Pisces, Cyprinidae) of East and Central Africa. Studies on African Cyprinidae Part II. *Bulletin of the British Museum (Natural History) Zoology*, 26(1): 1-148.
- Bleeker, P. 1853. Nieuwe tientallen diagnostische beschrijving van nieuwe of weinig bekende vischsoorten van Sumatra. *Natuurkundig Tijdschrift voor Nederlandsch Indië*, 5: 495-534.
- Bleeker, P. 1853. Dianostische beschrijvingen van nieuwe of weinig bekende vischsoorten van Sumatra. Tiental V-X. *Natuurkundig Tijdschrift voor Nederlandsch Indië*, 4: 243-302.
- Bloch, M.E. & J.G. Schneider. 1801. Systema Ichthyologiae Iconibus cx Illustratum. Post obitum auctoris opus inchoatum absolvit, correxit, interpolavit Jo. Gottlob Schneider, Saxo. Berolini. *Sumtibus Auctoris Impressum et Bibliopolio Sanderiano Commisum*: 1-584.
- Boulenger, G.A. 1897. Descriptions of new fishes from the upper Shire river, British Central Africa, collected by Dr. Percy Rendall and presented to the British Museum by Sir Harry H. Johnson, K.C.B. *Proceedings of the Zoological Society of London* 1896 (pt. 4): 915-920.
- Boulenger, G.A. 1898. Report on the collection of fishes made by J.E.S. Moore in Lake Tanganyika during his expedition 1895-1896, with an appendix by J.E.S. Moore. *Transactions of the Zoological Society of London*, 15(1): 1-30.
- Boulenger, G.A. 1900. On some little-known African silurid fishes of the subfamily Doradinae. *Annals and Magazine of Natural History*, (7)6(36): 520-529.
- Boulenger, G.A. 1901. Diagnoses of new fishes discovered by Mr. W.L.S. Loat in the Nile. *Annals and Magazine of Natural History*, (7)8(46): 444-446.
- Boulenger, G.A. 1901. Diagnoses of new fishes discovered by Mr. J.E.S. Moore in Lakes Tanganyika and Kivu. *Annals and Magazine of Natural History*, (7)7(37): 1-6.
- Boulenger, G.A. 1901. On a small collection of fishes from Lake Victoria made by order of Sir H.H. Johnston K.C.B. *Proceedings of the Zoological Society of London* 1901 (pt. 1): 158-162.
- Boulenger, G.A. 1902. Descriptions of new fishes from the collection made by Mr. E. Degan in Abyssinia. *Annals and Magazine of Natural History*, (7)10(60): 421-439.

- Boulenger, G.A. 1903. Description of two new fishes discovered by Major C. Delme Radcliffe in the Victoria Nyanza. *Annals and Magazine of Natural History*, (7)12(68): 218-219.
- Boulenger, G.A. 1906. Description of a new species of genus *Clarias* from Uganda. *Annals and Magazine of Natural History*, (7)17(102): 569.
- Boulenger, G.A. 1906. Descriptions of new fishes discovered by Mr. E. Degan in Lake Victoria. *Annals and Magazine of Natural History*, (7)17(101): 433-452.
- Boulenger, G.A. 1906. Fourth contribution to the ichthyology of Lake Tanganyika. Report on the collection of fishes made by Dr. W.A. Cunningham during the third Tanganyika expedition 1904-1905. *Transactions of the Zoological Society of London*, 17(6): 537-619.
- Boulenger, G.A. 1906. On the presence of two species of *Anabas* in the White Nile and the Bahr-el-Gebel. *Annals and Magazine of Natural History*, (7)18(107): 348.
- Boulenger, G.A. 1911. Collezioni zoologiche fatte nell' Uganda dal Dott. E. Bayon. XII. *Annali del Museo Civico di Storia Naturale di Genova*, 3(5)45: 64-78.
- Boulenger, G.A. 1912. Description of a new fish from British East Africa. *Annals and Magazine of Natural History*, (8)9(53): 519-521.
- Boulenger, G.A. 1912. Description of three new African cichlid fishes of the genus *Tilapia*, preserved in the British Museum. *Annals and Magazine of Natural History*, (8)10(55): 138-140.
- Boulenger, G.A. 1912. On collection of fishes made by Mr. A. Blayney Percival in British East Africa to the east of lake Baringo. *Proceedings of the Zoological Society of London 1912* (pt. 3): 672-676.
- Boulenger, G.A. 1916. Description of three new cyprinid fishes from East Africa. *Annals and Magazine of Natural History*, (8)17(99): 244-245.
- Broussonet, P.M.A. 1782. Ichthyologia, sistens piscium descriptions et icones. *Decas I, London*: 41 pp.
- Burchell, W.J. 1822. *Travels in the interior of Southern Africa*. London, 2 Vol. (1822-1824). 684 pp.
- Castelnau, F. (de). 1861. *Mémoire sur les poisons de l'Afrique austral*. Paris. 78 pp.
- Cuvier, G. 1819. Sur les poisons du sous-genre *Hydrocyon*, sur deux nouvelles espèces de *Chalceus*, sur trois nouvelles espèces de *Serrasalmes*, et sur l' *Argentina glossodonta* de Forskahl, qui est l' *Albula gonorrhynchus* de Bloch. *Mémoires du Muséum National d'Histoire Naturelle, Paris (N. S.) (Série A) Zoologie* 5: 351-379.
- Cuvier, G. 1829. *Le règne animal distribué d'après son organisation, pour servir de base à l'histoire naturelle des animaux et d'introduction à l'anatomie comparée, nouvelle édition*. Paris, v. 2. 406 pp.
- Cuvier, G. and A. Valenciennes. 1837. *Histoire naturelle des poissons. Tome douzième*. Suite du

