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[Tokyo?] :Kagaku Kisho Hakkokai, Showa 13 [1938].

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Fam. 10. MORMYRIDÆ.

Mormyri, Müll. *Abhandl. Akad. Wiss. Berl.* 1844, p. 189.

Body and tail scaly, head scaleless; barbels none. The margin of the upper jaw is formed in the middle by the intermaxillaries which coalesce into a single bone, and laterally by the maxillaries. Interoperculum sometimes rudimentary. On each side of the single parietal bone a cavity leading into the interior of the skull, and covered with a thin bony lamella. All the fins well developed; no adipose fin. A series of pores along the base of the dorsal and anal fins. Pseudobranchiæ none; gill-opening reduced to a short slit. Air-bladder simple. Two cæca pylorica behind the stomach.

Rivers of tropical Africa.

On the anatomy of the fishes of this family, and especially on the gelatinous band-like bodies situated on each side of the tail, which have been erroneously believed to be electric organs, see Rüppell, 'Fortsetzung der Beschreibung neuer Fische im Nil entdeckt,' p. 9; Gemminger, 'Electrisches Organ von *Mormyrus*;' Erdl, *Abhandl. Bayr. Akad. Wiss.* p. 209; Kölliker, *Bericht von der zootom. Anstalt zu Würzburg*, 1849; Valenciennes in the 'Histoire Naturelle des Poissons,' *ll. cc.*; Hyrtl, *Denkschr. Akad. Wiss. Wien*, 1856, xii. p. 1; Marcusen, *Mém. Acad. Sc. St. Pétersb.* 1864, t. vii.

The species of this family may be referred to the following genera:—

- | | |
|--|-------------------------|
| A narrow band of pointed teeth along the middle of the palate and of the tongue. | 1. MORMYRUS, p. 214. |
| A broad patch of obtuse, molar-like teeth on the roof and bottom of the mouth. | 2. HYPEROPISUS, p. 222. |
| No teeth on the palate or on the tongue | 3. MORMYROPS, p. 223. |

1. MORMYRUS*.

Mormyrus, sp., *L. Syst. Nat.* i. p. 522; *Geoffr. Descr. Ég. Zool.* i. p. 265.
Mormyrus and *Mormyrops*, sp., *Müll. Berl. Abhandl.* 1844, p. 190.
Mormyroides, *Gnathonemus*, *Petrocephalus*, *Gill. Proc. Acad. Nat. Sc. Philad.* 1862, p. 443.

A narrow band of pointed teeth along the middle of the palate and of the tongue.

* 1. *Mormyrus jubilini*, C. & V. xix. p. 252.—" 85. A. 19.—Senegal.
 2. — *nacra*, C. & V. xix. p. 257.—Nile.

The species may be referred to the following divisions:—

- I. Dorsal fin occupying the greater portion of the length of the back; anal short, p. 215.
- II. Dorsal and anal fins subequal and moderate in length; snout long and decurved, p. 217.
- III. Dorsal and anal fins subequal and moderate in length; cleft of the mouth terminal or directed upwards; snout short, p. 218.
- IV. Snout short, obtuse, with the cleft of the mouth at its lower side, p. 220.

- I. *Dorsal fin occupying the greater portion of the length of the back; anal short.*

1. *Mormyrus caschive*.

Mormyrus caschive, *Hasselq. It. Palæst.* p. 398; *Cuv. & Val.* xix. p. 227; *Marcusen, Mormyr.* p. 120*.

— *longipinnis*, *Rüpp. Fortsetz. Beschreib. neuer Fisch. Nil*, p. 7, pl. 1. fig. 2.

D. 81–87. A. 18–20. V. 6. Vert. $\frac{21-22}{31-32}$.

Scales very small. Snout conical, much produced, slightly bent downwards, the pupil of the eye being exactly in the middle of the length of the head. Lower lip somewhat projecting beyond the upper. Teeth very small, slightly dilated, the crown with a shallow notch. The height of the body is nearly equal to the length of the head, which is two-ninths of the total (without caudal).

Nile.

a-b. Fine specimens, 23 inches long. Chartoum. From Consul Petherick's Collection.

c-f. Young. Lower Nile. From Dr. Rüppell's Collection.

Mormyrus rume, *Cuv. & Val.* xix. p. 247, pl. 569, is scarcely distinct from *M. caschive*; it is said to have the scales somewhat larger, about 112 along the lateral line.—Senegal.

2. *Mormyrus mucupe*.

Mormyrus mucupe, *Peters, Monatsber. Acad. Wiss. Berl.* 1852, p. 275.

D. 71. A. 18.

Snout slender, decurved, with the lower jaw prominent. (*Peters.*)

Mossambique.

3. *Mormyrus oxyrhynchus*.

Mormyrus kannume, *Forsk, Descript. Anim.* p. 74 *Lacép. v.* p. 619; *Marcusen, Mormyr.* p. 114.

* To show the variability of the fin-rays within the limits of a species, Dr. Marcusen has selected the instance of *Chromis niloticus* and *Tilapia*. But it is now perfectly well known that Africa is inhabited by a considerable number of Chromides; and nobody who has studied these fish, will doubt that *Tilapia* is a very distinct species from *Chr. niloticus*.

Mormyrus oxyrhynchus, *Geoffr. Descr. Eg. Poiss.* i. p. 270, pl. 6. fig. 1;
Joannis, Guér. Mag. Zool. pl. 13 (bad); *Cuv. & Val.* xix. p. 242.
 — *bachiqua*, *Cuv. & Val.* xix. p. 248.

D. 58-66. A. 18-20. V. 6. L. lat. ca 130. Vert. $\frac{22-23}{26}$.

Snout conical, much produced, slightly bent downwards, the pupil of the eye being scarcely nearer to the end of opercle than to the extremity of the snout. Lower lip somewhat projecting beyond the upper. Teeth not very small, slightly dilated, the crown with a shallow notch. The height of the body is nearly equal to the length of the head, which is two-ninths or a little more than two-ninths of the total (without caudal).

Nile.

a, b-d, e, f. Adult and half-grown. Lower Nile.

g. Adult: stuffed. Egypt. Purchased of Dr. Heckel.

h-n. Half-grown and young. Chartoum. From Consul Petherick's Collection.

o. Adult male: skeleton. Lower Nile. From Consul Petherick's Collection.

p. Adult: skeleton. Lower Nile. From Dr. Rüppell's Collection.

4. *Mormyrus longirostris*.

Mormyrus longirostris, *Peters, Monatsber. Akad. Wiss. Berl.* 1852, p. 275.

D. 74. A. 18.

Head very long, with the snout slender and decurved; upper jaw prominent. (*Pet.*)

Mossambique.

