



## ***Annotated check-list of the freshwater fishes of the Nilo-sudan river basins, in Africa***

Christian LÉVÊQUE (1), Didier PAUGY (1),  
Guy G. TEUGELS (2)

### SUMMARY

*An up-to-date checklist of freshwater fishes from nilo-sudan river basins has been established, taking into account the material collected by the authors, and the collections stored in european Museums. Taxonomy was updated using the most recent revisions, and synonymies are mentioned. The present stage of knowledge on species distribution in the different river basins is summarized in a table where museums in which collections of a species are stored are mentioned. Until now, 38 families, 119 genera and 361 species were recorded in the river basins under study. There are about 91 species in the Gambia system, 59 in the Mono, 249 in the Niger, 129 in the Nile, 91 in the Ogun, 106 in the Oueme, 119 in the Senegal, 130 in the Tchad basin, 51 in the Turkana basin, 140 in the Volta.*

KEY WORDS : Fish — Taxonomy — Fresh waters — Africa — Nilo-sudan area — Distribution — Faunal lists.

### RÉSUMÉ

#### LISTE COMMENTÉE DES POISSONS D'EAU DOUCE DES BASSINS NILO-SOUDANIENS D'AFRIQUE

*Une mise au point des connaissances sur la faune ichthyologique des bassins nilo-soudaniens est présentée, en tenant compte des diverses récoltes réalisées par les auteurs et des collections déposées dans les musées européens. La nomenclature a été actualisée en tenant compte des révisions taxinomiques récentes, et les synonymies ont été mentionnées. L'état actuel des connaissances sur la distribution des espèces dans les différents bassins hydrographiques est présenté sous forme d'un tableau dans lequel sont indiqués les principaux muséums où des collections d'une espèce sont déposées. Au total 38 familles, 119 genres et 361 espèces ont été inventoriées jusqu'ici dans les bassins étudiés. On compte environ 91 espèces dans la Gambie, 59 dans le Mono, 249 dans le Niger, 129 dans le Nil, 91 dans l'Ogun, 106 dans l'Ouémé, 119 dans le Sénégal, 130 dans le bassin tchadien, 51 dans le bassin du Turkana, 140 dans la Volta.*

MOTS CLÉS : Poissons — Taxinomie — Eau douce — Afrique — Bassins nilo-soudaniens — Distribution — Inventaires faunistiques.

(1) ORSTOM, 213, rue Lafayette, 75480 Paris cedex 10, France.

(2) Musée royal d'Afrique centrale, chaussée de Louvain, 1980 Tervuren, Belgique.

Our knowledge on the taxonomy and distribution of fishes in Nilo-sudan river basins has improved considerably during the last few decades. This is a consequence of new collections made available, and of detailed revisions of genera and families which have revealed new species and synonymies. This paper provides an up-to-date checklist for Nilo-sudan basins, and hence a data-base for further ecological and zoogeographical studies. It follows other contributions to west African coastal basins : Côte-d'Ivoire (TEUGELS *et al.*, 1988), Guinée and Guinea Bissau (LÉVÊQUE *et al.*, 1989), Mono (PAUGY & BENECH, 1989), Sierra Leone and Liberia (PAUGY *et al.*, 1990).

#### REVIEW OF SYSTEMATIC LITERATURE AND COLLECTIONS OF FISHES FROM NILO-SUDAN RIVER BASINS

*Senegal* : STEINDACHNER (1870) published a comprehensive study on the Senegal river fish fauna. This basin was the first to be well investigated in western Africa. Since that time, there has been no general review, and only scattered taxonomic data were published for the lower basin : REIZER *et al.* (1972 a, 1972 b, 1973, 1980), MARQUET *et al.* (1979). The upper reaches in Mali and Guinea have been investigated by DAGET (1961 b, 1962, 1969 b) and large collections were recently registered in the Paris Museum. New species have recently been described : *B. foutensis* Lévêque *et al.*, 1988 and *Labeo roseopunctatus* Paugy *et al.* 1989.

*Gambia* : Few major contributions have been published on the fishes of the Gambia river : SVENSSON (1933), JOHNELS (1954) and DAGET (1956, 1960 b, 1961 a).

*Volta* : The upper reaches of the Volta basin in Burkina Faso were investigated by DAGET (1957, 1960 a) and ROMAN (1966, 1974). For the lower Volta in Ghana, TREWAVAS & IRVINE (1947), ROBERTS (1967), and LOWE-McCONNELL (1972) provided general taxonomic lists. *Barbus* species were studied by HOPSON & HOPSON (1965). POLL (1971) described *Synodontis macrophthalmus*. The fish fauna of the Volta basin can be considered as well known, and large collections are available in Museums.

*Niger* : Three main divisions can be recognized : the upper and middle Niger to Kainji lake, the Benue river, and the lower Niger.

The upper and middle Niger fish fauna has been studied in details by DAGET (1954, 1959 a, 1962), and LEWIS (1974). Numerous collections are stored in museums. Since those works, new species have been

described from this area : *Brycinus carolinae* Paugy & Lévêque, 1981, *Tilapia dageti* Thys van den Aude-naerde, 1971, *Malapterurus minjiriya* Sagua, 1987, *Labeo roseopunctatus* Paugy *et al.*, 1989.

The Benue : the most recent contributions to its fish fauna are BLACHE *et al.* (1964) for the Mayo Kebi, DAGET & STAUCH (1963) and STAUCH (1966) for the upper Benue, and REID & SYDENHAM (1979) for the lower Benue.

The lower Niger : the fish fauna from this area is not well documented in the literature. BOULENGER (1901, 1902), BOESEMAN (1963) and KÄHSBAUER (1962) provided some information. Only recently, important collections were deposited in the Tervuren Museum. Their study led to the description of several new species : *Neolebias powelli* Teugels & Roberts, 1990, *Ctenopoma nebulosum* Norris & Teugels, 1990, and *Nannocharax latifasciatus* Coenen & Teugels, 1989.

*Chad basin* : Our knowledge of the fishes from the Chari river and Lake Chad, results from different collections made available since the beginning of the century. However, preserved material is not abundant and is sometimes in poor condition, with some questionable localities. That is the case for material deposited in the Museum national d'histoire naturelle de Paris (M.N.H.N.) by J. THOMAS : it is quite obvious that collections from the Zaïre basin were mixed with material from the Chad basin. Although the middle and lower courses of the Chari and Logone rivers, as well as Lake Chad, are fairly well investigated, the fish fauna of the upper Chari in Central African Republic, is still poorly known. Species from the Zaïre basin might occur in the upper reaches of the Chari, but misidentification of such material is also possible. The work of Blache *et al.* (1964) is the most recent and extensive review of the fish fauna from the Chad basin and upper Benue. Few additional species have subsequently been reported : *Schilbe marmoratus* by Mok (1974) and *Clarias albopunctatus* by DAGET (1969 a). A number of taxonomic changes did occur (see below) and reports of some Nile or Zaïre basin species are questionable in the absence of any preserved specimens.

*Mono, Oueme, and Ogun Rivers* : situated between the Volta and lower Niger, these three rather small rivers are inhabited by a Nilo-sudan fish fauna. Some important contributions have been published on the Mono (PAUGY & BENECH, 1989), the Oueme (DAGET, 1950; GRAS, 1960, 1961) and the Ogun (SYDENHAM, 1977). A rather large collection of material from the Mono is stored in the M.N.H.N.

*Lake Turkana* was investigated for many years by HOPSON and HOPSON (1982), who provided an anno-

tated checklist and described a few species. PELLEGRIN (1935) gave a checklist of fishes from the Omo river and GREENWOOD (1974) reviewed the *Haplochromis* group.

*Nile*: the first extensive account of the Nile fish fauna was published by BOULENGER (1907). No general review has been published since, but some papers provided additional data: JOHNSEN (1926), RENDAHL (1935), SANDON (1950), Abu GIDEIRI (1967), MISHRIGI (1970). In this paper we only consider the Nile river and those lakes that are in direct relation with the Nile (e.g. lakes Mobutu (ex Albert) and Tana. Lakes Victoria and Kioga, isolated by the Murchisson Falls, and lakes Edward and George by the Semliki rapids which are seemingly impassable to fishes, harbour highly endemic and diversified fauna, and are not taken into account here.

## METHODS

Table 1 summarizes the data collected for river systems considered in this paper. A number of symbols are used; their explanation is as follows:

— a valid species which has been described from a river system under study, is indicated by a star;  
 — specimens collected from a river system and currently preserved in museum collections, are indicated by the following capital letters:

B: British Museum (Natural History), London.  
 P: Museum national d'histoire naturelle, Paris.  
 T: Musée royal de l'Afrique centrale, Tervuren.  
 S: Naturhistoriska Riksmuseet, Stockholm.  
 Z: Zoologisches Staatsinstitut und Zoologisches Museum, Hamburg;

— when a species is mentioned in a paper, but when no material is available in the collections then a number referring to the paper is used;

— when a species is not preserved or not mentioned in a paper, but observed by the authors, it is indicated by a cross;

— in some cases, a question mark (?) means that the report is questionable or that it is difficult to identify the preserved specimens.