- livre quatorzième. Gobioides. Livre quinzième. Acanthoptérygiens à pectorales pédiculées. v. 12. 507 pp.
- Cuvier, G. and A. Valenciennes. 1840. *Histoire naturelle des poissons. Tome quinzième. Suite du livre dix-septième. Siluroïdes.* v. 15. 540 pp.
- Cuvier, G. and A. Valenciennes. 1844. *Histoire naturelle des poissons. Tome dix-septième. Suite du livre dix-huitième. Cyprinoïdes.* v. 17. 497 pp.
- Cuvier, G. and A. Valenciennes. 1847. *Histoire naturelle des poissons. Tome vingtième. Livre vingt et unième. De la famille des Clupéoides.* v. 20. 472 pp.
- Cuvier, G. and A. Valenciennes. 1850. *Histoire naturelle des poissons. Tome vingt-deuxième. Suite du livre vingt-deuxième. Suite de la famille des Salmonoïdes. Table générale de l'Histoire Naturelle des Poissons.* v. 22. 532 pp.
- Daget, J. 1957. Deuxième partie. Les Poissons: 113-168. In: M. Blanc & J. Daget. *Mélanges biologiques. Les eaux et les poissons de Haute-Volta.* Mémoires de l'Institut français d'Afrique Noire, No. 50: 99-169.
- David, L. & M. Poll. 1937. Contribution à la faune ichthyologique du Congo belge: collection du Dr. H. Schouteden (1924-1926) et d'autres récolteurs. *Annales du Musée du Congo Belge Sér. C (Zoologie), (1)3(5):* 189-294.
- De Joannis, L. 1835. Observation sur les poissons du Nil, et descriptions de plusieurs espèces nouvelles suivies d'un tableau de toutes les espèces qui vivent dans ce fleuve. *Magasin de Zoologie, 5(1-14):* 15.
- De Vos, L. 2001. Rediscovery of the giant catfish *Pardiglanis tarabinii* (Siluriformes: Claroteidae). *Ichthyological Exploration of Freshwaters, 12(3):* 213-214.
- De Vos, L. 2001. *Synodontis manni* (Teleostei: Siluroidea: Machokidae), a new catfish from the Lower Tana River, Kenya. *Ichthyological Exploration of Freshwaters, 12(1):* 41-50.
- Fischer, J.G. 1884. Ueber einige afrikanische Reptilien, Amphibien, und Fische des naturhistorischen Museums. *Jahrbuch der Hamburgischen Wissenschaftlichen Anstalten, 1:* 1-39.
- Forsskål, P. 1775. Descriptions animalium avium, amphibiorum, piscium, insectorum, vermium; quae itinere orientali observavit. Post mortem auctoris edidit. *Carsten Niebuhr. Haunia: 1-164.*
- Geoffroy St. Hilaire, E.F. 1802. Description d'un nouveau genre de poisson (*Polypterus bichir*) de l'ordre des abdominaux. *Bulletin de la Société Philomathique de Paris, 3(10):* 97-98.
- Geoffroy St. Hilaire, E.F. 1809. Poissons du Nil, de la Mer Rouge et de la Méditerranée. In: Description de l'Égypte ou recueil des observations et des recherches qui ont été faites en Égypte pendant l'expédition de l'Armée française, publié par les ordres de sa Majesté-L'Empereur Napoléon le Grand. *Histoire Naturelle, Paris, 1(1):* 1-52.
- Gervais, M.P. 1848. Sur les animaux vertébrés de l'Algérie, envisagés sous le double rapport de la