5. *Mormyrus geoffroyi*.

? *Pococke, Reise*, i. p. 315, taf. 70; Engl. edit. p. 202 (according to Schneider).

? *Centriscus niloticus*, *Bl. Schn.* p. 113, tab. 30. fig. 1.

? *Mormyrus geoffroyi*, *Cuv. & Val.* xix. p. 240.

D. 74-77. A. 17-19. V. 6.

Scales very small. Snout conical, much produced, with its longitudinal axis nearly in the same line as the axis of the body; eye almost in the middle of the length of the head. Lower lip somewhat projecting beyond the upper. Teeth very small, slightly dilated, the crown with a shallow notch. The height of the body is nearly equal to the length of the head, which is two-ninths of the total (without caudal).

Nile.

a, b. Half-grown. Lower Nile.

It may appear doubtful whether these specimens are correctly referred to *M. geoffroyi*, as Valenciennes states eighty-four dorsal rays; however, as they agree in all other respects with Valenciennes's description of that species, I would not separate them under a distinct name.

6. Mormyrus hasselquistii.

Mormyrus herse, *Lacép.* v. pp. 621–623 (not *Sonn.*).

— *caschive* *Geoffr. Descr. Ég. Poiss.* i. p. 273, pl. 6. fig. 2.

— *hasselquistii*, *Cuv. & Val.* xix. p. 253; *Marcusen, Mormyr.* p. 130.

D. 70. A. 18. L. lat. 115. Vert. 21/29.

Snout rather thick and obtuse, with the upper jaw somewhat projecting beyond the lower. Eye situated in the anterior third of the length of the head, which is one-fourth of the total (without caudal). Teeth very small, with their crown slightly emarginate.

Nile; West Africa.

a. Half-grown. West Africa. Purchased of Mr. Dalton.

7. Mormyrus macrophthalmus.

D. 64. A. 21. L. lat. 88.

Snout much shorter than in *M. caschive* and in the other species allied to it; it is compressed, and abruptly bent downwards, the upper profile of the head being strongly curved; it is not much longer than the eye, which is large, two-sevenths of the length of the head. Jaws equal anteriorly, armed with small teeth, which are dilated and truncated at their summits. The length of the dorsal is not quite one-half of the total; anal much higher than dorsal, its distance from the caudal being one-fourth of the total length. Caudal forked to the base, with the lobes slender and pointed. The pectoral extends to, or nearly to, the root of the ventral, the length of which is two-thirds of that of the pectoral. The height of the body is one-fifth of the total length (without caudal), the length of the head one-sixth. Coloration uniform, sides shining silvery.

West Africa.

a. Male, 13 inches long. Purchased of Mr. Dalton.

II. *Dorsal and anal fins subequal and moderate in length; snout long, decurved.*

8. Mormyrus tamandua.

Mormyrus tamandua, *Günth. Proc. Zool. Soc.* 1864, January, pl. 2. fig. 1.

D. 28. A. 31. L. lat. 80.

Snout much prolonged, tubiform, tapering and curved downwards; the lower jaw terminating in a short skinny flap as long as the eye. The distance between the eye and the gill-opening is half that between eye and the end of the mandibular flap; eye rather small. Teeth very small, conical, few in number. Pectoral nearly twice as long as the ventral, extending beyond its base. The height of the body is two-ninths of the total length (without caudal), the length of the head one-fourth.

West Africa.

a. Type of the species. Purchased of Mr. Dalton.

9. *Mormyrus petersii*.

Mormyrus petersii, Günth. *Wiegmann's Arch.* 1862, p. 64, and *Proc. Zool. Soc.* 1864, p. 22, pl. 2. fig. 2.

D. 27. A. 34. L. lat. 66.

Snout subconical, somewhat decurved, with the mandible prolonged into a long, conical, fleshy appendage, which is nearly half as long as the head. Eye small, situated before the middle of the length of the head. Teeth very small, dilated, notched at the apex, few in number. Pectoral extending beyond the middle of the length of the ventrals. The height of the body is rather more than one-fourth of the total length (without caudal), the length of the head two-ninths. Dark brown, with two lighter cross bands between dorsal and anal fins.

Old Calabar.

a. Type of the species. Presented by Dr. A. Günther.

III. *Dorsal and anal fins subequal and moderate in length; snout obtuse; cleft of the mouth terminal or directed upwards; snout short**.

10. *Mormyrus cyprinoides*.

Mormyrus cyprinoides, L. *Mus. Ad. Frid.* p. 109, and *Syst. Nat.* i. p. 522; *Rüpp. Forts. Beschreib. Nil-Fische*, taf. 2. fig. 4; *Cuv. & Val.* xix. p. 265.

— labiatus, *Geoff. Descr. Eg. Poiss.* i. p. 275, pl. 7 fig. 1.

— salahié, *Lacép.* v. p. 621.

— elongatus, *Rüpp. l. c.* p. 2, taf. 2. fig. 1; *Cuv. & Val.* xix. p. 269.

— abbreviatus, *Cuv. & Val.* xix. p. 270.

Mormyrops labiatus, *Marcusen, Mormyr.* p. 137.

— elongatus, *Marcusen, Mormyr.* p. 140.

— abbreviatus, *Marcusen, Mormyr.* p. 142.

D. 26-28. A. 32-35. V. 6. L. lat. 85. Vert. 16-17/29-30.

Snout obtuse, of moderate length, with the lower jaw prominent, and with a very short, skinny flap at the chin. Eye rather small, situated before the middle of the length of the head. Teeth minute, pointed, few in number. Pectoral extending beyond the root of the ventrals. The height of the body is one-fourth or two-sevenths of the total length (without caudal), the length of the head one-fifth or somewhat less than one-fifth.

Nile; West Africa.

a, b, c-d, e-f. Adult, half-grown, and young. Lower Nile.

g. Adult male. Egypt. From Dr. Rüppell's Collection.—One of the typical specimens of *M. elongatus*.

h. Half-grown. Chartoum. From Consul Petherick's Collection.

i, k. Adult and half-grown. West Africa. Purchased of Mr. Dalton.

The proportions of the body, especially its depth, depend in a great measure on the sex of the individual, and on the season, as in

* To this section appears to belong a species from Dongola, which, at present, is known from a bad figure only—*Mormyrus pictus*, Heuglin in *Sitzgsber. Akad. Wiss. Wien*, 1852, ix. taf. 60. fig. 1; *Petrocephalus pictus*, *Marcusen, l. c.* p. 153.

other fishes. The *Mormyri*, besides, accumulate at certain periods such a quantity of fat in the abdominal cavity as well as between the muscles, that their appearance is very much changed—a circumstance by which Rüppell has been induced to establish a nominal species for specimens which either are males, or had lost the fat.