Subsequent to the publication of the papers mentioned under section 1, taxonomic revisions have introduced new species or new synonymies. In order to provide a useful data base for African ichthyologists, we briefly list the taxa for which taxonomic changes have been introduced to the species level. We restrict this list only to the species mentioned in the papers listed above. For more details, CLOFFA 1 & 2 (DAGET *et al.*, 1984, 1986) provide a current list of African fish species with their type

localities, full synonymies and references to papers where the species are quoted. The following relevant taxonomic revisions were consulted for taxonomic changes introduced after the publication of CLOFFA: Clupeidae (Gourene, 1988), *Hippopotamyrus* (Lévêque & Bigorne, 1985 a), *Marcusenius* (Jégu & Lévêque, 1984 b), *Mormyrus* (Lévêque & Bigorne, 1985 b), *Mormyrops* (Bigorne, 1987), *Brienomyrus* (Bigorne, 1989), *Pollimyrus* (Bigorne, 1990 a), *Gnathonemus* (Bigorne, 1990 b), *Petrocephalus* (Bigorne & Paugy, 1991), *Phago* and *Ichthyoborus* (Lévêque & Bigorne, 1987), *Alestes* and *Brycinus* (Paugy, 1986), *Hydrocynus* (Brewster, 1986; Paugy & Guégan, 1989), *Micralestes* and *Rhabdolestes* (Paugy, 1990), *Barbus* (Lévêque, 1989 a and b; Lévêque *et al.*, 1988; Lévêque & Guégan, 1990), *Raiamas* and *Leptocypris* (Lévêque & Bigorne, 1983; Howes & Teugels, 1989), neobolines (Howes, 1984), *Labeo* (Jégu & Lévêque, 1984 a; Reid, 1985), *Chrysichthys* (Risch, 1986), *Clarias* (Teugels, 1986), *Heterobranchus* (Teugels *et al.*, 1990), Schilbeidae (de Vos, 1984; de Vos & Lévêque, 1983), *Tilapia* (Thys van den Audenaerde, 1968 b, 1970), *Oreochromis* and *Sarotherodon* (Trewavas, 1983), *Haplochromis* (Greenwood, 1979), pelmatochromines (Greenwood, 1987), *Tylochromis* (Stiassny, 1989), *Parachanna* (Bonou & Teugels, 1985), Centropomidae (Greenwood, 1976), *Ctenopoma* (Norris & Teugels, 1990).

## LIST OF SPECIES SUBJECTED TO TAXONOMIC CHANGES OR MISIDENTIFICATION

### POLYPTERIDAE

#### *Polypterus ansorgei* Boulenger, 1910

Described from river Corubal in Guinea Bissau, the species was recorded from the upper Niger by DAGET (1954), but no specimens were preserved.

### ANGUILLIDAE

#### *Anguilla anguilla* (Linnaeus, 1758)

*Anguilla vulgaris* Shaw, 1903 in BOULENGER (1907) and SANDON (1950).

*Anguilla aegyptiaca* Kaup, 1856.

### DENTICIPIITIDAE

#### *Denticeps clupeoides* Clausen, 1959

*Acanthothrissa palimptera* Gras, 1961.

### CLUPEIDAE

#### *Alosa fallax* (Lacépède, 1803)

*Clupea finta* Cuvier, 1829.

#### *Odaxothrissa ansorgii* Boulenger, 1910

*Cynothrissa ansorgii* (Boulenger, 1910), (see GOURENE, 1988).

TABLE I

List of species present in the river basins studied

	Sen	Gam	U.Ni	Ben	L.Ni	Volt	Mon	Oue	Ogun	Chad	Nile	Turk
<b>DASYATIDAE</b>												
<i>Dasyatis garouensis</i>				*	?							
<b>PROTOPTERIDAE</b>												
<i>Protopterus aethiopicus</i>											*	
<i>P. annectens</i>	PT	*	PT	T	B	BT		1		BPT	B	
<b>POLYPTERIDAE</b>												
<i>Erpetoichthys calabaricus</i>					BT			1	B			
<i>Polypterus ansorgii</i>			147						3			
<i>P. bichir</i>	BPT	P	PT	BT	B	T				BPT	*	2
<i>P. endlicheri</i>			BP	P	B	BT		1-8		BPT	*	
<i>P. senegalus</i>	*	BPT	PT	BP	BT	PT	?	T		BPT	BT	BP
<b>ANGUILLIDAE</b>												
<i>Anguilla anguilla</i>											9	
<b>DENTICIPITIDAE</b>												
<i>Denticeps clupeioides</i>					T			P				
<b>CLUPEIDAE</b>												
<i>Alosa fallax</i>											9	
<i>Laeviscutella dekmpei</i>					T			T				
<i>Odaxothissa ansorgii</i>	PT											
<i>O. mento</i>				B	T	T						
<i>Pellonula leonensis</i>	PT	BP	BPT	BP	BT	BT		BP				
<i>P. vorax</i>					*			1				
<i>Sierrathrissa leonensis</i>	T	T	BPT	PT	T	BT						
<b>OSTEOGLOSSIDAE</b>												
<i>Heterotis niloticus</i>	BPT	BT	PT	BPT	B	T	int	BT	3	BT	*	B
<b>PANTODONTIDAE</b>												
<i>Pantodon buchholzi</i>				B	BT			1	3			
<b>NOTOPTERIDAE</b>												
<i>Papyrocranus afer</i>	T	BT	P	B	B			1	B			
<i>Xenomystus nigri</i>				P	*			T	B	BP	B	
<b>MORMYRIDAE</b>												
<i>Brienomyrus brachyistius</i>		P			BT		PT	PT	3			
<i>B. longianalis</i>					*							
<i>B. niger</i>	PT	*	BPT	BPT	B	PT		T		PT	BP	
<i>Campylomormyrus tamandua</i>			PT	BP	B	BT			3	BP		
<i>Gnathonemus petersii</i>			5	BT					3?	BP		
<i>Hippopotamyrus harringtoni</i>											*	
<i>H. pictus</i>			BP	BP		BPT				BP	*	
<i>H. psittacus</i>			PT	BP	B	BPT		PT	BT			
<i>Hyperopisus bebe</i>	BPT	B	BP	BP	BT	BT		T	3	BPT	*	2
<i>Isichthys henryi</i>					BT				3			
<i>Marcusenius abadii</i>				B	*	BT						
<i>M. brucii</i>							P	1?	*			
<i>M. cyprinoides</i>			B	BPT	B					BPT	*	
<i>M. mento</i>	P	BP	P	P				P				
<i>M. senegalensis</i>	*	PT	BPT	BPT		BPT	PT	PT	BT	BPT		

	Sen	Gam	U.Ni	Ben	L.Ni	Volt	Mon	Oue	Ogun	Chad	Nile	Turk
<i>Mormyrops anguilloides</i>	P	BPT	PT	BPT	B	BPT	PT	P	T	BPT	*	
<i>M. breviceps</i>						BT						
<i>M. caballus</i>			PT	BPT								
<i>M. oudoti</i>			*									
<i>Mormyrus caschive</i>											*	
<i>M. hasselquistii</i>	P	12	BP	BP		BPT				BPT	*	
<i>M. kannume</i>											*	2
<i>M. macrophthalmus</i>			BP	BP	B	BPT						
<i>M. niloticus</i>											*	
<i>M. rume</i>	*	BT	BPT	BPT	B	BT	PT	T	BT	BPT		
<i>Petrocephalus ansorgii</i>			P	+	*							
<i>P. bane</i>	T		P	BPT	BT	PT				BPT	*	
<i>P. bovei</i>	BP	BPT	PT	BP	B	PT	P	PT	B	PT	*	
<i>P. keatingi</i>							P	P	P		*	
<i>P. pallidomaculatus</i>			*				P	P	P			
<i>P. pellegrini</i>			P									
<i>P. sauvagei</i>					T							
<i>P. soudaniensis</i>	BP		*	BP	T	BP				B	BP	
<i>Pollimyrus adpersus</i>					BT		PT	T	B			
<i>P. isidori</i>	BPT	P	BPT	P	T	PT		T	B	BPT	*	
<i>P. petherici</i>											*	
<i>P. petricolus</i>			*									
<b>GYMNARCHIDAE</b>												
<i>Gymnarchus niloticus</i>	BPT	PT	BPT	BT	B	T		1	3	BPT	*	B
<b>CROMERIDAE</b>												
<i>Cromeria nilotica</i>			PT	P		PT					*	
<b>PHRACTOLAEMIDAE</b>												
<i>Phractolaemus ansorgii</i>					*				3			
<b>HEPSETIDAE</b>												
<i>Hepsetus odoe</i>	BT	BT	BP	BT	B	BPT	PT	PT	3	PT		
<b>CHARACIDAE</b>												
<i>Alestes baremoze</i>	PT	PT	PT	BPT	T	T				PT	*	P
<i>A. dentex</i>	PT	PT	PT	B		PT				PT	*	2
<i>Arnoldichthys spilopterus</i>					*				3			
<i>Brycinus brevis</i>				B	T				17			
<i>B. carolinae</i>			*									
<i>B. ferox</i>												*
<i>B. imberi</i>										PT		
<i>B. leuciscus</i>	BPT	PT	BPT	BP	*	BPT	PT	T				
<i>B. longipinnis</i>		P	T		BT	PT	PT	P	T			
<i>B. luteus</i>						*						
<i>B. macrolepidotus</i>	*		PT	BP	BT	BPT	PT	P	B	BPT	BP	B
<i>B. minutus</i>											*	
<i>B. nurse</i>	PT	PT	BPT	BPT	BT	BPT	PT	T	BT	BPT	*	B
<i>Hydrocynus brevis</i>	BPT	T	BPT	PT		T				BPT	*	
<i>H. forskalii</i>	BPT	15	BPT	BPT	T	BPT	T	PT	BT	PT	*	BP
<i>H. vittatus</i>	T		PT	BPT		16		T		T	9	2
<i>Micrallestes elongatus</i>	PT		BPT	PT	BT	BPT		1	3	BPT	BP	B
<i>M. humilis</i>										P		
<i>M. occidentalis</i>			P		T	BT						
<i>M. pabrensis</i>					*							
<i>Rhabdalestes brevadorsalis</i>										*		

