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QUARTERLY PROGRAM PERFORMANCE REPORT FOR THE PERIOD ENDING JUNE 30, 1992

BY

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The report includes the following attachments:

Table 1 - Station No. and Location of Sampling Sites Surveyed (4 pages)

Table 2 - Latin and Local Names of Fish Species which Potentially Occur in the Kavango and Caprivi Provinces (Current Literature Synthesis) (3 pages)

Table 3 - Preliminary Key to the Fishes of the Kavango - Caprivi Provinces (6 pages)

17 July 1992

TO: Dennis Ignasias
FROM: Charles H. Hocutt
SUBJECT: Namibia Fisheries Survey - Progress Report 3

Since the last progress update, we have conducted two field expeditions along the Kavango River, surveying 35 stations (some in duplicate). Table 1 lists the locality data for all sample sites up to this point. We are presently identifying the fish from our two most recent expeditions, and these data will be included in a subsequent progress report.

Expectedly, as the flood waters receded, different habitats were exposed allowing us to capture species we were unable to collect in our first survey. Riffle and sand dwelling "specialists" including amphilid and bagrid catfishes and mastacembelid eels were taken for the first time. Additionally, we documented the occurrence of several cichlid species not taken in our first expedition. Of the 84 total species known to occur in the Kavango waters of Namibia, we have captured and identified 67, approximately 80% of the fauna. We have collected one species (an exotic) not previously known from Namibia waters.

Also enclosed is Table 2, a list of potential fish species to occur in the study area. The purpose of this table is to document the colloquial names of fishes used by the indigenous people of the region (inclusive of Angola, Botswana, Namibia, Zambia and Zimbabwe).

To assist our identification of the fishes, we have prepared a preliminary "key" to the fishes of the Kavango\Caprivi Provinces, Namibia. After examining over 10,000 specimens, we have gained much confidence regarding positive identification. However, as in most developing countries, there is a large need for more rigorous taxonomic work.

Enclosures

Table 1. Station number and location of sampling sites surveyed thus far for the Kavango and Caprivi provinces, Namibia, fishery assessment project.

Station No.	Location Description
1.	Kavango River at Tunguva, cattle trail off main road ca. 158 km (by road) upriver of Rundu; 17° 24' 52" S x 18° 26' 28" E
2.	Kavango River near Mavhenge, quarry road off main road ca. 142 km (by road) upstream of Rundu; 17° 31' 45" S x 18° 31' 47" E
3.	Kavango River near Musu, quarry road ca. 133 km (by road) west of Rundu; 17° 35' 08" S x 18° 34'13" E
4.	Kavango River near Nkunkura, village road ca. 114 km (by road) west of Rundu; 17° 44' 21" S x 18° 44' 40" E
5.	Kavango River near Mugandwizi; 17° 48' 25" S x 18° 52' 00" E
6.	Kavango River at Muveve Shop road; 17° 50' 10" S x 19° 13' 27" E
7.	Kavango River near Bunya; 17° 50' 58" S x 19° 22' 16" E
8.	Kavango River, behind mission camp at Mupini; 17° 51' 39" S x 19° 37' 39" E
9.	Kavango River, quarry road ca. 1 km downstream of confluence with Cuito River; 18° 02' 11" S x 20° 50' 31" E
10.	Kavango River near Kangongo, off main road ca. 1 km east of stone quarry for new Caprivi highway; 17° 56' 15" S x 21° 10' 22" E
11.	Kavango River, falls area at Andara
12.	Kavango River in Mahango Game Reserve; 18° 13' 23" S x 21° 45' 03" E
13.	Kwando River, backwater at Buffalo Lodge Nature Conservation office, Sewanee Nat. Reserve; 17° 47' 26" S x 23° 20' 38" E
14.	Unnamed channel of the Linyati River system, northeast of Mamili Game Reserve; 18° 21' 59" S x 23° 39' 15" E
15.	Unnamed channel of the Linyati River system, adjacent to the Mamili Game Reserve; 18° 24' 00" S x 23° 37' 16" E

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Table 1 (cont.)