- geographie zoologique et de la domestication. *Annales des Sciences Naturelles, Paris (Zoologie)*, Sér. 3(10): 202-208.
- Girard, C.F. 1859. Ichthyological notices. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 11: 56-68.
- Gmelin, J.F. 1789. Caroli a Linné ... *Systema Naturae per regna tria naturae, secundum classes, ordines, genera, apecies, cum characteribus, differentiis, synonymis, locis*. Ed. Decimal tertia, au cta, reformata. Pisces. *Lipsiae, 1788-93*, 1(3): 1126-1516.
- Graham, M. 1928. *Tilapia esculenta*, a new species of cichlid fish from the Victoria Nyanza with notes on the habits of the species and the nearly related *Tilapia variabilis* Blgr. *Annals and Magazine of Natural History*, (10)2(8): 209-213.
- Greenwood, P.H. 1956. A new species of *Clariallabes* (Pisces, Clariidae), from the Nile. *Proceedings of the Zoological Society of London*, 127(4): 555-564.
- Greenwood, P.H. 1956. A revision of the Lake Victoria *Haplochromis* species (Pisces, Cichlidae). Part 1. *H. obliquidens* Hilgend., *H. nigricans* Blgr, *H. nuchisquamulatus* (Hilgend.) and *H. lividus* sp. n. *Bulletin of the British Museum (Natural History). Zoology*, 4(5): 223-244.
- Greenwood, P.H. 1956. The monotypic genera of cichlid fishes in Lake Victoria. *Bulletin of the British Museum (Natural History). Zoology*, 3(7): 295-333.
- Greenwood, P.H. 1959. A revision of the Lake Victoria *Haplochromis* species (Pisces, Cichlidae). Part 3. *Bulletin of the British Museum (Natural History). Zoology*, 5(7): 179-218.
- Greenwood, P.H. 1966. Two new species of *Haplochromis* (Pisces, Cichlidae) from Lake Victoria. *Annals and Magazine of Natural History*, (13)8(89): 303-318.
- Greenwood, P.H. 1970. A revision of the cyrinid species *Barbus (Enteromius) radiates* Peters, 1853, with a note on the synonym of the subspecies *Beiraburbus* and *Enteromius*. *Revue de Zoologie et de Botanique Africaines*, 82(1-2): 1-13.
- Greenwood, P.H. 1974. The cichlid fishes of Lake Victoria, East Africa: the biology and evolution of a species flock. *Bulletin of the British Museum (Natural History) Zoology, Supplement 6*: 1-134.
- Greenwood, P.H. 1974. The *Haplochromis* species (Pisces, Cichlidae) of Lake Rudolf, East Africa. *Bulletin of the British Museum (Natural History) Zoology*, 27(3): 141-165.
- Greenwood, P.H. & J.M. Gee. 1969. A revision of the Lake Victoria *Haplochromis* species (Pisces, Cichlidae). Part 7. *Bulletin of the British Museum (Natural History) Zoology*, 18(1): 1-65.
- Günther, A. 1866. *Catalogue of the fishes of the British Museum*. Catalogue of the Physostomi, containing the families Salmonidae, Percopsidae, Galaxidae, Mormyridae, Gymnarchidae, Esocidae, Umbridae, Scombresocidae, Cyprinodontidae, in the collection of the British Museum. v. 6: 1-368.

- Günther, A. 1868. *Catalogue of the fishes in the British Museum*. Catalogue of the Physostomi, containing the families Heteropygii, Cyprinidae, Gonorhynchidae, Hyodontidae, Osteoglossidae, Clupeidae,... [thru]... Halosauridae, in the collection of the British Museum. v. 7: 1-512.
- Günther, A. 1889. On some fishes from the Kilimanjaro district. *Proceedings of the Zoological Society of London 1889*, Pt. 1: 70-72.
- Günther, A. 1894. Report on the collection of reptiles and fishes made by Dr. J.W. Gregory during his expedition to Mount-Kenia. *Proceedings of the Zoological Society of London 1894*, Pt. 1 : 84-91.
- Günther, A. 1896. Report on a collection of fishes made by Dr. A. Donaldson Smith during his expedition to lake Rudolf. *Proceedings of the Zoological Society of London 1896*, Pt. 1: 217-224.
- Hamilton, F. 1822. *An account of the fishes found in the River Ganges and its branches*. Edinburgh and London: 1-405.
- Heckel, J.J. 1847. Naturhistorischer anhang. In: Russenger, J. von. Reisen in Europa, Asien und Afrika, mit besondere Rücksicht auf die naturwissens chaftliche Verhältnisse der betreffende Länder, unternommen inden Jahren 1835 bis 1841. *E. Schweizerbart'sche Verlagshandlung, Stuttgart*. v. 2 (pt 3): 207-357.
- Heckel, J.J. 1851. Veber eine neue Fisch-Species aus dem Weissen Nil, *Protopterus aethiopicus*. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Classe*. v. 6 (pt 2): 685-689.
- Hilgendorf, F.M. 1888. Fische aus den Victoria-Nyanza (Ukerewe-See), gesammelt von den verstorbenen Dr. G.A. Fischer. *Sitzungsberichte der Gesellschaft Naturforschender Freunde zu Berlin 1888*: 75-79.
- Hilgendorf, F.M. 1894. Nene Characinidengattung, *Petersius* aus dem Kingani-Flusse in Deutsch-Ostafrika. *Sitzungsberichte der Gesellschaft Naturforschender Freunde zu Berlin 1894*: 172-173.
- Hilgendorf, F.M. 1905. Fische von Deutsch und English Ost-Afrika. *Zoologische Jahrbücher, Abteilung für Systematik, Geographie und Biologie der Tiere (Jena)*, v. 22 (No. 4): 405-420.
- Holly, M. 1929. Einige neue afrikanische Fishformen. *Anzeiger der Akademie der Wissenschaften in Wien*, 66(3): 32-35.
- Hopson, A. J. & J. Hopson. 1982. The fishes of Lake Turkana with a description of three new species: *Alestes ferox* sp. nov., *Alestes minutus* sp. nov. (Pisces, Characidae) and *Barbus turkanae* sp. nov. (Pisces, Cyprinidae): 283-347. In: A. J. Hopson (ed.). *Lake Turkana: A report on the findings of the Lake Turkana project, 1972-1975*. Overseas Development Administration, London. v. 1. 347 pp.
- La Cèpède, B.G.E. 1802. *Histoire naturelle des poissons*. v. 4. 728 pp.