11. *Mormyrus macrolepidotus*.

Mormyrus macrolepidotus, Peters, *Monatsber. Akad. Wiss. Berl.* 1852, p. 275.

D. 23–24. A. 28–32. L. lat. 67.

The form of the snout, the eye, and the dentition as in *M. cyprioides*; the pectoral extends to the middle of the ventral. The height of the body is two-sevenths of the total length (without caudal), the length of the head two-ninths.

Eastern Africa.

- a.* Young. River Rovuma. Presented by Ch. Livingstone, Esq.
b. Young. River Rovuma. Presented by Dr. Kirk.

12. *Mormyrus niger*.

D. 18–20. A. 26–28. L. lat. 52.

Snout obtusely conical, with the mouth terminal, and the upper profile somewhat more curved than the lower; lower jaw without fleshy protuberance, not projecting beyond the upper. Eye small, much shorter than the snout, situated before the middle of the length of the head. Teeth small, deeply notched, few in number. Pectoral longer than the head, extending nearly to the end of the ventral, which is only half as long. The height of the body is two-sevenths of the total length (without caudal), the length of the head one-fifth. Blackish, with indistinct and irregular darkish cross bands; head, back, and fins black.

Gambia.

- a.* Male, 5 inches long. Purchased of Mr. Dalton.
b-c, d. Five inches long. West Africa.

13. *Mormyrus brachyistius*.

Marcusenius brachyistius, Gill, *Proc. Acad. Nat. Sc. Philad.* 1862, p. 139.

D. 17. A. 27. L. lat. 50

Head decurved; snout convex; teeth emarginate, few in number. Pectorals shorter than the head, and scarcely extending to the root of the ventrals. The height of the body is nearly equal to the length of the head, and one-fifth of the total (without caudal). (*Gill.*)

West Africa.

IV. *Snout short, obtuse, with the cleft of the mouth at its lower side.*

14. *Mormyrus bane.*

Rifaud, Voy. Ég. pl. 189. no. 40 (bad), pl. 217. fig. 2. (bad).

Mormyrus cyprinoides, Geoff. Descr. Ég. Poiss. i. p. 277, pl. 8. figs. 3-4 (not *L.*).

— *bane, Lacép.* v. p. 621; *Cuv. & Val.* xix. p. 276.

— *dequesne, Cuv. & Val.* xix. p. 281.

? *Mormyrus joannisii, Cuv. & Val.* xix. p. 282.

Mormyrus ehrenbergii, Cuv. & Val. xix. p. 283.

Petrocephalus bane, Marcusen, Mormyr. p. 146.

? *Petrocephalus de joannis, Marcusen, Mormyr.* p. 149.

D. 30-32. A. 33-36. V. 6. L. lat. 42-45. Vert. 14/29.

Snout obtuse, compressed, very short, elevated, obliquely truncated in front, with the cleft of the mouth at its lower side, below the eye, which is of moderate size. Teeth very small, dilated, and notched, forming a complete series round the entire edge of both jaws. Pectoral extending beyond the root of the ventral, which is short, half as long as the pectoral. The height of the body is contained from twice and one-half to three times and one-quarter in the total length (without caudal), the length of the head four times, or four times and a third.

Nile.

a, b, c-e, f-h. Adult, half-grown, and young. Lower Nile.

i-l, m-p. Adult and half-grown. Chartoum. From Consul Petherick's Collection.

q. Adult, female: skeleton. Lower Nile. From Consul Petherick's Collection.

r. Adult, skeleton. Lower Nile. From Dr. Rüppell's Collection.

15. *Mormyrus discorhynchus.*

? *Mormyrus discorhynchus, Peters, Monatsber. Akad. Wiss. Berl.* 1852, p. 275.

D. 30-36. A. 24-27. L. lat. 70. Vert. 16/25.

Snout obtuse, rounded, compressed, as long as the eye, which is of moderate size; cleft of the mouth at the lower side of the snout, before the vertical from the front margin of the orbit. Teeth very small, dilated and notched, few in number. The pectoral extends somewhat beyond the middle of the ventral, which is more than half as long as the pectoral. The height of the body is one-third of the total length (without caudal), the length of the head one-fifth. Back and upper parts of the side irregularly marbled with brown.

Nile (? Mossambique).

a-c. Adult and half-grown. Chartoum. From Consul Petherick's Collection.

d. Adult male: skeleton. Chartoum. From Consul Petherick's Collection.

The short diagnosis given by Peters agrees with our specimens

from the Nile; still it is possible that the Mossambique fish may prove to be different when their characters are better known.

The ribs of this species show the peculiarity of being perforated by many holes along the middle of their upper half.

16. *Mormyrus bovei*.

Mormyrus bovei, *Cuv. & Val.* xix. p. 283.

D. 20-23. A. 31-33.

Form of the snout as in *M. bane*, the cleft of the mouth being below the middle of the orbit. The height of the body is nearly one-fourth of the total length (the caudal fin included). (*Val.*)

Nile.

17. *Mormyrus isidori*.

Mormyrus isidori, *Cuv. & Val.* xix. p. 285.

Petrocephalus isidori, *Marcusen, Mormyr.* p. 150, pl. 5. fig. 20 (not good).

D. 19-20. A. 24. L. lat. 55. Vert. 39.

Snout obtuse, rounded, compressed, short, but longer than the eye, which is rather small; cleft of the mouth at the lower side of the snout, below the front margin of the orbit. Teeth small, dilated, and notched, forming an arched series round the margin of both jaws. Pectoral extending to, or somewhat beyond, the middle of the ventral, which is not quite half as long as the pectoral. The height of the body is contained from twice and three-fourths to three times and one-third in the total length (without caudal), the length of the head four times and one-half.

Nile.

a-b. From 3 to 4 inches long. From Dr. E. Rüppell's Collection.

18. *Mormyrus adspersus*.

D. 19-21. A. 27. V. 6. L. lat. 50.

Snout compressed, short, elevated, subtruncated in front, the cleft of the mouth being at its lower side but before the vertical from the front margin of the eye. Eye small, as long as the snout. Teeth small, dilated, and notched, forming a complete series round the margin of both jaws. The origin of the dorsal fin is a little nearer to the root of the caudal than to the occiput. The pectoral extends beyond the extremity of the ventral, which is very small, only half as long as the head. The height of the body is contained thrice in the total length (without caudal), the length of the head four times and one-third. Light brownish, dotted all over with brown, the dots being largest and most numerous on the head, thorax, and on the vertical fins.

West Africa.

a. Three inches long. Purchased of Mr. Damon.

b. Three inches long. Purchased of Mr. Stevens.

19. *Mormyrus catostoma*.