16. Unnamed channel of the Linyati River system, at ford just south of Sangwali mission; 18° 17' 05" S x 23° 38' 17" E

17. Kavango River near Rutzara; 18° 01' 13" S x 20° 46' 01" E

18. Kavango River near Shakawe; 18° 00' 04" S x 20° 37' 41" E

19. Kavango River, ca. 0.5 km east of Shinkura (Shankara?) Church through quarry access road; 17° 58' 04" S x 20° 30' 40" E

20. Kavango River, 1 km west of tarmac and Golden Highway junction near Kivatakwata; 17° 53' 41" S x 20° 14' 33" E

21. Kavango River, access road just north of Wakudumo bottle store; 17° 54' 27" S x 20° 01' 27" E

22. Kavango River, just east of Rundu boat launch;

23. Kavango River, 16 road miles east of Rundu; 17° 53' 34" S x 19° 59' 58" E

24. Kavango River, at Ntenta; 17° 54' 08" S x 20° 03' 29" E

25. Kavango River, access road just west of Mbambi store; 17° 57' 43" S x 21° 00' 20" E

26. Kavango River, access road at first pump station west of Mukwe; 18° 00' 42" S x 21° 33' 57" E

27. Kavango River, 1 km east of Cuito River mouth; 18° 02' 11" S x 20° 50' 31" E

28. Kavango River, east of Nyangama; 18° 00' 39" S x 20° 42' 26" E

29. Omataka River, 2 km south of bridge; 17° 58' 43" S x 20° 27' 40" E

30. Kavango River, at Mabushe; 17° 54' 36" S x 20° 25' 15" E

31. Kavango River, just west of Masare, behind water towers

32. Kavango River, .5 km off main road just west of Uvunguvungu; 17° 52' 58" S x 19° 52' 44" E

33. Kavango River, off quarry road access near Mavhenge; 17° 31' 33" S x 18° 32' 10" E

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Table 1 (cont.)

34. Kavango River, off quarry access road, at Mbambi;
17^0 28' 06" S x 18^0 28' 26" E

35. Kavango River, near Mayaka;
17^0 38' 18" S x 18^0 37' 35" E

36. Kavango River, down road from red and white store near Matave; 17^0 47' 19" S x 18^0 50' 30" E

37. Kavango River, at Musese Agricultural Station;
17^0 49' 17" S x 18^0 55' 26" E

38. Kavango River, behind school near Haisisira;
17^0 50' 16" S x 19^0 06' 27" E

39. Kavango River, near Ruruga;
17^0 51' 56" S x 19^0 27' 17" E

40. Kavango River, at Sigone

41. Kavango River, at Matave;
17^0 42' 02" S x 18^0 50' 13" E

42. Kavango River, near Katwitwa/Tunguva;
17^0 24' 52" S x 18^0 26' 28" E

43. Kavango River, near Mbambi;
17^0 28' 07" S x 18^0 28' 28" E

44. Kavango River, near Muse;
17^0 35' 08" S x 18^0 34' 13" E

45. Kavango River, at Cuito River mouth down access road from Portugese store

46. Kavango River, at Mbambi;
17^0 57' 42" S x 21^0 00' 17" E

47. Kavango River, hippo pool in Mahango Game Reserve;
18^0 10' 16" S x 21^0 43' 00" E

48. Kavango River, back channel in Mahango Game Reserve;
18^0 10' 55" S x 21^0 43' 51" E

49. Kavango River, hippo pool in Mahango Game Reserve;
18^0 11' 48" S x 21^0 44' 19" E

50. Kavango River, at Pupa Falls campsite;
18^0 07' 19" S x 21^0 34' 58" E

51. Kavango River, at Ndongo;

52. Kavango River, 2 km east of Shadikungoro;
18^0 01' 48" S x 21^0 25' 18" E

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Table 1 (cont.)

53. Omataka River, at Golden Highway bridge; 17^0 57' 08" S x 20^0 28' 18" E

54. Kavango River, at clinic just east of Makuyuvo bottle store; 17^0 53' 47" S x 20^0 22' 30" E

55. Kavango River, just west of Rundu; 17^0 53' 56" S x 19^0 44' 14" E

56. Kavango River, just west of Sigone; 17^0 52' 25" S x 19^0 32' 05" E

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Table 2. Latin and local names of fish species which potentially occur in the Kavango and Caprivi provinces, Namibia, based on a synthesis of current literature. (AN) Angolan waters, (LZ) Lower Zambezi, (MZ) Middle Zambezi, (UZ) Upper Zambezi, (LK) Lake Kariba, (LI) Limpopo, (PU) Pungwe, (US) Upper Save/Runde, (LS) Lower Save/Runde, (KA) Kavango, (LU) Lundi.