	Sen	Gam	U.Ni	Ben	L.Ni	Volt	Mon	Oue	Ogun	Chad	Nile	Turk
<i>R. septentrionalis</i>	P	PT	P	P	T	BPT		P		P		
<i>R. smylakai</i>					*							
<b>DISTICHODONTIDAE</b>												
<i>Distichodus brevipinnis</i>	BPT	15	PT	BP	B	T				BPT	*	
<i>D. engycephalus</i>	P		PT	BPT	B	BPT			BT	PT	*	
<i>D. niloticus</i>											*	B
<i>D. rostratus</i>	BPT	PT	BPT	BP	BT	BPT	P	T	3	BPT	*	
<i>Ichthyborus besse</i>				BP						BPT	*	
<i>Nannocharax ansorgii</i>	P	P	PT	P		BPT				BPT		
<i>N. fasciatus</i>	P		P	P		BPT		1	B	P		
<i>N. latifasciatus</i>					*							
<i>N. lineomaculatus</i>			?	P								
<i>N. niloticus</i>										P	*	
<i>N. occidentalis</i>			*	P		T						
<i>Neolebias ansorgii</i>				5	T				3			
<i>N. powelli</i>					*							
<i>N. trewavasae</i>											9	
<i>N. unifasciatus</i>		P	PT	BP	T	BPT		1		BPT		
<i>Paradistichodus dimidiatus</i>	?	P	PT	BP	T	BPT				P		
<i>Phago loricatus</i>			T	B	*			PT	B			
<b>CITHARINIDAE</b>												
<i>Citharidium ansorgii</i>			PT	P	*							
<i>Citharinops distichodoides</i>			PT	P	BT	BT				*		
<i>Citharinus citharus</i>	PT	BPT	BPT	BPT	BT	BPT				BPT	*	P
<i>C. latus</i>	BPT		PT	BPT	B	BT		1	BT	BPT	*	
<b>CYPRINIDAE</b>												
<i>Barbus ablabes</i>	P	?	PT	B		PT	PT					
<i>B. aboinensis</i>				BT	B							
<i>B. anema</i>			P	14						PT	*	
<i>B. atakorensis</i>				B		*	B	P	3?			
<i>B. baudoni</i>		S	P	P		BT				*		
<i>B. bawkuensis</i>			B?			*						
<i>B. bynni</i>											*	B
<i>B. callipterus</i>	T		PT	BP	BT		BP	PT	BT	P		
<i>B. chlorotaenia</i>				BP	BT	P	P	P	BT	PT		
<i>B. dialonensis</i>	*	P										
<i>B. ditinensis</i>	*											
<i>B. foutensis</i>	P	P	P									
<i>B. guildi</i>						*						
<i>B. humilis</i>											*	
<i>B. hypsolepis</i>			*		PT	BT						
<i>B. intermedius</i>											*	B
<i>B. kisiensis</i>			*?									
<i>B. leonensis</i>	PT	P	P	P	T	BPT		1		BPT		
<i>B. macinensis</i>	P		*	BT		BPT		P		P		
<i>B. macrops</i>	PT	PT	BPT	BPT	BT	BPT	P	PT		BPT		
<i>B. miolepis</i>										P		
<i>B. neglectus</i>											*	
<i>B. neumayeri</i>											*	
<i>B. nigeriensis</i>				B	*	TB			B	P	P	
<i>B. niokoloensis</i>	P	*										
<i>B. occidentalis</i>	P		P	BP		PT		P	*	P		
<i>B. parablades</i>						*						
<i>B. perince</i>	P		P	BPT		B				PT	*	

	Sen	Gam	U.Ni	Ben	L.Ni	Volt	Mon	Oue	Ogun	Chad	Nile	Turk
<i>B. petitjeani</i>	*		P									
<i>B. pleurogramma</i>												*
<i>B. pleuropholis</i>										BPT		
<i>B. pobequini</i>	PT	PT	*			BPT						
<i>B. pumilus</i>										P?	*	
<i>B. punctitaeniatus</i>	P		*	BPT		BPT				P		
<i>B. raimbaulti</i>	*		P									
<i>B. salessei</i>	P	P										
<i>B. stigmatopygus</i>			P	P		BPT		1		P	*	
<i>B. sublineatus</i>	P	P	*	BT	T	BPT	P	P	B?			
<i>B. sylvaticus</i>					P					T?		
<i>B. tongaensis</i>											*	
<i>B. turkanae</i>												*
<i>B. trispilopleura</i>											*	
<i>B. yetensis</i>											*	
<i>B. zalbiensis</i>				*						T		
<i>Chelaethiops bibie</i>			BP	14	B	B					*	B
<i>Garra allostoma</i>			*									
<i>G. dembeensis</i>										10	*	
<i>G. quadrimaculata</i>										P	B	
<i>G. trewavasae</i>				*								
<i>G. waterloti</i>	P		BP	B								
<i>Labeo coubie</i>	BPT	BPT	PT	BPT	BT	BPT				BPT	*	
<i>L. djourae</i>				*								
<i>L. forskalii</i>											*	
<i>L. horie</i>											*	BP
<i>L. lukulae</i>										P		
<i>L. niloticus</i>											*	B
<i>L. parvus</i>	P	P	BPT	B	B	BPT	PT	P	B	BP		
<i>L. roseopunctatus</i>	*		P									
<i>L. senegalensis</i>	*	BPT	PT	BP	BT	BPT	P	T	3	BPT		
<i>Leptocypris niloticus</i>	BP		PT	BPT	BT	BT				BP	*	B
<i>Mesobola bredoi</i>											*	
<i>Neobola bottegoi</i>											*	
<i>N. stellae</i>											*	
<i>Raiamas nigeriensis</i>			*	BT								
<i>R. senegalensis</i>	*	BPT	BPT	BT	BT	BPT		P	BT	BP	B	B
<i>Varicorhinus beso</i>											*	
<b>COBITIDAE</b>												
<i>Nemacheilus abyssinicus</i>											*	
<b>BAGRIDAE</b>												
<i>Auchenoglanis biscutatus</i>	PT	T	BP	P	B	T				BPT	*	
<i>A. occidentalis</i>	*	BPT	BPT	BPT	B	BPT		1		BPT	BPT	2
<i>Bagrus bajad</i>	PT		BPT	BPT	BT	BP				BPT	*	B
<i>B. docmak</i>	PT		BP	PT	B	BPT		P	3		*	B
<i>B. filamentosus</i>			*	P		P?						
<i>Chrysiichthys auratus</i>	PT		BPT	BPT	BT	BPT	PT	PT	BT	BPT	*	B
<i>C. johnelsi</i>		*										
<i>C. maurus</i>	*	BPT										
<i>C. nigrodigitatus</i>	*	?	BPT	BT	T	BPT	PT	PT	B			
<i>Clarotes laticeps</i>	PT		PT	BPT		PT				PT	*	
<i>Leptoglanis camerunensis</i>			P	*								
<i>Parauchenoglanis fasciatus</i>					T			*	3			

	Sen	Gam	U.Ni	Ben	L.Ni	Volt	Mon	Oue	Ogun	Chad	Nile	Turk
<b>SCHILBEIDAE</b>												
<i>Eutropiellus buffei</i>					BT			*	3			
<i>Irvineia voltae</i>						*						
<i>Parailia pellucida</i>	T		BPT	BP	BT	BPT		T	B	BP	*	
<i>P. spiniserrata</i>		*										
<i>Schilbe micropogon</i>						*		1				
<i>S. mystus</i>	BPT	BP	BPT	BP	BT	BPT	PT	PT	B	BPT	*	
<i>S. niloticus</i>	PT		BPT	BP	BT	BPT	P	PT	B	BPT	*	
<i>S. uranoscopus</i>			B?							BPT	*	B
<i>Siluranodon auritus</i>			BPT	BP	B	BPT				BPT	*	
<b>AMPHILIIDAE</b>												
<i>Amphilius atesuensis</i>						T	P					
<i>A. platyichir</i>	P	P	P									
<i>A. rheophilus</i>	P	*	P									
<i>Andersonia leptura</i>			P							BP	*	P
<i>Paramphilius trichomycteroides</i>	*											
<i>Phractura clauseni</i>				P	T	BPT	P	1	3			
<i>P. ansorgii</i>					*	B						
<b>CLARIIDAE</b>												
<i>Clarias agboviensis</i>					BT	BT	PT	PT	*			
<i>C. albopunctatus</i>				P						PT		
<i>C. anguillar</i>	BPT	BPT	BPT	BP	B	BPT				BT	*	
<i>C. buettikoferi</i>		BP										
<i>C. buthupogon</i>					TZ		P	P	B			
<i>C. camerunensis</i>					TZ			1		P		
<i>C. ebiensis</i>					BT	T		P	B			
<i>C. engelseni</i>											*	
<i>C. gariepinus</i>	PT		BPT	BP	B	B	PT	PT	BT	BPT	BPT	BP
<i>C. hilli</i>											*	
<i>C. jaensis</i>					BT							
<i>C. laeviceps</i>	PT		P									
<i>C. macromystax</i>			T	B	BT			T	B			
<i>C. pachynema</i>										P		
<i>C. wemeri</i>											*	
<i>Gymnallabes typus</i>					T			1				
<i>Heterobranchius bidorsalis</i>	BPT	T	PT	BP	B	BT				BPT	*	
<i>H. isopterus</i>	PT				BT	BPT	PT	P		B		
<i>H. longifilis</i>	PT	PT	PT	BP	BT	BPT	T	1?	B	P	*	B
<b>MALAPTERURIDAE</b>												
<i>Malapterurus electricus</i>	T	BP	BPT	BP	BT	BPT	PT	PT	B	BPT	*	2
<i>M. minjirya</i>			*									
<b>MOCHOKIDAE</b>												
<i>Brachysynodontis batensoda</i>	T	B	PT	BT	B					BPT	*	
<i>Chiloglanis benuensis</i>				*								
<i>C. batesi</i>			PT		B					P		
<i>C. niger</i>				*								
<i>C. niloticus</i>											*	
<i>C. occidentalis</i>	PT		P		B	+						
<i>C. voltae</i>			P		*							
<i>Hemisynodontis membranaceus</i>	BPT	T	PT	B	B	BPT				BPT	*	
<i>Mochokus brevis</i>										P	*	
<i>M. niloticus</i>			BPT	P	T					BP	*	2
<i>Synodontis annectens</i>		*										