D. 21. A. 26. L. lat. 41.

The form of the snout is nearly the same as in *M. isidori*, the cleft of the mouth being at the lower side of the snout, behind the front margin of the orbit. Teeth small, dilated and notched, forming a complete series round the margin of both jaws. The origin of the dorsal fin is a little nearer to the root of the caudal than to the occiput. The pectoral extends somewhat beyond the middle of the ventral, which is rather more than half as long as the pectoral. The height of the body is contained thrice in the total length, the length of the head thrice and two-thirds. Uniform silvery, back blackish.

Rovuma River.

a-c. Two inches long. Presented by Ch. Livingstone, Esq.

d-e. Two inches long. Presented by Dr. Kirk.

2. **HYPEROPISUS.**

Hyperopisus, Gill, *Proc. Acad. Nat. Sc. Philad.* 1862, p. 443.

Dorsal fin much shorter than anal. A large broad patch of obtuse, molar-like teeth on the roof and bottom of the mouth.

1. *Hyperopisus dorsalis*.

Kashoué, *Sonnini, Voy. Ég.* pl. 21. fig. 3.

Mormyrus bebe, *Lacép.* v. pp. 619, 622.

— *dorsalis*, *Geoff. Descr. Ég. Poiss.* i. p. 276, pl. 8. figs. 1-2; *Cuv. & Val.* xix. p. 271.

Phagrus dorsalis, *Marcusen, Mormyr.* p. 142.

D. 13-16. A. 56-62. V. 6. L. lat. ca. 110. Vert. 22/37
(55, *Marcusen*).

Snout obtuse, rather short, rounded, with the jaws equal anteriorly, and without labial appendage. Eye small, situated far before the middle of the length of the head. Teeth not very small, fixed, dilated, notched. Pectoral extending beyond the root of the ventral, which is short but more than half as long as the pectoral. The height of the body is contained from three times and three-fourths to five times in the total length (without caudal), the length of the head five times and one-half. The distance of the origin of the dorsal fin from the root of the caudal is one-half of its distance from the gill-opening.

Nile.

a-b. Adult and young. Chartoum. From Consul Petherick's Collection.

c, d-f. Adult and half-grown. Lower Nile.

g. Adult male: skeleton. Chartoum. From Consul Petherick's Collection.

2. *Hyperopisus occidentalis*.

Very similar to *H. dorsalis*.

D. 12. A. 65. V. 6. L. lat. ca. 110.

Snout obtuse, rather short, rounded, with the jaws equal anteriorly, and without labial appendage. Eye small, situated far before the middle of the length of the head. Teeth as in *H. dorsalis*, but rather smaller. Pectoral fin extending beyond the root of the ventral, which is short and half as long as the pectoral. The height of the body is contained four times and one-half in the total length (without caudal), the length of the head five times and one-half. *The distance of the origin of the dorsal fin from the root of the caudal is considerably less than one-half of its distance from the gill-opening.*

West Africa.

a. Sixteen inches long. Purchased of Mr. Dalton.

3. MORMYROPS.

Mormyrus, sp., L.

Mormyrops, sp., Müller, *Berl. Abhandl.* 1844, p. 190.

Isichthys et Marcusenius, Gill, *Proc. Acad. Nat. Sc. Philad.* 1862, p. 443.

Head elongate, about twice as long as high. No teeth on the palate or on the tongue.

1. *Mormyrops anguilloides*.

Herse, *Sonnini, Voy. Ég.* pl. 22. fig. 1; *Rifaud, Voy. Eg.* pl. 189. no. 40 (bad).

Mormyrus anguilloides, L. *Mus. Ad. Frid.* p. 110, and *Syst. Nat.* i. p. 522 (not synonym.); *Geoffr. Descr. Ég. Poiss.* i. p. 274, pl. 7. fig. 2; *Cuv. & Val.* xix. p. 258; *Marcusen, Mormyr.* p. 132.

— dendera, *Lacép.* v. p. 621.

D. 26–28. A. 39–42. V. 6. L. lat. 95. Vert. $\frac{23}{36}$.

Head nearly twice as long as high; snout subtetrahedral, of moderate length, rounded in front, with the upper jaw a little longer than the lower. Eye very small, situated in the anterior third of the length of the head. Teeth not very small, fixed, forming a curved series in both jaws, slightly notched at the apex. Dorsal fin more than half as long as the anal. The height of the body is contained from five times and a half to six times and a half in the total length (without caudal), the length of the head four times.

Nile.

a. Half-grown. Egypt. From Dr. Rüppell's Collection.

b. Half-grown. Nile, below the Cataracts. From Mr. J. Petherick's Collection.

2. *Mormyrops deliciosus*.

Oxyrhynchus deliciosus, *Leach in Tuckey, Narrat. Exped. River Zaire*, p. 410.

Mormyrus tuckeyi, *Cuv. & Val.* xix. p. 263.

D. 25-26. A. 42-46. L. lat. 90.

Head twice as long as high; snout subtetrahedral, of moderate length, rounded in front, with the upper jaw somewhat longer than the lower. Eye very small, situated in the anterior third of the length of the head. Teeth not very small, fixed, forming a series round the entire edge of the upper and lower jaw; they are pointed, becoming more truncated at the apex with age, without being notched. Dorsal fin more than half as long as the anal. The height of the body is contained five times and a half in the total length (without caudal), the length of the head four times.

West Africa.

- a. Adult: stuffed. Zaire expedition.—Type of the species.
- b. Adult: skin in spirits. West Africa. Purchased of Mr. Dalton.
- c. Young. West Africa. Purchased of Mr. Stevens.
- d. Forty-five inches long: stuffed. West Africa. Purchased of Mr. Dalton.

3. *Mormyrops zambanenje*.

Mormyrus zambanenje, *Peters, Monatsber. Akad. Wiss. Berl.* 1852, p. 275.

D. 24-26. A. 42-47. Vert. 62.

Similar to *M. anguilloides*. Dorsal fin only half as long as the anal. Mandible and intermaxillary with from thirty-two to thirty-six teeth. (*Pet.*)

Mossambique.

4. *Mormyrops henryi*.

Isichthys henryi, *Gill in Proc. Acad. Nat. Sc. Philad.* 1862, p. 444.

D. 44. A. 42. L. lat. 135.

Head twice as long as high, snout scarcely projecting, convex; eye small. Teeth dilated, with the crown notched. The height of the body is about one-tenth of the total length (without caudal), the length of the head one-seventh. (*Gill.*)

Habitat — ?

The true affinities of this species appear to be with *M. anguilloides*; however, no mention has been made whether or not it has teeth on the roof of the mouth.

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214 MORMYKID^.

Fam. 10. MORMYRID^.