- La Cepède, B.G.E. 1803. *Histoire naturelle des poissons*. v. 5: 803 pp.
- Linnaeus, C. 1758. *Systema naturae*. Holmiae. v. 1. 824 pp.
- Linnaeus, C. 1762. Pisces: 371-448. In: *D. Friedrich Hasselquists, der Akademien der Wissenschaften zu Stockholm und Upsala Mitglieds, Reise nach Palästina in dem Jahren von 1749 bis 1752*. J.C. Koppe Rostock. 606 pp.
- Lönnerberg, A.J.E. 1907. Fishes. Sjöstedts Kilimandjaro-Meru Expedition, 5. *Uppsala*: 1-8.
- Lowe-McConnell, R.H. 1955. New species of *Tilapia* (Pisces, Cichlidae) from Lake Jipe and the Pangani River, East Africa. *Bulletin of the British Museum (Natural History) Zoology*, 2(12): 347-368.
- McClelland, J. 1845. Apodal fishes of Bengal. *Calcutta Journal of Natural History*, 5(18): 151-226.
- Nagy, B. 2009. Distribution of *Nothobranchius* species in the coastal part of Kenya. *Journal of the American Killifish Association*, 42(5): 194-214.
- Norman, J.R. 1928. Two new fishes from Lake Victoria. *Annals and Magazine of Natural History*, (10)2(7): 104-106.
- Owen, R. 1839. On a new species of the genus *Lepidosiren* of Fitzinger and Natterer. *Proceedings of the Linnean Society of London 1839*, v. 1: 27-32.
- Pellegrin, J. 1904. Contribution à l'étude anatomique, biologique et taxonomique des poissons de la famille des Cichlidés. *Mémoires de la Société Zoologique de France*, 16(2-4): 41-402.
- Pellegrin, J. 1904. Diagnoses préliminaires de poissons nouveaux du lac Victoria recueillis par M. Alluaud. *Bulletin de la Société Zoologique de France*, 29(8): 184-186.
- Pellegrin, J. 1926. Poissons de l'Afrique orientale anglaise recueillis par le R.P. Bernard. Description de trois espèces nouvelles. *Bulletin de la Société Zoologique de France*, 51: 384-390.
- Peters, W.C.H. 1844. Über einen den *Lepidosiren annectens* verwandten, mit Lungen und Kiemen zugleich versehenen Fisch aus den Sümpfen von Quellimane vor. *Monatsberichte der Königlichen Preussischen Akademie der Wissenschaften zu Berlin 1844*: 411-414.
- Peters, W.C.H. 1852. Diagnosen von neuen Fließ-Fischen aus Mossambique. *Monatsberichte der Königlichen Preussischen Akademie der Wissenschaften zu Berlin 1852*: 275-276, 681-685.
- Peters, W.C.H. 1854. Mitscheilung über die Süßwasser fische von Mossambique. *Monatsberichte der Königlichen Preussischen Akademie der Wissenschaften zu Berlin 1853*: 783.
- Peters, W.C.H. 1859. Eine neue vom Herrn Jagor im atlantischen Meere gefangene Art der Gattung *Leptocephalus*, und über einige andere neue Fische des Zoologischen Museums. *Monatsberichte der Königlichen Preussischen Akademie der Wissenschaften zu Berlin 1859*: 411-413.

- Peters, W. C. H. 1868. Über eine von dem Baron Carl von der Decken entdeckte neue Gattung von Welsen, *Chiloglanis deckenii*, und einige andere Süßwasserfische aus Ostafrika. *Monatsberichte der Königlichen Preussischen Akademie der Wissenschaften zu Berlin 1868*: 598-602.
- Peters, N. 1882. Über drei neue Arten von *Mormyrus* aus Ost- und Westafrika, und eine Art von *Clarias* aus Westafrika. *Sitzungsberichte der Gesellschaft Naturforschender Freunde zu Berlin 1882*: 72-74.
- Pfeffer, G.J. 1889. Übersicht der von Herrn Dr. Franz Stuhlmann in Ägypten, auf Sanzibar und dem gegenüberliegenden Festlande gesammelten Reptilien, Amphibien, Fische, Mollusken und Krebse. *Jahrbuch der Hamburgischen Wissenschaftlichen Anstalten*, v. 6 (art. 4): 1-36.
- Pfeffer, G. 1893. Ostafrikanische Fische gesammelt von Herrn Dr. F. Stuhlmann in Jahre 1888 und 1889. *Jahrbuch der Hamburgischen Wissenschaftlichen Anstalten*, v. 10: 131-177.
- Pfeffer, G.J. 1896. Die Thierwelt Ost-Afrikas und der Nachbargebiete. *Lief. v. Die Fische Ost-Afrikas*. v. 3: 1-72.
- Playfair, R.L. & A. Günther. 1866. The fishes of Zanzibar, with a list of the fishes of the whole east coast of Africa. *London*: 1-153. [Reprinted in 1971].
- Poll, M., B. Lanza & A. Romoli Sassi. 1972. Genre nouveau extraordinaire de Bagridae du fleuve Juba: *Pardiglanis tarabinii* gen. n. sp. n. (Pisces Siluriformes). *Monitore Zoologico Italiano Suppl.* 4 (No. 15): 327-345.
- Rafinesque, C.S. 1820. Ichthyologia Ohiensis, or natural history of the fishes inhabiting the river Ohio and its tributary streams, preceded by a physical description of the Ohio and its branches. *Lexington, Kentucky*. W. G. Hunt: 1-90.
- Regan, C.T. 1922. The cichlid fishes of Lake Victoria. *Proceedings of the Zoological Society of London 1922*, Pt. 1 (No. 9): 157-191.
- Ricardo, C.K. 1939. The fishes of Lake Rukwa. *Journal of the Linnean Society of London. Zoology*, 40(275): 625-657.
- Rüppell, W.P.E.S. 1829. Beschreibung und Abbildung mehrerer neuer Fische, im Nil entdeckt. *Brönner, Frankfurt am Main*: 1-12.
- Rüppell, W.P.E.S. 1832. Fortsetzung der Beschreibung und Abbildung mehrerer neuer Fische, im Nil entdeckt. *Brönner, Frankfurt am Main*: 1-28.
- Rüppell, W.P.E.S. 1835-1838. Neue Wirbelthiere zu der Fauna von Abyssinien gehörig. Fische des Rothen Meeres. *Siegmund Schmerber, Frankfurt am Main*: 1-148.
- Sauvage, H.E. 1883. Description de quelques poissons de la collection du Muséum d'histoire naturelle. *Bulletin de la Société philomathique de Paris*, (7th Sér.) v. 7: 156-161.
- Seegers, L. 1981. *Nothobranchius cyaneus* spec. nov., ein neuer Prachtgrundkärpfling aus Kenia. *Aquarien und Terrarien-Zeitschrift*, 34(11): 365-368.