	Sen	Gam	U.Ni	Ben	L.Ni	Volt	Mon	Oue	Ogun	Chad	Nile	Turk
<i>S. arnoulfi</i>						*						
<i>S. budgetti</i>				T	*							
<i>S. caudovittatus</i>												*
<i>S. clarias</i>	PT	BT	BPT	BPT	B	BPT					BPT	BPT
<i>S. courteti</i>			P	BT	B						*	
<i>S. eupterus</i>			PT	BPT	BT	T					BPT	*
<i>S. filamentosus</i>			PT	BPT	BT	PT					P	*
<i>S. frontosus</i>											10?	* R
<i>S. gobroni</i>			*									
<i>S. guttatus</i>					*							
<i>S. khartoumensis</i>												*
<i>S. melanopterus</i>				B	*			BPT	B			
<i>S. macrophthalmus</i>						*						
<i>S. nigrita</i>	*	BPT	BPT	P	BT	BPT			B	BPT	BP	
<i>S. obesus</i>					T		PT					
<i>S. ocellifer</i>	PT	*	P	BP	BT	BPT						
<i>S. omias</i>					*							
<i>S. resupinatus</i>					BPT	*						
<i>S. robbianus</i>					B							
<i>S. schall</i>	BPT	PT	BPT	BPT	BT	BPT	P	PT	BT	BPT	*	B
<i>S. serratus</i>											*	
<i>S. sorex</i>			BPT	BPT	B	BPT		P	3	BPT	*	
<i>S. tourei</i>	*											
<i>S. velifer</i>						*						
<i>S. vermiculatus</i>			*									
<i>S. violaceus</i>	P		P	P	B	PT					*	
<i>S. xiphias</i>					*							
<b>ARIIDAE</b>												
<i>Arius gigas</i>			B	P	*	B		1				
<i>A. heudeloti</i>				B	B							
<i>A. laticutatus</i>		B			B					?		
<b>CYPRINODONTIDAE</b>												
<i>Aphyosemion amoldi</i>						*						
<i>A. banforense</i>	+						+					
<i>A. bitaeniatum</i>					*			x	+	x		
<i>A. bualanum</i>											x	
<i>A. calliurum</i>						T		x	x			
<i>A. filamentosum</i>						C		T	C	C		
<i>A. gardneri</i>				B	BP							
<i>A. geryi</i>		P	+									
<i>A. guignardi</i>	P?											
<i>A. guineense</i>			*									
<i>A. gulare</i>					*				+	+		
<i>A. sjoestedti</i>					BT							
<i>Apocheilichthys bracheti</i>						*						
<i>A. hutereaui</i>											P	C
<i>A. jeanneli</i>												*
<i>A. kingi</i>												*
<i>A. lamberti</i>	P	*										
<i>A. loati</i>											P?	*
<i>A. macrophthalmus</i>						T		x	PT	x		*
<i>A. nimbaensis</i>						?						
<i>A. normani</i>	PT	PT	P	BP		PT	x	P	x	*	T	
<i>A. paffi</i>	P	P	*			PT					PT	
<i>A. rudolfianus</i>												*

	Sen	Gam	U.Ni	Ben	L.Ni	Volt	Mon	Oue	Ogun	Chad	Nile	Turk
<i>A. schioetzi</i>						*						
<i>Epiplatys biafranus</i>					T							
<i>E. bifasciatus</i>	P	PT	P	BP	BT	PT	C	1	3?	PT	*	
<i>E. grahami</i>					T			x	3			
<i>E. lamottei</i>			4									
<i>E. longiventralis</i>					T							
<i>E. sexfasciatus</i>					T		PT	T	x			
<i>E. spilargyreus</i>	P	PT	P	BP	C	PT	C	C	3	T	B	
<i>Foerschichthys flavipinnis</i>					T			x	x			
<i>Fundulosoma thierrii</i>	C	C	P			*						
<i>Nothobranchius rubroreticulatus</i>											*	
<i>Procatopus aberrans</i>				B	T							
<i>Pronothobranchius kiyawensis</i>		15	C	C						P		
<b>CHANNIDAE</b>												
<i>Parachanna africana</i>					BT		P?	PT	B			
<i>P. obscura</i>	?	B	P	BPT	BT	BPT	PT	PT	B	BPT	B	
<b>CENTROPOMIDAE</b>												
<i>Lates longispinnis</i>												*
<i>L. macrophthalmus</i>											*	
<i>L. niloticus</i>	BPT		PT	BPT	B	PT		PT	T	BPT	*	BP
<b>NANDIDAE</b>												
<i>Afronandus shelzukoii</i>												
<i>Polycentropsis abbreviata</i>					*			1	3			
<b>CICHLIDAE</b>												
<i>Astatotilapia bloyeti</i>			*	BP						P		
<i>Chromidotilapia guentheri</i>			PT	PT	BT	BPT	PT	PT	BT			
<i>Gobiocichla wonderi</i>			*									
<i>Hemichromis bimaculatus</i>	PT	BPT	PT	P	BT	PT		T		BPT	B	2
<i>H. fasciatus</i>	BPT	BPT	PT	BP	BT	BPT	PT	PT	BT	BPT		
<i>Nanochromis dimidiatus</i>										10		
<i>Oreochromis niloticus</i>	BPT		BPT	BP	B	BPT				BPT	BPT	BP
<i>O. aureus</i>	BT		BP	14						BPT	BT	
<i>Pelvicachromis pulcher</i>					*							
<i>P. taeniatus</i>					T							
<i>Pterochromis congicus</i>										10		
<i>Sarotherodon galilaeus</i>	BPT	BPT	PT	BP	BT	BPT	PT	T	B	BPT	BPT	B
<i>S. melanotheron melanotheron</i>					B		T	T	B			
<i>S. melanotheron heudeloti</i>	BPT	B										
<i>Steatocranus irvinei</i>						*						
<i>Thoracochromis albertianus</i>											*	
<i>T. avium</i>											*	
<i>T. loati</i>											*	
<i>T. macconelli</i>												*
<i>T. mahagiensis</i>											*	
<i>T. rudolfianus</i>												*
<i>T. turkanae</i>												*
<i>T. wingati</i>												*
<i>Thysochromis ansorgii</i>					*			T	B			
<i>Tilapia dageti</i>	P	P	BPT	B		*	T			BP		
<i>T. guineensis</i>	BPT	BPT	BP		BT	BT	PT	PT	B			
<i>T. louka</i>	P											
<i>T. mariae</i>					BT				BT			
<i>T. zillii</i>	BPT	P	BPT	BP	B	BPT	PT	1	3	BP	B	BP

	Sen	Gam	U.Ni	Ben	L.Ni	Volt	Mon	Oue	Ogun	Chad	Nile	Turk
<i>Tylochromis intermedius</i>		B										
<i>T. jentinki</i>		PT										
<i>T. sudanensis</i>			*	BP								
<b>GOBIIDAE</b>												
<i>Chonophorus lateristriga</i>					T		PT	P	3			
<i>Nematogobius maindroni</i>	*	+	+				P					
<i>Porogobius schlegelii</i>	P				T							
<b>ELEOTRIDAE</b>												
<i>Bostrychus africanus</i>					x							
<i>Dormitator lebretonis</i>		+	+					1	3			
<i>Eleotris daganensis</i>					T							
<i>E. senegalensis</i>					T							
<i>E. vittata</i>	P	15			T			1				
<i>Kribia nana</i>	P		P	+		PT		1		PT	*	
<i>Kribia kribensis</i>	+		P	+	T							
<b>ANABANTIDAE</b>												
<i>Ctenopoma congicum</i>											BP?	B?
<i>C. kingsleyae</i>	PT	BPT	PT	B	BT	PT	P	PT	B	B		
<i>C. lineatum</i>											*	
<i>C. murei</i>					P						PT	*
<i>C. nebulosum</i>					*							
<i>C. petherici</i>	PT	T	P	BPT				P		BPT	*	
<b>MASTACEMBELIDAE</b>												
<i>Aethiomastacembelus liberiensis</i>		P										
<i>A. nigromarginatus</i>			P			BPT	T	1				
<i>Caecomastacembelus cryptacanthus</i>			T		T			T	T			
<i>C. decorsei</i>				P	B						*	
<b>CYNOGLOSSIDAE</b>												
<i>Cynoglossus senegalensis</i>								5				
<b>SOLEIDAE</b>												
<i>Dagetichthys lakdoensis</i>				*	T							
<b>TETRAODONTIDAE</b>												
<i>Tetraodon lineatus</i>	BPT		BPT	P	B	T				BPT	*	B