Monnyri, Miill. Abhandl. Akad. Wiss. Berl. 1844, p, 189.

Body and tail scaly, head scaleless; barbels none.

The margin of the upper jaw is formed in the middle by the intermaxillaries which coalesce into a single bone, and laterally by the maxillaries. Interoperculum sometimes rudimentary. On each side of the single parietal bone a cavity leading into the interior of the skull, and covered with a thin bony lamella.

All the fins well developed ; no adipose fin. A series of pores along the base of the dorsal and anal fins.

Pseudobranchiae none ; gill-opening reduced to a short slit. Air-bladder simple. Two caeca pylorica behind the stomach.

Rivers of tropical Africa.

On the anatomy of the fishes of this family, and especially on the gelatinous band-like bodies situated on each side of the tail, which have been erroneously believed to be electric organs, see Eippell,

* Fortsetzung der Beschreibung neuer Fische im Nil entdeckt,' p. 9 ;

Gemminger, ' Electrisches Organ von Morviyus ; ' Erdl, Abhandl. Bayr. Akad. Wiss. p. 209 ; Kolliker, Bericht von der zootom. Anstalt zu Wiirzburg, 1849 ; Valenciennes in the ' Histoire Naturelle des Poissons,' II. cc. ; Hyrtl, Denkschr. Akad. Wiss. Wien, 1856, xii. p. 1 ; Marcusen, Mem. Acad. Sc. St. Petrsb. 1864, t. vii.

The species of this family may be referred to the following genera : —

A narrow band of pointed teeth along the middle of the palate and of the tongue.

1. MORMYUUS, p. 214.

A broad patch of obtuse, molar-like teeth on the roof and bottom of the mouth.

2. Hyperopisus, p. 222.

No teeth on the palate or on the tongue 3. Mormyrops, p. 223.

1. MOEMYRUS*.

Mormyrus, sp., L. Syst. Nat. i. p. 522 ; Geoffr. Descr. Eg. Zool. i. p. 265.

Mormyrus and Mormyrops, sp., Miill. Berl. Abhandl. 1844, p. 190.

Murrayrodes, Gnathonemus, Petrocephalus, Gill. Proc. Acad. Nat. Sc. Philad. 1862, p. 443.

A narrow band of pointed teeth along the middle of the palate and of the tongue.

* 1. Mormyrus jubilini, C. & V. xix. p. 252.- "A. 19.— Sc" -gal.

2. nacara, C. & V. xix. p. 257.— Nile.

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1. MORMYKTJS, 215

The species may be referred to the following divisions : —

I. Dorsal fin occupying the greater portion of the length of the back; anal

short, p. 215.

II. Dorsal and anal fins subequal and moderate in length ; snout long and

decurved, p. 217,

III. Dorsal and anal fins subequal and moderate in length ; cleft of the

mouth terminal or directed upwards ; snout short, p. 218.

IV. Snout short, obtuse, with the cleft of the mouth at its lower side,

p. 220.

I. Dorsal fin occupying the greater portion of the length of the back ;

anal short.

' 1. *Mormyrus caschive*.

Mormyrus caschive, Hassclq. It. Palcest. p. 398 ; Cuv. 8f Val. xix. p. 227 ;

Marcusen, Mormyr. p. 120*.

longipiuuis, JRiipp. Fortsetz. Beschreib. neuer Fisch. Nil, p. 7,

pi. 1. fig. 2.

D. 81-87. A. 18-20. V. 6. Vert. g?.

Scales very small. Snout conical, much produced, slightly bent downwards, the pupil of the eye being exactly in the middle of the length of the head. Lower lip somewhat projecting beyond the upper. Teeth very small, slightly dilated, the crown, with a shallow notch. The height of the body is nearly equal to the length of the head, which is two-ninths of the total (without caudal).

Nile.

a-h. Fine specimens, 23 inches long. Chartoum. From Consul

Petherick's Collection.

c-f. Young. Lower Nile. From Dr. Eiippell's Collection.

Mormyrus rume, Cuv. & Val. xix. p. 247, pi. 569, is scarcely distinct from *M. caschive* ; it is said to have the scales somewhat larger, about 112 along the lateral line. — Senegal.

2. *Mormyrus mucupe*.

Mormyrus mucupe, Peters, *Motiatscher. Acad. Wiss. JBerl.* 1852, p. 275.

D. 71. A. 18.

Snout slender, decurved, with the lower jaw prominent. (Peters.)

Mossambique.

3. *Mormyrus oxyrhynchus*.

Mormyrus kannume, Forsk, *Descript. Anim.* p. 74 *Lacip. v.* p. 619 ;

Marcusen, *Mormyr.* p. 114.

* To show the variability of the fin-rays within the limits of a species, Dr.

Marcusen has selected the instance of *Chromis niloticus* and *Tilapia*. But it is now perfectly well known that Africa is inhabited by a considerable number of *Chromids* ; and nobody who has studied these fish, will doubt that *Tilapia* is a very distinct species from *Chr. niloticus*.

[Begin Page: Page 216]

216 *MORMYEID*^.

Mormyrus oxyrhynchus,. Geoffr. *Descr. Eg. Poiss.* i. p. 270, pi. 6. fig. 1 ;

Jonnis, *Gu^r. Mag. Zool.* pi. 13 (bad) ; Cuv. *J'al.* xix. p. 24^.

bachiqua, Cuv. *Val.* xix. p. 248.

D. 58-66. A. 18-20. V. 6. L. lat. ca 130. Vert. ^.

20

Snout conical, much produced, slightly bent downwards, the pupil of the eye being scarcely nearer to the end of opercle than to the extremity of the snout. Lower lip somewhat projecting beyond the upper. Teeth not very small, slightly dilated, the crown with a shallow notch. The height of the body is nearly equal to the length of the head, which is two-ninths or a little more than two-ninths of the total (without caudal).

Nile.

a, b-d, e, f. Adult and half-grown. Lower Nile. •

g. Adult : stuffed. Egypt. Purchased of Dr. Heckel.

h-n. Half-grown and young. Chartoum. From Consul Petherick's

Collection.

o. Adult male: skeleton. Lower Nile. From Consul Petherick's

Collection.

p. Adult: skeleton. Lower Nile. From Dr. Riippell's Collection.

4. *Monn3nnis longirostris*.

Mormyrus longirostris, Peters, Monatsber. Akad. Wiss. Berl 1852,
p. 275.

D. 74. A. 18.

Head very long, with the snout slender and decurved ; upper jaw
prominent. {Pet.}

Mossambique.

5. Mormyrus geoffroyi.

? Pococke, Reise, i. p. 316, taf. 70 ; Engl. edit. p. 202 (according to

Schneider).