- Seegers, L. 1990. Bemerkungen zur Gattung *Pseudocrenilabrus* Teil 2: *Pseudocrenilabrus multicolor victoriae* nov. subsp. *Aquarien und Terrarien-Zeitschrift*, 43(2): 99-103.
- Smith, A. 1838-1847. Pisces. In: *Illustrations of the zoology of South Africa; consisting chiefly of figures and descriptions of the objects of natural history collected during an expedition into the interior of South Africa in 1834-36*, v. 4: 77 pp.
- Smith, J.L.B. 1959. Gobioid fishes of the families Gobiidae, Periophthalmidae, Trypauchenidae, Taenioididae and Kraemeriidae of the western Indian Ocean. *Ichthyological Bulletin, Department of Ichthyology, Rhodes University*, No. 13: 185-225.
- Steindachner, F. 1870. Zur Fischfauna des Senegal. Zweite Abtheilung. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Classe*, v. 60 (1. Abth.): 945-995.
- Trewavas, E. 1928. Description of 5 new cichlid fishes of the genus *Haplochromis* from Lake Victoria. *Annals and Magazine of Natural History*, (10)2(7): 93-95.
- Trewavas, E. 1933. Scientific results of the Cambridge expedition to the East African lakes 1930-1931, II. The cichlid fishes. *The Journal of the Linnean Society of London. Zoology*, 38(259): 309-341.
- Trewavas, E. 1983. Tilapiine fishes of the genera *Sarotherodon*, *Oreochromis* and *Danakilia*. 9 unnumbered pp. + 1-583.
- Vaillant, L.L. 1895. Sur le dentition des *Synodontis* et diagnose d'espèces nouvelles. *Bulletin de la Société Philomathique de Paris*, 16: 47-48.
- Valenciennes, A. 1840. Nouvelles observations sur l'organe électrique du silure électrique (*Malapterurus electricus* Lacepède). *Annales des Sciences Naturelles*, 2(14): 241-244.
- Vinciguerra, D. 1895. Esplorazione del Giuba e dei suoi affluenti compiuta dal Cap. V. Bottego durante gli anni 1892-93 sotto gli auspicii della Società geografica Italiana. III. Pesci. *Annali del Museo Civico di Storia Naturale di Genova*, (Ser. 2) v. 15: 21-60.
- Vinciguerra, D. 1897. Pesci raccolti dal Cap. V. Bottego durante la sua seconda spedizione nelle regioni dei Somali e dei Galla. *Annali del Museo Civico di Storia Naturale di Genova* (Ser. 2) v. 17: 343-364.
- Vinciguerra, D. 1927. Enumerazione di alcune specie di pesci della Somalia Italiana raccolte dal Marchese Savario Patrizi. *Annali del Museo Civico di Storia Naturale 'Giacomo Doria'*, v. 52: 246-259.
- Walbaum, J.J. 1792. Petri Artedi sueci genera piscium. In quibus systema totum ichthyologiae proponitur cum classibus, ordinibus, generum characteribus, specierum differentiis, observationibus plurimis. Redactis speciebus 242 ad genera 52. *Ichthyologiae pars III. Ant. Ferdin. Rose, Grypeswaldiae*. 792 pp.
- Whitehead, P.J.P. 1958. A new species of *Chiloglanis* (Pisces: Mochocidae) in Kenya. *Annals and Magazine of Natural History*, (13)1(3): 197-208.