Sen : Senegal; Gam : Gambia; U.Ni : upper Niger; Ben : Benue; L.Ni : lower Niger; Volt. : Volta; Mon. : Mono; Oue : Oueme; Ogun; Chad; Nile; Turk : Turkana. B, P, T, S, Z mean that specimens are stored respectively in British, Paris, Tervuren, Stockholm and Hamburg Museums; \* : type specimens (see text).  
List of reference : 1-GRAS (1961); 2-HOPSON (1982); 3-SYDENHAM (1977); 4-DAGET (1954); 5-REID & SYDENHAM (1979); 6-BOESEMAN (1963); 7-BOULENGER (1901); 8-LOWE-McCONNELL (1972); 9-BOULENGER (1907); 10-BLACHE *et al.* (1964); 11-DAGET (1957); 12-DAGET (1961 a); 13-DAGET (1961 b); 14-DAGET & STAUCH (1963); 15-JOHNELS (1954); 16-ROBERTS (1967); 17-PAUGY (1986);

C : CLOFFA.

***Odaxothrissa mento*** (Regan, 1917)

*Cynothrissa mento* Regan, 1917, (see GOURENE, 1988).

***Pellonula leonensis*** Boulenger, 1916

*Microthrissa miri* Daget, 1954, (see GOURENE, 1988).

*Pellonula miri* (Daget, 1954).

*Pellonula afzeliusi* Johnels, 1954, (see GOURENE, 1988).

*Pellonula afzeliusi miri* (Daget, 1954).

*Microthrissa normanae* Whitehead, 1986, (see GOURENE, 1988).

## MORMYRIDAE

***Brienomyrus (Brevimyrus) niger*** (Günther, 1866)

*Mormyrus lhuysi* Steindachner, 1870.

*Gnathonemus baudoni* Pellegrin, 1919.

According to REIZER *et al.* (1973) and BIGORNE (1989), the type specimen of *M. lhuysi* is a junior synonym of *B. niger*. The specimens identified *Pollimyrus lhuysi* from Niger (see Daget, 1954) and Chad (Blache *et al.*, 1965) belong to *Pollimyrus isidori* (see BIGORNE, 1990 a).

***Brienomyrus brachyistius*** (Gill, 1863)

*Mormyrus microcephalus* Sauvage, 1880.

*Mormyrus liberiensis* Steindachner, 1894.

*Brienomyrus adustus* (Fowler, 1936), (see TREWAVAS, 1974).

According to TREWAVAS (1974), *B. longianalis* (Boulenger, 1901) is a junior synonym of *B. brachyistius* but BIGORNE (1989) provided evidence that the two species are different and rehabilitated *B. longianalis*.

***Gnathonemus petersii*** (Günther, 1862)

*Gnathonemus brevicaudatus* Pellegrin, 1919, (see BIGORNE, 1990 b).

***Hippopotamyrus pictus*** (Marcusen, 1864)

*Gnathonemus harringtoni* (non Boulenger, 1905) in DAGET (1954), BLACHE *et al.* (1964), ROBERTS (1967), LOWE-McCONNELL (1972), DAGET & STAUCH (1963), (see LÉVÊQUE & BIGORNE, 1985 a).

***Hippopotamyrus psittacus*** (Boulenger, 1897)

*Marcusenius budgetti* Boulenger, 1904.

*Pollimyrus budgetti* (Boulenger, 1904), (see BIGORNE, 1990 a).

***Hyperopisus bebe*** (Lacépède, 1803)

*Hyperopisus occidentalis* Günther, 1866.

*Hyperopisus tenuicauda* Pellegrin, 1904.

*Hyperopisus bebe bebe* (Lacépède, 1803).

*Hyperopisus bebe chariensis* Blache *et al.*, 1964.

*Hyperopisus bebe occidentalis* Günther, 1866.

*Hyperopisus occidentalis tenuicauda* Pellegrin, 1904.

***Marcusenius abadii*** (Boulenger, 1901)

*Gnathonemus abadii* Boulenger, 1901.

*Gnathonemus gillii* Boulenger, 1904, described from the Niger (see JÉGU & LÉVÊQUE, 1984 b).

***Marcusenius deboensis*** (Daget, 1954)

A dubious species (see JÉGU & LÉVÊQUE, 1984 a), not included in the list.

***Marcusenius senegalensis*** (Steindachner, 1870)

*Gnathonemus senegalensis* (Steindachner, 1870).

*Gnathonemus gracilis* Pellegrin, 1922.

*Gnathonemus elongatus* Pfaff, 1933.

*Gnathonemus gambiensis* Svensson, 1933.

*Gnathonemus senegalensis gracilis* (Pellegrin, 1922).

*Gnathonemus senegalensis elongatus* Daget, 1954.

*Gnathonemus senegalensis pfaffi* Fowler, 1958.

***Mormyrops anguilloides*** (Linnaeus, 1758)

*Mormyrops deliciosus* (Leach, 1818), (see BIGORNE, 1987).

*Mormyrops curviceps* Roman, 1966, described from Volta basin (see BIGORNE, 1987).

*Mormyrops anguilloides voltae* Roman, 1966, described from Volta basin, (see BIGORNE, 1987).

***Mormyrops breviceps*** Steindachner, 1895

*Mormyrops elongatus* Norman, 1935, (see BIGORNE, 1987).

*Mormyrops bougouribaensis* Roman, 1966, described from Volta basin (see BIGORNE, 1987).

***Mormyrops caballus*** Boulenger, 1898

*Mormyrops oudoti* (non Daget, 1954) in LEWIS (1974), DAGET & STAUCH (1963), REID & SYDENHAM (1979), (see BIGORNE, 1987).

**? *Mormyrops engystoma*** Boulenger, 1898

PELLEGRIN (1914) reported this species from middle Chari. A single juvenile specimen is preserved and BLACHE *et al.* (1964) confirmed the identification, but never collected any other specimen. Moreover, BIGORNE (1987) was not able to find PELLEGRIN's specimen in the Paris Museum. Its presence in the Chad basin must be regarded as dubious until further collections prove otherwise.

***Mormyrus rume*** Valenciennes, 1846

? *Mormyrus caschive* (non Linnaeus, 1758) in BLACHE *et al.* (1964).

BLACHE *et al.* (1964), reported both *M. rume* and *M. caschive* from Chad basin, distinguishing the two species by the number of scales on the caudal peduncle : 20-24 for *M. rume*, 26 for *M. caschive*. No specimens were preserved. According to LÉVÊQUE & BIGORNE (1985 b), criteria used by BLACHE *et al.* (1964) are questionable, given the variability of characters observed for different populations of *M. rume*. Consequently, the presence of *M. caschive* in the Chad basin has to be confirmed.



***Petrocephalus ansorgii*** (Boulenger, 1902)

Considered by DAGET (1954) as a subspecies of *P. bane*. Rehabilitated recently by BIGORNE & PAUGY (1991).

***Petrocephalus pallidomaculatus*** Bigorne & Paugy, 1991

A recently described species from Niger.

***Petrocephalus soudanensis*** Bigorne & Paugy, 1991

*P. simus* (non Sauvage, 1879), in DAGET (1954), BLACHE *et al.* (1964).

A recently described species.

***Pollimyrus isidori*** (Valenciennes, 1970)

*Marcusenius gaillardi* Pellegrin, 1909.

*Marcusenius rudebeckii* Svensson, 1933.

*Pollimyrus thuyisi* (non Steindachner, 1870) in DAGET (1954), BLACHE *et al.* (1964), DAGET & ILTIS (1965), (see BIGORNE, 1990 a).

**? *Pollimyrus kingsleyae*** (Günther, 1896)

Reported by HOLLY (1928) from the middle Chari, but according to BLACHE *et al.* (1964) the identification is doubtful, and the species was never recorded again. Not included in the list.

## CHARACIDAE

***Alestes baremoze*** (de Joannis, 1835)

*Alestes baremoze ichadense* Blache *et al.*, 1964.

Paugy (1986) distinguished three subspecies: *A. baremoze baremoze* from the Chad, Niger, Volta, Senegal and Gambia basins; *A. baremoze niloticus* from the Nile and Omo basins; *A. baremoze eburneensis* from river basins in Côte-d'Ivoire.

***Alestes dentex*** (Linnaeus, 1758)

*Alestes sethente* Valenciennes, 1849.

*Alestes dentex dentex* (Linnaeus, 1758).

*Alestes dentex sethente* Valenciennes, 1849.

***Brycinus carolinae*** (Paugy & Lévêque, 1981)

*Alestes carolinae* Paugy & Lévêque, 1981, described from upper Niger.

? *Alestes imberi* (non Peters, 1852) in DAGET (1954).

***Brycinus leuciscus*** (Günther, 1867)

*Alestes nigrilineatus* Svensson, 1933.