? Centricus niloticus, Bl. Schn. p. 113, tab. 30. fig. 1.

? Mormyrus geoffroyi, Cuv. ^- Val. xix. p. 240.

D. 74-77. A. 17-19. V. 6.

Scales very small. Snout conical, much produced, with its longi-
tudinal axis nearly in the same line as the axis of the body ; eye
almost in the middle of the length of the head. Lower lip somewhat
projecting beyond the upper. Teeth very small, slightly dilated, the
crown with a shallow notch. The height of the body is nearly equal
to the length of the head, which is two-ninths of the total (without
caudal).

Nile.

a, b. Half-grown. Lower NUe.

It may appear doubtful whether these specimens are correctly referred to *M. geoffroyi*, as Valenciennes states eighty-four dorsal rays ; however, as they agree in all other respects with Valenciennes' description of that species, I would not separate them under a distinct name.

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1. MORMYRUS. 217

6. *Mormyrus hasselquistii*.

Mormyrus lierse, Lacep. v. pp. 621-623 (not Sonn.).

caschive Geoffr. Descr. Eg. Poiss. i. p. 273, pi. 6. fig. 2.

hasselquistii, Cuv. 8f Vol. xix. p. 253 ; Marcusen, *Mormyr.* p. 130.

D. 70. A. 18. L. lat. 115. 'Vert. 21/29.

Snout rather thick and obtuse, with the upper jaw somewhat projecting beyond the lower. Eye situated in the anterior third of the length of the head, which is one-fourth of the total (without caudal).

Teeth very small, with their crown slightly emarginate.

Nile ; West Africa.

a. Half -grown. West Africa. Purchased of Mr. Dalton.

7. *Mormyrus macrophthalmus*.

D. 64. A. 21. L. lat. 88.

Snout much shorter Than in *M. caschive* and in the other species allied to it ; it is compressed, and abruptly bent downwards, the upper profile of the head being strongly curved ; it is not much longer than the eye, which is large, two-sevenths of the length of the head. Jaws equal anteriorly, armed with small teeth, which are dilated and truncated at their summits. The length of the dorsal is not quite one-half of the total ; anal much higher than dorsal, its distance from the caudal being one-fourth of the total length. Caudal forked to the base, with the lobes slender and pointed. The pectoral extends to, or nearly to, the root of the ventral, the length of which is two-thirds of that of the pectoral. The height of the body is one-fifth of the total length (without caudal), the length of the head one-sixth. Coloration uniform, sides shining silvery.

West Africa.

a. Male, 13 inches long. Purchased of Mr. Dalton.

II. Dorsal and anal fins subequal and moderate in length ; snout long, decurved.

8. *Mormyrus tamandua*,

Mormyrus tamandua, Günth. Proc. Zool. Soc. 1864, January, pi. 2.

fig. 1.

D. 28. A. 31. L. lat. 80.

Snout much prolonged, tubiform, tapering and curved downwards ; the lower jaw terminating in a short skinny flap as long as the eye. The distance between the eye and the gill-opening is half that between eye and the end of the mandibular flap ; eye rather small. Teeth very small, conical, few in number. Pectoral nearly twice as long as the ventral, extending beyond its base. The height of the body is two-ninths of the total length (without caudal), the length of the head one-fourth.

West Africa.

a. Type of the species. Purchased of Mr. Dalton.

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mi MORMRIDJE.

9. *Mormyrus petersii*.

Mormyrus petersii, Günth. Wien. Arch. 1862, p. 64, and Proc. Zool.

Soc. 1864, p. 22, pi. 2. fig. 2.

D. 27. A. 34. L. lat. 66.

Snout subcorneal, somewhat decurved, with the mandible prolonged into a long, conical, fleshy appendage, which is nearly half as long as the head. Eye small, situated before the middle of the length of the head. Teeth very small, dilated, attached at the apex, few in number. Pectoral extending beyond the middle of the length of the ventrals. The height of the body is rather more than one-fourth of the total length (without caudal), the length of the head two-ninths. Dark brown, with two lighter cross bands between dorsal and anal fins.

Old Calabar.

a. Type of the species. Presented by Dr. A. Günther.

III. Dorsal and anal fins subequal and moderate in length; snout obtuse; cleft of the mouth terminal or directed upwards; snout short*.

10. *Mormyrus cyprinoides*.

Mormyrus cyprinoides, L. Mus. Ad. Frid. p. 109, and Syst. Nat. i.

p. 522; Linné, Forts. Beschreib. Nil-Fische, taf. 2. fig. 4; Cuv. Sf

Vol. xix. p. 265.

labiatus, Geoff. Descr. Ég. Puiss. i. p. 275, pi. 7 fig. 1.

salahi[^], Lacep. v. p. 621.

elongatus, Riipp. I. c. p. 2, taf. 2. fig. 1 ; Cuv. [^] Val. xix. p. 269.

abbreviatus, Cuv. [^] Val. xix. p. 270.

MormjTops labiatus, Marcusen, Mormyr. p. 137.

elongatus, Marcusen, Mormyr. p. 140.

abbreviatus, Marcusen, Mormyr. p. 142.

D. 26-28. A. 32-35. V. 6. L. lat. 85. Vert. 16-17/29-30.

Snout obtuse, of moderate length, with the lower jaw prominent, and with a very short, skinny flap at the chin. Eye rather small, situated before the middle of the length of the head. Teeth minutd, pointed, few in number. Pectoral extending beyond the root of the ventrals. The height of the body is one-fourth or two-sevenths of the total length (without caudal), the length of the head one-fifth or somewhat less than one-fifth.

Nile ; "West Africa,

a, h, c-d, e-f. Adult, half-grown, and young. Lower NUe.

g. Adult male. Egypt. From Dr. EiiippeU's Collection. — One of

the typical specimens of *M. elongatus*.

h. Half-grown. Chartoum. From Consul Petherick's Collection,

i, Tc. Adult and half-grown. West Africa. Purchased of Mr. Dalton.

The proportions of the body, especially its depth, depend in a great measure on the sex of the individual, and on the season, as in

* To this section appears to belong a species from Dongola, which, at present, is known from a bad figure only — *Mormyrus pietv.ii*, Heuglin in Sitzgsber. Akad. Wiss. Wien, 1852, ix. taf. 60. fig 1 ; *Petrocephalus pictus*, Maroueen, 1. c. p. 153.

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1. MOEMYRUS. 219

other fishes. The Monnyri, besides, accumulate at certain periods such a quantity of fat in the abdominal cavity as well as between the muscles, that their appearance is very much changed — a circumstance by which Riippell has been induced to establish a nominal species for specimens which either are males, or had lost the fat.

11. *Mormyrus macrolepidotus*.