- Whitehead, P.J.P. 1960. Three new cyprinid fishes of the genus *Barbus* from the Lake Victoria basin. *Revue de Zoologie et de Botanique Africaines*, 62(1-2): 106-119.
- Whitehead, P.J.P. 1962. The relationship between *Tilapia nigra* (Günther) and *T. Mossambica* Peters in the eastern rivers of Kenya. *Proceedings of the Zoological Society of London*, 138(4): 605-637.
- Whitehead P. J. P. & P. H. Greenwood. 1959. Mormyrid fishes of the genus *Petrocephalus* in Eastern Africa with a redescription of *Petrocephalus gliroides* (Vinciguerra). *Revue de Zoologie et de Botanique Africaines*, 60(3-4): 283-295.
- Wildekamp, R.H. 1982. Die *Nothobranchius* - Arten des Küstengebietes Kenias. *Aquarien und Terrarien-Zeitschrift*, 35(9): 333-339.
- Wildekamp, R.H. 1992. A new *Nothobranchius* (Cyprinodontiformes: Aplocheilidae) from the Kenyan coastal plains, with a redefinition of the subgenus *Aphyobranchius*. *Ichthyological Exploration of Freshwaters*, 3(2): 187-192.
- Wildekamp, R.H. 1994. The *Nothobranchius* species from Uganda, with description of a new polymorphic species (Cyprinodontiformes: Aplocheilidae). *Ichthyological Exploration of Freshwaters*, 5(3): 193-206.
- Wildekamp, R.H. & H.O. Berkenkamp. 1979. Untersuchungen zur Identität von *Nothobranchius neumanni* (Hilgendorf, 1905) aus Tansania, mit der Beschreibung einer neuen Art und einer Unterart aus dem Küstentiefland Kenias. *Deutsche Killifisch Gemeinschaft Journal*, 11(5): 65-75.
- Wildekamp, R.H. & R. Haas. 1992. Redescription of *Nothobranchius microlepis*, description of two new species from northern Kenya and southern Somalia, and note on the status of *Paranothobranchius* (Cyprinodontiformes: Aplocheilidae). *Ichthyological Exploration of Freshwaters*, 3(1): 1-16.
- Worthington, E.B. 1929. New species of fish from the Albert Nyanza and Lake Kioga. *Proceedings of the Zoological Society of London*, 99(3): 429-440.
- Worthington, E.B. 1932. Scientific results of the Cambridge expedition to the East African lakes, 1930-1931 - 2. Fishes other than Cichlidae. *The Journal of the Linnean Society of London. Zoology*, 38(258): 121-134.

BIBLIOGRAPHY

- Angienda, P.O., H.J. Lee, K.R. Elmer, R. Abila, E.N. Waindi & A. Meyer. 2011. Genetic structure and gene flow in an endangered native tilapia fish (*Oreochromis esculentus*) compared to invasive Nile tilapia (*Oreochromis niloticus*) in Yala swamp, East Africa. *Conservation Genetics*, 12(1): 243-255.
- Banister, K.E. 1980. A new species of *Barbus* from Africa. *Bulletin of the British Museum (Natural History) Zoology*, 38(3): 145-150.
- Barel, C.D.N., M.J.P. van Oijen, F. Witte & E.L.M. Witte-Maas. 1977. An introduction to the taxonomy and morphology of the Haplochromine Cichlidae from Lake Victoria. *Netherlands Journal of Zoology*, 27(4): 333-389.
- Bianchi, G. 1985. *Field guide to the commercial marine brackish species of Tanzania*. FAO. Rome. 200 pp.
- Bleeker, P. 1849. Bijdrage tot de kennis der Blennioïden en Gobioiden van der Soenda-Molukschen Archipel, met beschrijving van 42 nieuwe soorten. *Verhandelingen van het Bataviaasch Genootschap van Kunsten en Wetenschappen*, 22(6): 1-40.
- Bleeker, P. 1849. Bijdrage tot de kennis der ichthyologische fauna van het eiland Madura, met beschrijving van eenige nieuwe soorten. *Verhandelingen van het Bataviaasch Genootschap van Kunsten en Wetenschappen*, 22(8): 1-16.
- Bleeker, P. 1852. Bijdrage tot de kennis der ichthyologische fauna van de Moluksche Eilanden. Visschen van Amboina en Ceram. *Natuurkundig Tijdschrift voor Nederlandsch Indië*, v. 3: 229-309.
- Bleeker, P. 1851-1852. Bijdrage tot de kennis der Chirocentroïdei, Lutodeiri, Butirini, Elopes, Notopteri, Salmones, Echeneoïdei en Ophidini van den Soenda-Molukschen Archipel. *Verhandelingen van het Bataviaasch Genootschap van Kunsten en Wetenschappen*, 24(7): 1-32.
- Bleeker, P. 1854. Derde bijdrage tot de kennis der ichthyologische fauna van de Banda-eilanden. *Natuurkundig Tijdschrift voor Nederlandsch Indië*, v. 6: 89-114.
- Bleeker, P. 1854. Speciés piscium bataviensium novae vel minus cognitae. *Natuurkundig Tijdschrift voor Nederlandsch Indië*, v. 6: 191-212.
- Bleeker, P. 1860. Dertiende bijdrage tot de kennis der vischfauna van Borneo. *Acta Societatis Regiae Scientiarum Indo-Neerlandicae*, 8(4): 1-64.