***Brycinus longipinnis*** (Günther, 1864)

*Alestes longipinnis* Günther, 1864.

*Alestes chaperi* Sauvage, 1882, (see Paugy, 1982 a).

***Brycinus macrolepidotus*** (Valenciennes, 1849)

*Alestes macrolepidotus* (Valenciennes, 1849).

*Alestes rutilus* Boulenger, 1916, (see PAUGY, 1982 b).

***Brycinus nurse*** (Rüppell, 1832)

*Alestes dageti* Blache & Miton, 1960.

*Alestes bouboni* Roman, 1973 described from the Niger (see PAUGY, 1986).

PAUGY (1986) distinguished two further subspecies: *Brycinus nurse dageti* (BLACHE & MITON, 1960) described from lake Chad as *Alestes dageti*, and *Brycinus nurse nana* (PELLEGRIN, 1935) described as *Alestes nurse* var. *nana* from lake Turkana.

***Hydrocynus brevis*** Günther, 1864

? *Hydrocynus somonorum* (Daget, 1954) described from Niger (see BREWSTER, 1986). According to PAUGY & GUÉGAN (1989), *H. somonorum* could be an hybrid between *H. brevis* and *H. forskahii*.

***Hydrocynus vittatus*** (Castelnau, 1861)

*Hydrocynus lineatus* Bleeker, 1863.

According to BREWSTER (1986), *H. vittatus* and *H. lineatus* are junior synonyms of *H. forskalii* Cuvier, 1819. PAUGY & GUÉGAN (1989) however, confirmed the existence of three distinct species in west Africa, one of them referred to *H. vittatus* which was rehabilitated.

***Micralestes elongatus*** Daget, 1957

*Micralestes brevianalis* Blache & Miton, 1960, (see DAGET, 1966).

*Micralestes aculidens* (non Peters, 1852) in DAGET (1954, 1957), BLACHE *et al.* (1964), (see PAUGY, 1990).

*Micralestes aculidens elongatus* Daget, 1957.

*Virilia elongatus* (Daget, 1957).

***Micralestes humilis*** Boulenger, 1899

*Micralestes stormsi* (non Boulenger, 1902). For POLL (1967), *M. stormsi* is a Zairean species, specimens identified from Chad basin by DAGET (1966) being *M. humilis*.

***Micralestes occidentalis*** (Günther, 1899)

*Micralestes voltae* Roman, 1966, (see PAUGY, 1990).

***Micralestes pabrensis*** (Roman, 1966)

*Phenacogrammus pabrensis* Roman, 1966.

*Virilia pabrensis* (Roman, 1966).

***Rhabdalestes brevidorsalis*** (Pellegrin, 1921)

*Petersius brevidorsalis* Pellegrin, 1921.

*Hemigrammopetersius brevidorsalis* (Pellegrin, 1921).

***Rhabdalestes septentrionalis*** (Boulenger, 1911)

*Petersius loennbergi* Svensson, 1933, (see PAUGY, 1990).

*Rhabdalestes loennbergi* (Svensson, 1933).

*Petersius intermedius* Blache & Miton, 1960, (see PAUGY, 1990).

*Hemigrammopetersius intermedius* (Blache & Miton, 1960).

***Rhabdalestes smykalai*** (Poll, 1967)

*Alestopetersius smykalai* Poll, 1967.

## DISTICHODONTIDAE

**? *Distichodus altus*** Boulenger, 1899

Reported by PELLEGRIN (1914) in the middle

Chari from a single specimen of 165 mm SL. This Zairean species has never been observed subsequently (BLACHE *et al.*, 1964) and its presence must be confirmed. Not included in the list.

***Distichodus rostratus*** Günther, 1864

? *Distichodus niloticus* (non Linnaeus, 1762) in BLACHE *et al.* (1964).

*D. niloticus* was reported from the Chad basin on the basis of a few juveniles collected by HOLLY (1928). BLACHE *et al.* (1964) confirmed this record but no specimens were preserved. Given that *D. niloticus* is similar to *D. rostratus*, its presence in the Chad basin needs to be confirmed.

***Nannocharax ansorgii*** Boulenger, 1911

*Hemigrammocharax polli* Roman, 1966, (see COENEN & TEUGELS, 1989).

***Nannocharax fasciatus*** Günther, 1867

*Nannocharax gobioides* Roman, 1966, (COENEN, *in prep.*).

***Nannocharax latifasciatus*** Coenen & Teugels, 1989

Recently described from the Niger delta, Nigeria.

***Nannocharax occidentalis*** Daget, 1959

*Nannocharax niloticus gracilis* Daget, 1954.

***Neolebias powelli*** Teugels & Roberts, 1990

A recently described species from the Niger delta.

***Neolebias trewavasae*** Poll & Gosse, 1963

*Nannaethiops unitaeniatus* (non Günther, 1871) in BOULENGER (1907), SANDON (1950).

***Neolebias unifasciatus*** Steindachner, 1891

*Nannaethiops unitaeniatus* (non Günther) in BLACHE *et al.* (1964), DAGET (1954, 1957), DAGET & STAUCH (1963), GRAS (1961), JOHNELS (1954), LOWE-McCONNELL (1972), ROBERTS (1967), ROMAN (1966), TREWAVAS & IRVINE (1947).

***Paradistichodus dimidiatus*** (Pellegrin, 1904)

*Distichodus ansorgei* Boulenger, 1911.

*Paradistichodus elegans* Pellegrin, 1922.

*Paradistichodus dimidiatus elegans* Pellegrin, 1922.

*Paradistichodus dimidiatus dimidiatus* (Pellegrin, 1904).

***Phago loricatus*** Günther, 1865

*Phago maculatus* Ahl, 1922, described from the Niger delta (see LÉVÊQUE & BIGORNE, 1987).

CYPRINIDAE

***Barbus ablades*** (Bleeker, 1863)

*Barbus spurelli* Boulenger, 1913, (see LÉVÊQUE, 1983).

***Barbus baudoni*** Boulenger, 1918

*Barbus svenssoni* Johnels, 1954, (see TREWAVAS, 1974).

*Barbus vollae* Hopson, 1965, (see TREWAVAS, 1974).

*Barbus nigeriensis* (non Boulenger, 1902) in DAGET (1957), (see HOPSON & HOPSON, 1965).

***Barbus foutensis*** Lévêque, Teugels & Thys van den Audenaerde, 1988

*Barbus spurelli* (non Boulenger, 1913) in DAGET (1960 b, 1962).

For further details concerning this species, see LÉVÊQUE *et al.* (1988).

***Barbus intermedius intermedius*** Rüppell, 1836

For a full list of synonyms, see BANISTER (1973) and CLOFFA 1.

? ***Barbus kissiensis*** Daget, 1954

Described from the Niger, may be a juvenile form (see LÉVÊQUE, 1989 a).

***Barbus macrops*** Boulenger, 1911

*Barbus francisci* Boulenger, 1916, (see LÉVÊQUE, 1989).

*Barbus gambiensis* Svensson, 1933, (see DAGET, 1954).

*Barbus ablades* (non Bleeker, 1863) in DAGET (1957, 1962), ROMAN (1966), BLACHE *et al.* (1964).

*Barbus deserti* (non Pellegrin, 1909) in DAGET (1954).

*Barbus ablades* var. *deserti* in BLACHE *et al.* (1964).

***Barbus miolepis*** Boulenger, 1902

*Barbus holotaenia* (non Boulenger) in BLACHE *et al.* (1964).

***Barbus neglectus*** Boulenger, 1903

According to BANISTER (1987), *B. neglectus* is a junior synonym of *B. perince*. This synonymy is doubtful, and we maintain the validity of *B. neglectus* as closest to *B. baudoni*, until further information is available (LÉVÊQUE, 1989 b).

***Barbus neumayeri*** Fisher, 1884

*Barbus carpio* Pfeffer, 1896.

***Barbus nigeriensis*** Boulenger, 1902

*Barbus chlorotaenia* (non Boulenger) in BLACHE *et al.* (1964) : specimens from Logone, (see LÉVÊQUE, 1989).

*Barbus weneri* (non Boulenger) in ROMAN (1966), (see LÉVÊQUE, 1989).

***Barbus bynni occidentalis*** Boulenger, 1911

*Barbus occidentalis* Boulenger, 1911.

*Barbus foureaui* Pellegrin, 1919, (see LÉVÊQUE & GUÉGAN, 1990).

*Barbus occidentalis foureaui* Pellegrin, 1919.

*Barbus lancrenonensis* Blache & Miton, 1960, (see TREWAVAS, 1974).

*Barbus batesi* (non Boulenger, 1903) in DAGET (1959 b), BLACHE *et al.* (1964), (see LÉVÊQUE & GUÉGAN, 1990).

***Barbus perince*** Rüppell, 1835

*Barbus wernerii* (non Boulenger) : *partim* in BLACHE *et al.* (1964).

*Barbus lepidus* Pfaff, 1933.

*Barbus donaldsonsmithi* Fowler, 1958, (see LÉVÊQUE, 1989 b).

*Barbus lawrae* Hopson, 1965, (see LÉVÊQUE, 1989 b).

***Barbus pumilus*** Boulenger, 1901

The Chad record (BLACHE *et al.*, 1964) needs to be confirmed, (see LÉVÊQUE, 1989 a).

***Barbus punctitaeniatus*** Daget, 1954

*Barbus yeiensis* (non Johnsen) in BLACHE *et al.* (1964), (see LÉVÊQUE, 1989 b).