Mormyrus macrolepidotus, Peters, Monatsber, Akad. Wiss. Berl. 1852, p. 275.

D. 23-24, A. 28-32. L. lat. 67.

The form of the snout, the eye, and the dentition as in *M. cyprioides* ; the pectoral extends to the middle of the ventral. The

height of the body is two-sevenths of the total length (without caudal), the length of the head two-ninths.

Eastern Africa.

a. Young. Kiver Rovuma. Presented by Ch. Livingstone, Esq.

b. Youiag. River Rovuma. Presented by Dr. Kirk.

12. *Mormyrus niger*.

D. 18-20. A. 26-28. L. lat. 52.

Snout obtusely conical, with the mouth terminal, and the upper profile somewhat more curved than the lower ; lower jaw without fleshy protuberance, not projecting beyond the upper. Eye small, much shorter than the snout, situated before the middle of the length of the head. Teeth small, deeply notched, few in number.

Pectoral longer than the head, extending nearly to the end of the ventral, which is only half as long. The height of the body is two-sevenths of the total length (without caudal), the length of the head one-fifth. Blackish, with indistinct and irregular darkish cross bands ; head, back, and fins black.

Gambia.

a. Male, 5 inches long. Purchased of Mr. Dalton.

b-c, d. Five inches long. West Africa.

13. *Mormyrus brachyistius*.

Marcusenius brachyistius, Gill, Proc. Acad. Nat. Sc. Philad. 1862,
p. 139.

D. 17. A. 27. L. lat. 50

Head decurved ; snout convex ; teeth emarginate, few in number.

Pectorals shorter than the head, and scarcely extending to the root
of the ventrals. The height of the body is nearly equal to the length
of the head, and one-fifth of the total (without caudal). (Gill.)

West Africa.

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220 MORMYRID[^].

IV. Snout short, obtuse, with the cleft of the mouth at its lower side.

14. Mormyrus bane.

Rifaud, Voy. Eg. pi. 189. no. 40 (bad), pi. 217. fig. 2. (bad).

Mormyrus cyprinoides, Geoff. Descr. Hg. Poiss. i. p. 277, pi. 8. figs.
3-4 (not L).

bane, Lucep. v. p. 621 ; Ciiv. [^] Val. xix. p. 276.

dequesne, Ciiv. 8f Val. xix. p. 281.

? Mormyrus joannisii, Cuv. Sf Val. xix. p. 282.

Mormyrus enrenbergii, Cuv. et Val. xix. p. 283.

Petrocephalus bane, Marmor, Moench. p. 146.

? *Petrocephalus de joannis*, Marcusen, Mormyr. p. 149.

D. 30-32. A. 33-36. V. 6. L. lat. 42-45. Vert. 14/29.

Snout obtuse, compressed, very short, elevated, obliquely truncated in front, with the cleft of the mouth at its lower side, below the eye, which is of moderate size. Teeth very small, dilated, and notched, forming a complete series round the entire edge of both jaws. Pectoral extending beyond the root of the ventral, which is short, half as long as the pectoral. The height of the body is contained from twice and one-half to three times and one-quarter in the total length (without caudal), the length of the head four times, or four times and a third.

Nile.

a, h, c-e, f-h. Adult, half-grown, and young. Lower Nile.

t-Z, w-jj. Adult and half-grown. Chartoum. From Consul Petherick's

Collection.

q. Adult, female : skeleton. Lower Nile, from Consul Petherick's

Collection.

r. Adult, skeleton. Lower Nile. From Dr. Eippell's Collection.

15. *Mormyrus discorhynchus*.

?]Monupu3 discorhynchus, Peters, Monatsber. Akad. Wiss. Berl. 1852,
p. 275.

D. 30-36. A. 24-27. L. lat. 70. Vert. 16/25.

Snout obtuse, rounded, compressed, as long as the eye, which is of moderate size ; cleft of the mouth at the lower side of the snout, before the vertical from the front margin of the orbit. Teeth very small, dilated and notched, few in number. The pectoral extends somewhat beyond the middle of the ventral, which is more than half as long as the pectoral. The height of the body is one-third of the total length (without caudal), the length of the head one-fifth. Back and upper parts of the side irregularly marbled with brown.

Nile (? Mossambique).

a-c. Adult and half-grown. Chartoum. From Consul Petherick's

Collection.

d. Adult male : skeleton. Chartoum. From Consul Petherick's

Collection.

The short diagnosis giveu by Pctei's agrees with our specimens

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1. MORMYRUS. 221

from the Nile ; still it is possible that the Mossambique fish may prove to be different wheii their characters are better known.

The ribs of this species show the peculiarity of being perforated by many holes along the middle of their upper half.

16. *Mormyrus bovei*.

Mormyrus bovei^ Cuv. Sf Val. xix. p. 283.

D. 20-23. A. 31-33.

Form of the snout as in *M. bane*, the cleft of the mouth being below the middle of the orbit. The height of the body is nearly one-fourth of the total length (the caudal fin included). (Val.)

NUe.

17. *Mormyrus isidori*.

Mormyrus isidori, Ctiv. ^ Val. xix. p. 285.

Petrocephalus isidori, Marciisen, *Mormyr.* p. 150, pi. 5. fig. 20 (not good).

D. 19-20. A. 24. L. lat. 55. Vert. 39.

Snout obtuse, rounded, compressed, short, but longer than the eye,

which is rather small ; cleft of the mouth at the lower side of the snout, below the front margin of the orbit. Teeth small, dilated, and notched, forming an arched series round the margin of both jaws. Pectoral extending to, or somewhat beyond, the middle of the ventral, which is not quite half as long as the pectoral. The height of the body is contained from twice and three-fourths to three times and one-third in the total length (without caudal), the length of the head four times and one-half.

Nile.

a-h. From 3 to 4 inches long. From Dr. E. Riippell's Collection.

18. *Mormyrus adspersus*.

D. 19-21. A. 27. V. 6. L. lat. 50.

Snout compressed, short, elevated, subtruncated in front, the cleft of the mouth being at its lower side but before the vertical from the front margin of the eye. Eye small, as long as the snout. Teeth small, dilated, and notched, forming a complete series round the margin of both jaws. The origin of the dorsal fin is a little nearer to the root of the caudal than to the occiput. The pectoral extends beyond the extremity of the ventral, which is very small, only half as long as the head. The height of the body is contained thrice in the total length (without caudal), the length of the head four times and one-third. Light brownish, dotted all over with brown, the dots being largest and most numerous On the head, thorax, and on the vertical fins.

West Africa.

a. Three inches long. Purchased of Mr. Damon.

h. Three inches long. Purchased of Mr. Stevens.

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222 MORMYRID[^].