GENUS	SPECIES	LOCAL NAME(S)
Hippopotamyrus	ansorgii	
H.	discorhynchus	Mpatu LZ, MZ, LK, Manquela LK
Marcusenius	macrolepidotus	Nembele UZ, LK, Mburi, Masija MZ, LK
Mormyrus	lacerda	Ndikusi UZ
Petrocephalus	catostoma	
Pollimyrus	castelnaui	Kaleha AN
Brycinus	lateralis	Mungumba AN, Mbale UZ, LK
Hydrocynus	vittatus	Muka, Musonga, Kasanji, Kasangi AN, Ngweshi UZ, Maluvali, Ilubale, Mcheni LK, MZ, Muvanga LS
Micralestes	acutidens	Muka, Mika, Sese, Lutemba, Mwota, Tsha wamba, Lubango AN, Misindi LK, MZ Chitaka LK
Rhabdalestes	maunensis	Mungumba AN
Hepsetus	odoe	Kasangi, Tusangi, Mukunga AN, Molumezi UZ, Nyeru KA
Hemigrammocharax	machadoi	Namukidji AN
H.	multifasciatus	
Nannocharax	macropterus	Mujiji, Muka, Sese AN
B.	afrovernayi	Senge AN
B.	annectens	
B.	barnardi	Senge, Ngonga, Mukenge AN
B.	barotseensis	
B.	bifrenatus	
B.	codringtonii	Linyonga UZ
B.	eutaenia	
B.	fasciolatus	Chitakala LK
B.	haasianus	
B.	lineomaculatus	Gwinya LK, Msindi LS
B.	manicensis	
B.	marequensis	Kakumbi AN, Mutuba LK, MZ, Kuyu US, LS
B.	multilineatus	Lisangisangi, Senge, Ngonga AN
B.	paludinosus	Ncenga LK, Gwinya LS
B.	poechii	Mungumba AN, Mpifu LK, UZ
B.	radiatus	Msindi LU
B.	tangandensis	
B.	thamalakanensis	Senge, Ngonga AN
B.	unitaeniatus	Msindi LK
B.	viviparus	Lisangisangi AN
Coptostomabarbus	wittei	
Labeo	cylindricus	Mumbu LK, MZ, LZ, US Nguridzi LK, LS
L.	lunatus	Linyonga LK, UZ
Mesobola	brevianalis	

Table 2 (cont.)

Opsaridium	zambezense	Lutemba, Sese, Lusese, Lumbungo, Sakunge, Muka, Mika, Mwota AN, Myamkaula
Amphilius	uranoscopus	
Parauchenoglanis	ngamensis	Tshingondola, Ingondola, Tshinganda, Lumbungo, Mbungo, Tshikanda, Dibonga ya Kajama, Lwasa AN, Sibutu UZ
Leptoglanis	rotundiceps	
L.	dorae	
Clarias	dumerilii	
C.	gariepinus	Mburi AN, Mandev, Maramba, Mukonzwe, Mubondo LK, LZ, MZ, US, Ndombi UZ, Shamwe Chilu LS
C.	ngamensis	Mburi AN, Ndombi UZ
C.	stappersii	Tshiwende, Iwende, Kambangaji, Tumbangaji, Tshota mualwa, Lundembe AN, Ndombi UZ
C.	theodorae	Tshota mualwa, Iota mualwa, Kambangaji, Musonji, Tshimbua AN, Minga UZ
Clariallabes	platyprosopos	
Heterobranchus	longifilis	Lenda, Tshota mualwa AN, Vundu LK, MZ, Njume LZ
Chiloglanis	fasciatus	
Synodontis	leopardinus	Songonge UZ
S.	macrostoma	
S.	macrostigma	Tshingele AN, Singonge UZ
S.	nigromaculatus	Tshingondola, Tshingele AN, Cingwele UZ
S.	thamalakanensis	
S.	vanderwaali	
S.	woosnami	Tshingele AN, Songonge UZ
Schilbe	intermedius	Zeza, Kanzema AN, Mvenga LS, Lubangu UZ
Aplocheilichthys	hutereaui	Kakenga matako AN
A.	johnstoni	Kakenga matako, Mukitshi, Munyanya ou Namuquidji AN, Pipinka LK
A.	katangae	Kakenga matako ou Kanga AN
Hemichromis	elongatus	Lutundwa, Tundwa, Thundwa, Tshikele, Ikele, Mbungo, Kanzema, Tunzema, Lwasa, Tsha wamba, Sese AN, Linwalala, Liulungu UZ
Oreochromis	andersonii	Njinji UZ
O.	macrochir	Khundu, Mahumbwe, Tshimbua, Keji AN, Mu UZ
Pharyngochromis	acuticeps	Tshinganga, Tshilamba AN, Imbalata LK
Pseudocrenilabrus	philander	Tshakala, Matshakala, Tshikele, Mbowo, Thundwa, Tsha wamba, Lwasa AN, Hangalole LK
Serranochromis	altes	
S.	angusticeps	Tshimbua, Khele AN, Mushuna, Lisamba UZ

Table 2 (cont.)