***Barbus salessei*** Pellegrin, 1908

*Barbus apogonostomatus* Pellegrin, 1913, (see LÉVÊQUE, 1989 a).

***Barbus stigmatopygus*** Boulenger, 1903

*Barbus wernerii* Boulenger, 1905.

*Barbus gourmansis* Pellegrin, 1934, (see LÉVÊQUE, 1989 a).

*Barbus karoualensis* Blache & Miton, 1960, (see LÉVÊQUE, 1989 a).

? *Barbus trispilopleura* (non Boulenger) in BLACHE *et al.* (1964), (see LÉVÊQUE, 1989 a).

**? *Barilius shariensis*** Fowler, 1949

Described from the Chari river. Could be a Zaïrean form whose presence in the middle Chari would be exceptional according to BLACHE *et al.* (1964).

***Chelaethiops bibie*** (Joannis, 1835)

*Chelaethiops elongatus brevianalis* Daget, 1954, (see HOWES, 1984).

*Chelaethiops brevianalis lerei* Blache & Miton, 1961, (see HOWES, 1984).

*Chelaethiops brevianalis brevianalis* Blache & Miton, 1961, (see HOWES, 1984).

*Chelaethiops elongatus* (non Boulenger) in ROMAN (1966), DAGET (1957), ROBERTS (1967), LOWE MCCONNELL (1972).

***Garra allostoma*** Roberts, 1989

A newly described species from the tributaries of the Niger basin in Cameroun.

***Garra dembeensis*** (Rüppell, 1836)

*Discognathus dembeensis* (Rüppell, 1836).

*Discognathus vinciguerra* Boulenger, 1901.

*Discognathus johnstonii* Boulenger, 1901.

***Garra cf. quadrimaculata*** (Rüppell, 1836)

*Gobio quadrimaculatus* Rüppell, 1836.

*Discognathus quadrimaculatus* (Rüppell, 1836).

*Garra lancrenonensis* Blache & Miton, 1960.

ROBERTS (1990) tentatively concluded that, pending additional material and examination of the syntypes of *G. quadrimaculata*, all *Garra* from Ethiopia

and the Chad basin which have reduced mental discs, may be referred to as *G. cf. quadrimaculata*.

***Garra waterloti*** (Pellegrin, 1935)

*Discognathus waterloti* Pellegrin, 1935

MENON (1964) considered *Garra waterloti* as a junior synonym of *G. ornata* (NICHOLS & GRISCOM, 1917). ROBERTS (1990) discussed this synonymy and proposed that *G. waterloti* should be regarded as valid, until further investigations are possible.

***Labeo coubie*** Rüppell, 1832

*Labeo pseudocoubie* Blache & Miton, 1960, (see REID, 1985).

*Labeo uhamensis* Pellegrin, 1920 described from Shari river, (see REID, 1985).

*Labeo longaensis* Rendahl, 1935 described from Sudan, (see REID, 1985).

*Labeo lereensis* Blache & Miton, 1960 described from upper Benue, (see REID, 1985).

***Labeo forskalii* group**

This group includes different species which, in the area considered, are morphologically very similar (REID, 1985) :

— *L. forskalii* Rüppell, 1835 restricted to Nile basin.

— *L. ogunensis* Boulenger, 1910.

*L. tibestii* Pellegrin, 1919.

*L. toboensis* Svensson, 1933.

Occurs in Chad, Niger-Benue, Volta, Ogun, Oueme, Mono, Senegal, Gambia. But JÉGU & LÉVÊQUE (1984 a) consider *L. ogunensis* as a junior synonym of *L. parvus* (see below) and this species is not included in table I.

— *L. djourae* Blache & Miton, 1960 from Benue river. Close to *L. ogunensis*.

— *L. lukulae* Boulenger, 1902.

*L. chariensis* Pellegrin, 1904.

Occurs in Zaire and Chad basins and could be according to REID (1985) « simply an adult or a large ecotype of *L. parvus* ».

— *L. parvus* Boulenger, 1902. According to REID (1985), this species restricted to Zaire, belongs also to this group. JÉGU & LÉVÊQUE (1984 a) consider *L. ogunensis* (and synonyms) as well as *L. chariensis*, as junior synonyms of *L. parvus*.

The taxonomy of this group is not clear at present, and all species are very close. In such a case, we prefer to consider West African species as a group (*L. parvus* group in table I) until further investigation.

***Labeo niloticus* group**

— *L. niloticus* (Forsskall, 1775).

Occurs in the Nile basin and Lake Turkana. According to REID (1985), this species « most closely resembles *L. horie* with which it has often been confused ».

— *L. horie* Heckel, 1846.  
«Most closely resembles *L. senegalensis* from West Africa but also shares similarities with *L. niloticus*. Occurs sympatrically in the Nile and Lake Turkana with *L. niloticus*» (REID, 1985).

— *L. senegalensis* Valenciennes, 1842.

*L. niloticus brevicauda* Holly, 1928 from the Chari river.

? *L. niloticus* (non Forsskall, 1775) in DAGET (1959b, 1968) & BLACHE *et al.* (1964). According to REID (1985), some dubious records of *L. niloticus* from West Africa (Chad basin, Lake Kainji) require validation. It may well be that these West African records are in fact *L. senegalensis*.

***Leptocypris niloticus*** (de Joannis, 1835)

*Barilius niloticus* (de Joannis, 1835).

*Barilius niloticus niloticus* (de Joannis, 1835), (see LÉVÊQUE & BIGORNE, 1983).

*Barilius niloticus occidentalis* Blache & Miton, 1960, (see LÉVÊQUE & BIGORNE, 1983).

*Barilius niloticus voltae* Roman, 1966, (see LÉVÊQUE & BIGORNE, 1983).

***Mesobola bredoi*** (Poll, 1945)

*Engraulicypris bredoi* Poll, 1945.

*Neobola bredoi* (Poll, 1945), (see HOWES, 1984).

Endemic to Lake Mobutu.

***Raiamas nigeriensis*** (Daget, 1959)

? *Barilius ubangensis* (non Pellegrin, 1901) in DAGET & STAUCH (1963), BLACHE *et al.* (1964), (see LÉVÊQUE & BIGORNE, 1983).

***Raiamas senegalensis*** (Steidachner, 1870)

*Barilius macrostoma* Boulenger, 1913 described from western Ghana, (see LÉVÊQUE & BIGORNE, 1983).

*Barilius loati* Boulenger, 1901 described from Nile, (see LÉVÊQUE & BIGORNE, 1983).

*Barilius senegalensis orientalis* Blache *et al.*, 1964, (see LÉVÊQUE & BIGORNE, 1983).

? *Barilius steindachneri* (non Pellegrin, 1908) in TREWAVAS & IRVINE (1947), (see LÉVÊQUE & BIGORNE, 1983).

? ***Varicorhinus capoetoides*** Pellegrin, 1938

The type comes from material of doubtful origin, collected by J. THOMAS in the Chad and Congo basins. The type locality was assumed to be the Chad basin. Not included in the list.

#### BAGRIDAE

***Bagrus bajad*** (Forsskall, 1775)

*Porcus bayad* (Forsskall, 1775).

*Bagrus bayad* Rüppell, 1829.

*Bagrus bayad macropterus* Pfaff, 1933.

***Bagrus docmak*** (Forsskall, 1775)

*Porcus docmac* (Forsskall, 1775).

*Bagrus docmac* (Forsskall, 1775).

*Bagrus docmac niger* Daget, 1954.

*Bagrus docmac docmac* Blache *et al.*, 1964.

***Clarotes laticeps*** (Rüppell, 1829)

? *Clarotes macrocephalus* (RISCH, *pers. comm.*).

***Chrysichthys auratus*** (Geoffroy Saint Hilaire, 1809)

*Chrysichthys rueppelli* Boulenger, 1907, (see RISCH, 1986).

*Chrysichthys auratus tilhoi* (Pellegrin, 1909), (see RISCH, 1986).

*Chrysichthys filamentosus* Boulenger, 1912, (see RISCH, 1986).

*Chrysichthys auratus longifilis* Pfaff, 1933, (see RISCH, 1986).

*Chrysichthys walkeri* (non Günther, 1899) *partim* : most of the specimens referred to as *C. walkeri* are *C. auratus* or *C. maurus*. *C. walkeri* is only known from type specimens collected in the Pra system (Ghana).

***Chrysichthys maurus*** (Valenciennes, 1839)

*Chrysichthys walkeri* (non Günther) in DAGET (1961a), (see RISCH, 1981, 1986).

***Chrysichthys nigrodigitatus*** (Lacépède, 1803)

*Chrysichthys furcatus* Günther, 1864, (see RISCH, 1986).

***Chrysichthys johnelsi*** Daget, 1959

*Chrysichthys* sp. in Johnels (1954), (see Risch, 1986).

Described from the Gambia river, the species was later collected in different Guinean coastal basins (RISCH & THYS VAN DEN AUDENAERDE, 1985).

***Parauchenoglanis fasciatus*** (Gras, 1960)

*Auchenoglanis fasciatus* Gras, 1960, (see TEUGELS *et al.*, 1990).

#### SCHILBEIDAE

? ***Schilbe marmoratus*** Boulenger, 1911

Reported from the upper Chari by PELLEGRIN (1922), from a single juvenile specimen in poor condition. BLACHE *et al.* (1964) were not able to identify this specimen and the species was never caught again. DE VOS (1983) noted «erroneous locality» for PELLEGRIN's (1922) report. Not included in the list.