19. *Monnyrus catostoma*.

D. 21. A. 26. L. lat. 41.

The form of the snout is nearly the same as in *M. isidori*, the cleft of the mouth being at the lower side of the snout, behind the front margin of the orbit. Teeth small, dilated and notched, forming a complete series round the margin of both jaws. The origin of the dorsal fin is a little nearer to the root of the caudal than to the occiput. The pectoral extends somewhat beyond the middle of the ventral, which is rather more than half as long as the pectoral. The height of the body is contained thrice in the total length, the length of the head thrice and two-thirds. Uniform silvery, back blackish.

Rovuma River.

a-c. Two inches long. Presented by Ch. Livingstone, Esq.

d-e. Two inches long. Presented by Dr. Kirk.

2. HYPEROPISUS.

Hyperopisus, GUI, Proc. Acad. Nat. Sc. Philacl. 1862, p. 443.

Dorsal fin much shorter than anal. A large broad patch of obtuse, molar-like teeth on the roof and bottom of the mouth.

1. Hjrperopisus dorsalis.

Kashoue, Sonnini, Voy. Eg. pi. 21. fig. 3.

Monnyrus bebe, Lacep. v. pp. 019, 622.

dorsalis, Geof. Descr. Eg. Poiss. i. p. 276, pi. 8. figS. 1-2 ; Cuv.

Sf Val; xix. p. 271.

Phagi-us dorsalis, Marcusen, Morrmjr. p. 142.

D. 13-16. A. 56-62. V.6. L.lat. ca. 110. Vert. 22/37

(55, Marcusen).

Snout obtuse, rather short, rounded, with the jaws equal anteriorly, and without labial appendage. Eye small, situated far before the middle of the length of the head. Teeth not very small, fixed, dilated, notched. Pectoral extending beyond the root of the ventral, which is short but more than half as long as the pectoral. The height of the body is contained from three times and three -fourths to five times in the total length (without caudal), the length of the head five times and one-half. The distance of the origin of the dorsal fin from the root of the caudal is one-half of its distance from the gill-opening.

Nile.

a-h. Adult and young. Chartoum. From Consul Petherick's Collection,

c, d-f. Adult and half-grown. Lower Nile,

g. Adult male: skeleton. Chartoum. From Consul Petherick's Collection.

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3. MOKMTROPS. 223

2. *Hyperopisus occidentalis*.

Very similar to *H. dorsalis*.

D. 12. A. 65. y. 6. L. lat. ca. 110.

Snout obtuse, rather short, rounded, with the jaws equal anteriorly, and without labial appendage. Eye small, situated far before the middle of the length of the head. Teeth as in *H. dorsalis*, but rather smaller. Pectoral fin extending beyond the root of the ventral, which is short and half as long as the pectoral. The height of the body is contained four times and one-half in the total length (without caudal), the length of the head five times and one-half. The distance of the origin of the dorsal fin from the root of the caudal is considerably less than one-half of its distance from the gill-opening.

West Africa.

a. Sixteen inches long. Purchased of Mr. Dalton.

3. MORMYROPS.

Mormyi'us, sp., L.

Mormyrops, sp., Miiller, Berl. Ahhandl. 1844, p. 190.

Isichthys et Marcusenius, Gill, Proc. Acad, Nat. Sc. Philad. 1862,
p. 443.

Head elongate, about twice as long as high. No teeth on the
palate or on the tongue.

1. Mormyrops anguilloides.

Herse, Sonnini, Voy. Eg. pi. 22. fig. 1 ; Rifavd, Voy. Eg. pi. 189.

no. 40 (bad).

Mormyrus anguilloides, L. Mus. Ad. Frid. p. 110, and Syst. Nat. i.

p. 522 (not synon.) ; Geoffr. Descr. Eg. Poiss. i. p. 274, pi. 7. fig. 2 ;

Cuv. 8f Val. xix. p. 258 ; Marcusen, Mormyr. p. 132.

dendera, Lacep. v. p. 621.

D. 26-28. A. 39-42. V. 6. L. lat. 95. Vert. ||.

36

Head nearly twice as long as high ; snout subtetrahedral, of moderate length, rounded in front, with the upper jaw a little longer than the lower. Eye very small, situated in the anterior third of the length of the head. Teeth not very small, fixed, forming a curved series in both jaws, slightly notched at the apex. Dorsal fin more than half as long as the anal. The height of the body is contained from five times and a half to six times and a half in the total length (without caudal), the length of the head four times

Nile.

a. Half-grown. Egj[^]t. From Dr. Riippell's Collection.

h. Half-grown. Nile, below the Cataracts. From Mr. J. Petherick's Collection.

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224: MORMYRID[^].

2. Mormyrops deliciosus.

Oxyrhynchus deliciosus, Leach in Tuckey, Narrat. Exped. River

Zaire, p. 410.

Mormyrus tuckeyi, Cuv. 8f Val. xix. p. 263.

D. 25-26. A. 42-46. L. lat. 90.

Head twice as long as high ; snout subtetrahedral, of moderate length, rounded in front, with the upper jaw somewhat longer than the lower. Eye very small, situated in the anterior third of the length of the head. Teeth not very small, fixed, forming a series round the entire edge of the upper and lower jaw ; they are pointed, becoming more truncated at the apex with age, without being notched. Dorsal fin more than half as long as the anal. The height of the body is contained five times and a half in the total length (without caudal), the length of the head four times.

"West Africa.

a. Adult : stuffed. Zaire expedition. — Type of the species.

h. Adult : skin in spirits. West Africa. Purchased of Mr. Dalton.

c. Young. "West Africa. Purchased of Mr. Stevens.

d. Forty-five inches long : stuffed. West Africa. Purchased of

Mr. Dalton.

3. *Mormyrops zambanenje*.

MonijTus zambanenje, Peters, Monatsber. Akarl. Wiss. Berl. 1852,
p. 275.

D. 24-26. A. 42-47. Vert. 62.

Similar to *M. anguilloides*. Dorsal fin only half as long as the
anal. Mandible and intermaxillary with from tliirty-two to thirty-
six teeth. {Pet.)

Mossambique.

4. *Mormyrops henr3ri*.

Isichthys henryi. Gill in Proc. Acad. Nat. Sc. Philad. 1862, p. 444.

D. 44. A. 42. L. lat. 135.

Head twice as long as liigh, snout scarcely projecting, convex ;
eye small. Teeth dilated, with the crown notched. The height of
the body is about one-tenth of the total length (without caudal), the
length of the head one-seventh. (Gill.)

Habitat ?

The true affinities of this species appear to be with *M. anguilloides* ;
however, no mention has been made whether or not it has teeth on
the roof of the mouth.