S.	carlottae	Likumbwa LK, UZ
S.	codringtonii	Seao LK, UZ
S.	giardi	Sieo LK, Seao UZ
S.	greenwoodi	
S.	longimanus	
S.	macrocephalus	Tshimbua, Khele AN, Mulumbo LK, UZ
S.	robustus jallae	Tshikele, Ikele AN, Nembwe LK, UZ
S.	thumbergi	Mununga UZ
Tilapia	rendalli	Tshikele, Ikele, Khundu, Kapa, Tshimbua AN, Mbanje LK, MZ, LZ, US, Mudile LK, Mbungu LS, Mbufu UZ
T.	ruweti	Liumbwe, Mbowo, Tukeya, Kakeya AN
T.	sparrmanii	Mgwaya LK, MZ, Situ, Situhu UZ
Ctenopoma	ctenotis	
C.	multispinis	Mbundu UZ
Afromastacembelus	frenatus	Mutomi UZ
A.	vanderwaali	

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Preliminary Key to the Fishes of Kavango - Caprivi Provinces

Mormyridae

1a. Mouth located ventrally, nostrils close together, dorsal fin smaller than anal fin..... **Petrocephalus catostoma**
1b. Mouth superior, terminal or subterminal.....2

2a. Mouth superior, lower jaw protruding beyond upper jaw, dorsal fin shorter than anal fin **Marcusenius macrolepidotus**
2b. Lower jaw not protruding beyond upper jaw.....3

3b. Mouth terminal or subterminal, dorsal fin shorter than anal fin.....4
3c. Mouth terminal or subterminal, dorsal fin longer than anal fin.....5

4a. Rounded lobes to both caudal peduncle and caudal fin, no vertical bands present, nostrils spaced closely together **Pollimyrus castelnaui**
4b. Caudal peduncle lobes slightly pointed, dark vertical band situated from dorsal fin origin to just behind anal fin origin, prominent chin present..... **Hippopotamyrus ansorgii**

5a. Snout blunt, prominent chin; subterminal mouth; dorsal fin about 1 1/2 times longer than anal fin.... **H. discorhynchus**
5b. Snout nosed, mouth terminal; dorsal fin 4-5 times longer than anal fin..... **Mormyrus lacerda**

Distichodontidae

1a. Pectoral fin extending past origin of pelvic fin, absence of pigment between lateral band and dorsal origin **Nannocharax macropterus**
1b. Pectoral fin not extending past origin of pelvic fin.....2

2a. Adipose fin absent.....**Hemigrammocharax machadoi**
2b. Adipose fin present.....**H. multifasciatus**

Characidae

1a. Large exposed canine-like teeth..... **Hydrocynus vittatus**
1b. No large exposed canine-like teeth.....2

2a. Black lateral band extending to black spot on caudal rays **Brycinus lateralis**
2b. Black lateral band not extending to form black spot on caudal rays.....3

3a. 23-28 scales along lateral line, dorsal fin often tipped with black and orange; D origin above P2 base ..... **Micralestes acutidens**
3b. 33-36 scales along lateral line, no color on dorsal fin tip; D fin origin behind pelvic fin, body slender, dark band of pigment along anal fin base.....**Rhabdalestes maunensis**

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Cyprinidae

1a. D and A fin origins opposite..... **Mesobola brevianalis**
1b. Dorsal fin more or less opposite pelvic fin.....2

2a. Barbels absent.....3
2b. Barbels usually present.....4

3a. Low lateral line, paired vertical bars on body, anal fin concave, anal rays III,11-13.....**Opsaridium zambezense**
3b. Mouth distinctly superior, anal fin not concave, anal rays II,5..... **Coptostomabarbus wittei**

4a. Mouth normally terminal, lateral line scales 22-36.**Barbus** 6
4b. Mouth normally subterminal, LL scales 34-44..... **Labeo** 5