- Boulenger, G.A. 1905. On a second collection of fishes made by Mr S.L. Hinde in the Kenya district, East Africa. *Proceedings of the Zoological Society of London 1905*, 1(1): 62-64.
- Boulenger, G.A. 1907. *Zoology of Egypt: The fishes of the Nile*. Hugh Rees, Ltd., London. 578 pp.
- Campbell, K., C. Coe & M. Saunders. 1986. A survey of fishes of the Tana River at Kora and a checklist of fishes of the Tana River: 175-188. In: M. Coe, & N.M. Collins, (eds.). *An ecological inventory of the Kora National Reserve, Kenya*. Royal Geographical Society, London.
- Daget, J., J.P. Gosse & D.F.E. Thys van den Audenaerde (eds.). 1984. *Check-list of the freshwater fishes of Africa, CLOFFA*. MRAC Tervuren, ORSTOM Paris. v. 1. 410 pp.
- Daget, J., J.P. Gosse & D.F.E. Thys van den Audenaerde (eds.). 1986. *Checklist of the freshwater fishes of Africa, CLOFFA*. ISBN Bruxelles, MRAC Tervuren, ORSTOM Paris. v. 3. 273 pp.
- Daget, J., J.P. Gosse & D.F.E. Thys van den Audenaerde (eds.). 1991. *Checklist of the freshwater fishes of Africa, CLOFFA*. ISBN Bruxelles, MRAC Tervuren, ORSTOM Paris. v. 4. 740 pp.
- De Vos, L. & P.H. Skelton. 1990. Name changes for two common African catfishes. Rehabilitation of *Schilbe intermedius* Rüppell, 1832 (Siluriformes, Schilbeidae). *Cybium*, 14(4): 323-326.
- FishBase. 1998. *FishBase 98*. CD-Rom. ICLARM, Manila.
- FishBase. 1999. *FishBase 99*. CD-Rom. ICLARM, Manila.
- Fryer, G. 1960. Notes on two small fishes of Lake Victoria. *Annual Report of the East African Freshwater Fisheries Research Organization 1959*: 28.
- Fryer, G. & T.D. Iles. 1972. *The cichlid fishes of the great lakes of Africa: Their Biology and Evolution*. Oliver & Boyd, Edinburgh. 641 pp.
- Greenwood, P.H. 1957. A revision of the Lake Victoria *Haplochromis* species (Pisces, Cichlidae) Pt. II. *H. sauvagei* (Pfeffer), *H. prodromus* Trewavas, *H. granti* Blgr., and *H. xenognathus* sp. n. *Bulletin of the British Museum (Natural History) Zoology*, 5(4): 75-97.
- Greenwood, P.H. 1960. A revision of the Lake Victoria *Haplochromis* species (Pisces Cichlidae) Part IV. *Bulletin of the British Museum (Natural History) Zoology*, 6(4): 227-281.
- Greenwood, P.H. 1962. A revision of the Lake Victoria *Haplochromis* species (Pisces, Cichlidae). Part V. *Bulletin of the British Museum (Natural History) Zoology*, 9(4): 139-214.
- Greenwood, P.H. 1967. A revision of the Lake Victoria *Haplochromis* species (Pisces, Cichlidae). Part VI. *Bulletin of the British Museum (Natural History) Zoology*, 15(2): 29-119.
- Greenwood, P.H. 1981. *The haplochromine fishes of the East African lakes*. Kraus International Publications, München. 839 pp.
- Greenwood, P.H. & C.D.N. Barel. 1978. A revision of the Lake Victoria *Haplochromis* species (Pisces, Cichlidae), Part VIII. *Bulletin of the British Museum (Natural History) Zoology*, 33(2): 141-192.

- Harrison, K. 1991. The Taxonomy of East African Nile perch, *Lates* spp. (Perciformes, Centropomidae). *Journal of Fish Biology*, 38(2): 175-186.
- Hilgendorf, F.M. 1891. Eine Aufzählung der von Emin Pascha und Dr. Stuhlmann gesammelten Fische und Krebse. *Sitzungsberichte der Gesellschaft Naturforschender Freunde zu Berlin 1891*: 18-20.
- Hoogerhond, R.J.E. & F. Witte. 1981. Revision of species from the "*Haplochromis*" *empodisma* group. Revision of the haplochromine species (Teleostei, Cichlidae) from Lake Victoria. Part 2. *Netherlands Journal of Zoology*, 31(1): 232-274.
- Hopson, A.J. (ed.). 1982. *Lake Turkana. A report on the findings of the Lake Turkana project 1972-1975*. Overseas Development Administration, London. Vols 1–6. 1614 pp.
- Kaup, J.J. 1856. *Catalogue of lophobranchiate fish in the collection of the British Museum*. Taylor & Francis, London. 76 pp.
- La Cépède, B.G.E. 1801. *Histoire naturelle des poissons*. v. 3: 558 pp.
- Löhberger, K. 1929. Einige neue Fischformen aus dem Viktoriasee. *Anzeiger der Akademie der Wissenschaften in Wien*, 66(11): 92-94.
- Lowe-McConnell, L. 2003. Recent research in the African great lakes: fisheries biodiversity and cichlid evolution. *Freshwater Forum*, 20(1): 4-64.
- Meinken, H. 1971. Neue Zahnkarpfen aus dem Victoria-See (Pisces: Teleostei: Cyprinodontidae). *Senckenbergiana Biologica*, 52(6): 429-436.
- Mitchill, 1814. Report, in part, of Samuel L. Mitchill, M. D., Professor of Natural History, &c, on the fishes of New-York. *D. Carlisle, New York*: 1-28.
- Myers, G.S. 1955. Note on the classification and names of cyprinodont fishes. *Tropical Fish Magazine*, March 1955: 7.
- Nichols, J.T. 1923. A new wrasse and two new cichlids from northeastern Africa. *American Museum Novitates*, 65: 1-4.
- Nichols, J.T. & F.R. La Monte. 1938. Two new fishes from Lake Victoria. *American Museum Novitates*, 1001: 1-3.
- Norman, J.R. 1923. A new cyprinoid fish from Tanganyika Territory, and two new fishes from Angola. *Annals and Magazine of Natural History*, (9)12(72): 694-696.
- Okeyo, D.O. 2003. Riverine fishes of Kenya: the current status on the diversity and distribution in the Ragati-Sagana-Tana Rivers drainage system. *Discovery and Innovation*, 15(1/2): 87-97.
- Okeyo, D.O. 2004. Taxonomic notes on fishes of Kenya. *UNISWA Research Journal of Agriculture, Science and Technology*, 7(1): 5-17.