5a. Dorsal fin crescent shaped and twice head length, caudal fin large, crescent shaped; pectoral fin with black leading edge **L. lunatus**
5b. Dorsal fin shorter than twice head length, caudal fin forked; dark lateral band when preserved.....**L. cylindricus**

6a. Scales longitudinally striated; dorsal fin in advance of pelvic fin.....7
6b. Scales radiately striated; dorsal fin origin in advance of, over or posterior to pelvic fin base.....8

7a. Specimen from Upper Zambezi River system....**B. codringtonii**
7b. Specimen from Middle Zambezi River system....**B. marequensis**

8a. Lateral line absent; distinct anal, caudal and dorsal spots **B. haasianus**
8b. Lateral line present.....9

9a. Dorsal fin origin posterior to pelvic fin origin **B. paludinosus**
9b. Dorsal fin origin anterior or above pelvic fin origin.....10

10a. Dorsal fin origin anterior to pelvic fin origin.....11
10b. Dorsal fin origin above pelvic fin origin.....16

11a. Clearly defined black spots along side of body.....12
11b. Black lateral band present in preserved specimens, no spots on body.....13

12a. 3 or 4 black spots along side of body, 1 at base of anal fin.....**B. barotseensis**
12b. 4 or more black spots along body, none at base of anal fin.....**B. lineomaculatus**

13a. Body with several distinct lateral stripes, dorsal spine serrated, middle lateral stripe carries over into caudal fin ..... **B. multilineatus**
13b. Body with single lateral stripe, dorsal spine without serrations.....14

14a. High lateral line scale count of 29-37; anterior and posterior barbels longer than eye diameter.. **B. unitaeniatus**
14b. Lateral line scale count 25-30; anterior barbel length less than eye diameter.....15

15a. Thin black lateral band extending from snout to caudal peduncle, sometimes forming distinct caudal spot; A with distinct spot; posterior barbels 1-1 1/2 eye diameter..... ..... **B. thamalakanensis**
15b. Broad black, but sometimes incomplete, lateral band starting behind gill cover and ending as small dot on caudal peduncle, falcate dorsal fin; A with or without (?) spot; posterior barbels 1/2 - 3/4 of eye diameter..... ..... **B. annectens**

16a. Body with several vertical stripes..... **B. fasciolatus**
16b. Body without vertical stripes.....17

17a. Body with 2 distinct lateral stripes (lateral band, plus LL pores outlined in black).....18
17b. Body without 2 distinct lateral stripes.....19

18a. Mid-lateral stripe runs from snout, through eye to caudal peduncle.....**B. bifrenatus**
18b. Mid-lateral stripe runs from behind opercle to caudal .....**B. viviparus**

19a. Lateral line incomplete, very large black blotch on caudal peduncle, barbels absent.....**B. afrovernayi**
19b. Lateral line complete, barbels present.....20

20a. Black ovate blotch on caudal peduncle.....**B. poechii**
20b. No blotch on caudal peduncle 21

21a. Concentration of black pigment on scales above lateral line, presence of minute mucus pores on sides and top of head forming distinct wavy lines..... **B. radiatus**
21b. Lacking characters in 21a.....22

22a. Barbels extremely short, mouth small and terminal; 29-33 scales along lateral line; third dorsal ray flexible, unserrated; male with tubercles; appears to have pre-dorsal and anal spots..... **B. barnardi**
22b. Barbels more developed; third dorsal ray serrated.....23

23a. Black lateral stripe present in live specimens.....24
23b. 22-25 scales along lateral line, ...**B. manicensis**

24a. Chubby body, sometimes lateral stripe wavy, extending from snout to caudal peduncle, 24-28 scales along lateral line.....**B. eutaenia**
24b. Deep body, black lateral stripe starts behind gill cover and ends on caudal peduncle, 22-24 scales along lateral line, red spot on opercle.....**B. tangandensis**

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Siluriformes

1a. Second dorsal or adipose fin nearly as long as first dorsal fin.....**Heterobranchus longifilis**
1b. Lacking second dorsal or adipose fin or much smaller in size than first dorsal.....2

2a. Dorsal and anal fins long and with spines..... **Clariidae** 6
2b. Dorsal fin short or absent with or without spines.....3

3a. Anal fin base almost 1/2 of total length.....**Schilbe mystus**
3b. Anal fin base short.....4

4a. Dorsal, pectoral fins lacking spines **Amphilius uranoscopus**
4b. Dorsal and pectoral fins with spines.....5

5a. Mouth sucker-like with branched barbels.....**Mochokidae** 10
5b. Mouth normal, barbels not branched.....**Bagridae** 11

6a. Broad, almost triangular-shaped head nearly as wide as it is broad.....**Clariallabes platyprosopos**
6b. Head not broad or triangular shaped.....7

7a. Small catfish with thin, cylindrical body and extremely short head 1/5 to 1/6 of total length maxillary barbels about equal to head length.....**Clarius theodorae**
7b. Adults small or large, but with head 1/4 to 1/3 of total length.....8

8a. Small catfish, maximum size about 18 cm total length, maxillary barbels reaching end of pectoral fin **C. dumerilii**
8b. Large adult catfish, maxillary barbels not reaching end of pectoral fin.....9

9a. Adipose fin present.....**C. ngamensis**
9b. Adipose fin absent.....**C. gariepinus**

10a. Inferior sucker-like mouth.....**Chiloglanis fasciatus**
10b. Inferior mouth not sucker-like, pectoral spines serrated on both sides.....**Synodontis** *

11a. Body with mottled marking.....**Leptoglanis dorae**
11b. Body without mottled markings.....15

12a. Serrated pectoral fins, rounded caudal fin **Parauchenoglanis ngamensis**
12b. Serrated pectoral fins, forked caudal fin **L. rotundiceps**

* Presently examining this genus

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Poeciliidae

1a. Dorsal fin situated far behind anal fin origin, slender body, 18-20 scales around body just anterior to ventral fins, ...**Aplocheilichthys johnstoni**
1b. Dorsal fin situated just posterior to anal fin origin.....2

2a. Deep body, 16 scales around body just anterior to ventral fins, dark lateral band present below midline of body, dorsal rays 9-10, 25-28 scales in longitudinal series...**A. katangae**
2b. Deep body, dark lateral band absent, dorsal rays 8-9, 22-24 scales in longitudinal series.....**A. hutereaui**

Cichlidae

1a. Small species; with 2 enlarged (but **not** large) canine teeth present in upper jaw, lateral bands and vertical stripes forming distinct H markings.....**Hemichromis elongatus**
1b. Small and large species without canine teeth.....2

2a. Small species, double-knob shaped gill rakers short and stout numbering 2-10 on lower arch.....**Pharyngochromis acuticeps**
2b. Variable characters, but gill rakers not double-knob shaped.....3

3a. Small species, rounded caudal fin and small concavity on snout; 27-30 scales along lateral line, with incomplete pores..... **Pseudocrenilabrus philander**
3b. Small or large species, rounded or truncate caudal fin, no concavity on snout.....4

4a. Gills rakers slender, numbering less than 15 on lower anterior arch; mouth small; juveniles with "tilapia" mark on soft dorsal..... **Tilapia** 5
4b. Gill rakers thick or stout (excluding **S. angusticeps**); mouth large or small.....7

5a. Rounded caudal fin, to 9 vertical bands on body, snout rounded, vertical bands on caudal fin.....**T. ruweti**
5b. Caudal fin not rounded.....6

6a. Caudal fin truncate, 5-6 vertical bands alternating thick and thin, 8-12 blunt thick gill rakers on lower arch, in juveniles, red throat, orange anal and lower caudal fin, pelvic fins without black pigment..... **T. rendalli**
6b. Smaller species, lacking red/orange pigmentation on anal fin; caudal fin emarginate; 8-9 vertical bands parallel and consistent in width, pelvic fins with black pigment **T. sparrmanii**

7a. 20-25 gill rakers on lower anterior arch..... **Oreochromis** 8
7b. Gill rakers fewer in number.....**Serranochromis** *

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8a. Head with straight profile, 3 spots on side; caudal fin truncate.....**O. andersonii**
8b. Head with steep and rounded profile; without 3 lateral spots, but having numerous black spots on head.**O. macrochir**
* Presently examining this genus

Anabantidae

1a. 9-10 anal spines, posterior edge of both dorsal and anal fins pointed.....**Ctenopoma ctenotis**
1b. 13-19 anal spines, posterior edge of both dorsal and anal fins rounded.....**C. multispinus**

Mastacembelidae

1a. 29-32 spines along dorsal surface, snout elongated in the form of mental appendage projecting way past lower jaw **Afromastacembelus frenatus**
1b. 22-27 spines along dorsal surface, snout not elongated **A. vanderwaali**