- Okeyo, D.O. 2006. On the distribution of fishes of Kenya's Great Rift Valley drainage system. *Discovery and Innovation*, 18(2): 141-159.
- Pellegrin, J. 1909. Diagnoses préliminaires de poissons nouveaux de l'Afrique orientale anglaise recueillis par M. Ch. Alluaud. *Bulletin de la Société Zoologique de France*, 34: 156-159.
- Pellegrin, J. 1913. Diagnoses préliminaires de Cichlidés nouveaux du lac Victoria recueillis par MM. Alluaud et Jeannel. *Bulletin de la Société Zoologique de France*, 37: 311-314.
- Peters, W.C.H. 1869. Über neue oder weniger bekannte Fische des Berliner Zoologischen Museums. *Monatsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin 1869*: 703-711.
- Pfeffer, G.J. 1894. *Die Thierwelt Ost-Afrikas und der Nachbargebiete*. Lief. v. Die Fische Ost-Afrikas. v. 3. 72 pp.
- Poll, M. 1967. Révision des Characidae nains Africains. *Annales, Musée Royal de l'Afrique Centrale, Tervuren, Série in 8o, Sciences Zoologiques*, No. 162: 1-158.
- Regan, C.T. 1929. New cichlid fishes from lakes Victoria, Kioga, and Albert. *Annals and Magazine of Natural History*, (10)3(16): 388-392.
- Regan, C.T. & E. Trewavas. 1928. Four new cichlid fishes from Lake Victoria. *Annals and Magazine of Natural History*, (10)2(8): 224-226.
- Rüppell, W.P.E.S. 1828. Atlas zu der Reise im nördlichen Afrika. Fische des Rothen Meers. *Frankfurt am Main (Heinrich Ludwig Brönnner)*, Pt. 1: 1-26.
- Rüppell, W.P.E.S. 1835. Neuer Nachtrag von Beschreibungen und Abbildungen neuer Fische, im Nil entdeckt. *Museum Senckenbergianum: Abhandlungen aus dem Gebiete der beschreibenden Naturgeschichte, von Mitgliedern der Senckenbergischen Naturforschenden Gesellschaft in Frankfurt am Main*, 2(1): 1-28 [Date on cover is 1837, first appeared as a separate in 1835].
- Sauvage, H.E. 1880. Description des Gobioides nouveaux ou peu connus de la collection du Muséum d'histoire naturelle. *Bulletin de la Société Philomathique de Paris*, (7th Sér.) v. 4: 40-58.
- Schöller, C.H. 1903. Ein neuer *Chromis* (Schluß). *Blätter für Aquarien- und Terrarien-Kunde*. *Stuttgart*, 14(15): 185-187.
- Skelton, P.H. 2001. *A complete guide to the freshwater fishes of southern Africa*. Struik Publishers, Halfway House, South Africa. 395 pp.
- Smith, D.F. 1950. Trout fishing, 1948 and 1949, report: 2-6. In: A. Copley (ed.). *Review of Kenya Fisheries 1948 and 1949*. Colony and Protectorate of Kenya. Govt. Printer, Nairobi.
- Smith, M.M. and P.C. Heemstra (eds.). 1986. *Smith's Sea Fishes*. Macmillan South Africa, Johannesburg. 1047 pp.
- Trewavas, E. 1964. A new species of *Irveineia*, an African genus of schilbeid fishes. *Annali del*

Museo Civico di Storia Naturale 'Giacomo Doria', v. 74: 388-396.

- van Oijen, M.J.P. 1992. *Haplochromis howesi* spec. nov., a crab and fish eating cichlid from Lake Victoria. *Zoologische Mededelingen (Leiden)*, 66(40): 561-579.
- Vinciguerra, D. 1883. Spedizione Italiana nell'Africa equatoriale. Risultati zoologici. Pesci d'Acqua dolce. *Annali del Museo Civico di Storia Naturale di Genova*, v. 18: 691-703.
- Welcomme, R.L. 1964. The habitats and habitat preferences of the young of the L. Victoria Tilapia (Cichlidae). *Revue de Zoologie et de Botanique Africaines*, 70: 1-28.
- Whitehead, P.J.P. 1959. The anadromous fishes of lake Victoria. *Revue de Zoologie et de Botanique Africaines*, 59: 329-363.
- Witte, F & E.L.M. Witte-Maas. 1987. Haplochromine Cleaner Fishes: a Taxonomic and Eco-Morphological Description of Two New Species. *Netherlands Journal of Zoology*, 31(1): 203-230.
- Witte, F & E.L.M. Witte-Maas. 1981. Implications for taxonomy and functional morphology of intraspecific variation in Haplochromine cichlids of Lake Victoria with descriptions of five zooplanktivorous species: 1-83. In: F. Witte. *From form to fishery: an ecological and taxonomical contribution to morphology and fishery of Lake Victoria cichlids*. Ph.D. Thesis Rijksuniversiteit, Leiden. 144 pp.
- Witte-Maas, E.L.M. & F. Witte 1985. *Haplochromis nyererei*, a new cichlid fish from Lake Victoria named in honour of Mwalimu Julius Nyerere, President of Tanzania. Brill Publishers, Leiden: 1-13.

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A Photographic Guide to
**FRESHWATER FISHES
OF KENYA**

This first photographic guide to the freshwater fishes of Kenya can be said to fill a long-standing rift in the natural history literature of eastern Africa.

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