***Schilbe mystus*** (Linnaeus, 1758)

*Schilbe palmeri* Svensson, 1933.

***Schilbe niloticus*** (Rüppell, 1829)

*Eutropius niloticus* (Rüppell, 1829).

? *Eutropius mentalis* (non Boulenger) in GRAS (1961), and ROBERTS (1967) (or dubious origin).

#### AMPHILIIDAE

***Amphilius platyichir*** (Günther, 1864)

*Amphilius grammatophorus* Pellegrin, 1913, (see SKELTON, 1984).

***Phractura clauseni*** Daget & Stauch, 1963

*Phractura intermedia* (non Boulenger) in DAGET (1957, 1960), ROBERTS (1967).

## CLARIIDAE

***Clarias agboyiensis*** Sydenham, 1980

*Clarias isheriensis* Sydenham, 1980, (see TEUGELS, 1982 a).

*Clarias angolensis* (non Steindachner, 1866) in TREWAVAS & IRVINE (1947) and LOWE-McCONNELL (1972), (see TEUGELS, 1982 a).

*Clarias liberiensis* (non Steindachner, 1894) in LOWE-McCONNELL (1972), (see TEUGELS, 1982 a).

***Clarias albopunctatus*** Nichols & Lamonte, 1954

*Clarias cf. angolensis* in DAGET & STAUCH (1963).

*Clarias walkeri* (non Günther, 1896) in BLACHE *et al.*, 1964, (see TEUGELS, 1982 a).

***Clarias anguillar*** (Linnaeus, 1758)

*Clarias senegalensis* Valenciennes, 1840, (see TEUGELS, 1982 b).

*Clarias budgetti* Boulenger, 1900, (see TEUGELS, 1982 a).

*Clarias anguillar* *nigeriensis* Pellegrin, 1923, (see TEUGELS, 1982 a).

***Clarias buettikoferi*** Steindachner, 1895

*Clarias macromystax* (non Günther, 1864) in DAGET (1960 b, 1961 a).

***Clarias camerunensis*** Lönnberg, 1895

*Clarias walkeri* Günther, 1896, (see TEUGELS, 1982 a).

***Clarias ebriensis*** Pellegrin, 1920

*Clarias dahomeyensis* Güntert, 1938, (see TEUGELS & THYS VAN DEN AUDENAERDE, 1981).

*Clarias liberiensis* (non Steindachner, 1894) in TREWAVAS & IRVINE (1947).

***Clarias engelseni*** (Johnsen, 1926)

*Allabenchelys engelseni* Johnsen, 1926.

***Clarias gariepinus*** (Burchell, 1822)

*Clarias lazera* Valenciennes, 1840, (see TEUGELS, 1982 b).

*Clarias macracanthus* Günther, 1864, (see TEUGELS, 1982 a).

*Clarias tsanensis* Boulenger, 1902, (see TEUGELS, 1982 a).

***Clarias jaensis*** Boulenger, 1909

*Clarias* sp. in REID & SYDENHAM (1979).

*Clarias aboinensis* Sydenham, 1981, (see TEUGELS, 1982 a).

***Clarias laeviceps dialonensis*** Daget, 1962

*Clarias dialonensis* Daget, 1962

***Clarias laeviceps laeviceps*** Gill, 1863

*Clarias submarginatus* (non Peters, 1882) in DAGET (1954), LOWE-McCONNELL (1972).

*Clarias dumerilii* (non Steindachner) in GRAS (1961).

***Clarias pachynema*** (Boulenger, 1903)

*Clarias amplexicauda* (non Boulenger, 1902) in BLACHE *et al.* (1964), (see TEUGELS, 1982 a).

## MOCHOKIDAE

***Chiloglanis batesii*** Boulenger, 1904

*Chiloglanis micropogon* Poll, 1952, (see ROBERTS, 1989).

***Chiloglanis niger*** Roberts, 1989

Recently described from the Niger basin in Cameroon.

***Chiloglanis occidentalis*** Pellegrin, 1933

*Chiloglanis niloticus waterloti* Daget, 1954.

Close to *Chiloglanis niloticus* from the Nile, and could be the same species. *C. niloticus* was mentioned as probably occurring in the Chad basin by BLACHE *et al.* (1964), but was apparently never collected.

***Chiloglanis voltae*** Daget & Stauch, 1968

*Chiloglanis* sp. in DAGET (1957, 1960 a).

**? *Synodontis frontosus*** Vaillant, 1895

Recorded from the Chad by BLACHE *et al.* (1964) but no specimen was retained. As a result, it is not possible to confirm the identification, which is doubtful according to POLL (1971). Not included in the list.

***Synodontis guttatus*** Günther, 1865

Describing *S. gobroni* from the upper Niger, DAGET (1954) pointed out that it is close to *S. guttatus* known from the lower Niger. The observed differences could result from size differences between the types.

***Synodontis melanopterus*** Boulenger, 1902

*Synodontis budgetti* (non Boulenger, 1911) in POLL (1971), specimens from Oueme river.

***Synodontis membranaceus*** (Geoffroy Saint-Hilaire, 1809)

The type specimen of *Pimelodus membranaceus* (MNHN n° 4197) is in fact a *Brachysynodontis balensoda*, as already mentioned by POLL (1971).

***Synodontis omias*** Günther, 1864

Only known by the skeleton of the holotype and a preserved specimen (BMNH 1900.3.26 : 7). The only difference between *S. omias* and *S. budgetti*, both described from lower Niger, is the more or less developed «basillary membrane» of the maxillary barbels. For POLL (1971) this difference could be regarded as a sexual dimorphism (male : *S. omias*; female : *S. budgetti*) and the two species should then be considered as synonyms. More material is necessary to solve the problem.

***Synodontis schall*** (Bloch & Schneider, 1801)*Synodontis gambiensis* Günther, 1864.*Synodontis gambiensis latifrons* Blache *et al.*, 1964.***Synodontis sorex*** Günther, 1864*Synodontis voltae* Roman, 1975.***Synodontis xiphias*** Günther, 1866.

According to DAGET (1954) and POLL (1971), it is possible that *S. courteli* Pellegrin, 1906 is a junior synonym of *S. xiphias*, but this has not been confirmed yet.

## CYPRINODONTIDAE

***Aphyosemion banforense*** (Seeger, 1982)*Aphyosemion nigrifluvi* Romand, 1982, (see ETZEL & VANDERMISSEN, 1985).***Aphyosemion bualanum*** (Ahl, 1924)*Epiplatys tessmani* (Ahl, 1924) in BLACHE *et al.* (1964).

*A. tessmani* is described from the upper Chari River in Central Africa Republic.

**? *Aphyosemion cameronense*** (Boulenger, 1903)

Known from southern Cameroon and reported from the Chad basin by BLACHE *et al.* (1964). Doubtful identification according to CLOFFA 2 (DAGET *et al.*, 1986). Not included in the list.

***Aphyosemion gardneri*** (Boulenger, 1911)*Aphyosemion clauseni* Scheel, 1975, (see HUBER, 1977).*Aphyosemion biafranum* Kottelat, 1976, (see RADDA & WILDEKAMP, 1978).*Aphyosemion nigerianum meridionale* Kottelat, 1976, (see RADDA & WILDEKAMP, 1978).***Aphyosemion geryi*** Lambert, 1958*Aphyosemion roloffii* (*non* Roloff, 1936) in DAGET (1960 b, 1961 a, 1962 part.).*Aphyosemion liberiense* (*non* Boulenger, 1908) in DAGET (1961 b).*Roloffia etzeli* Berkenkamp, 1979.***Aphyosemion guignardi*** (Romand, 1981)*Aphyosemion liberiense* (*non* Boulenger, 1908) in DAGET (1962).***Aphyosemion petersii*** (Sauvage, 1882)*Epiplatys petersii* (Sauvage, 1882) in GRAS (1961) and TREWAVAS & IRVINE (1947).

Known from shallow brooks and shallow pools in the coastal rainforest of southern Ivory Coast and southwestern Nigeria. Not recorded until now from river basins and therefore not included in table I.

***Aplocheilichthys hutereaui*** Boulenger, 1913*Aplocheilichthys baudoni* (Myers, 1924) in BLACHE *et al.* (1964).***Aplocheilichthys loati*** (Boulenger, 1901)*Haplochilus schoelleri* Boulenger, 1904.*Aplocheilichthys schoelleri* (Boulenger, 1904).***Aplocheilichthys macrophthalmus*** Meinken, 1932*Aplocheilichthys dispar* Gras, 1960, (see CLAUSEN, 1967).*Aplocheilichthys keilacki* Ahl, 1928, (see WILDEKAMP *et al.*, 1986).***Aplocheilichthys nimbaensis*** (Daget, 1948)*Aplocheilichthys macrurus* (*non* Boulenger, 1904) in DAGET (1954).***Aplocheilichthys normani*** Ahl, 1928*Aplocheilichthys gambiensis* Svensson, 1933, in BLACHE *et al.* (1964), DAGET (1954, 1960, 1961 b, 1962), DAGET & STAUCH (1963), GRAS (1961), JOHNELS (1954), ROMAN (1966).*Micropanchax macrurus manni* Schultz, 1942, (see CLAUSEN, 1967).***Aplocheilichthys schioetzi*** Scheel, 1968*Aplocheilichthys macrurus* (*non* Boulenger, 1904) in DAGET (1957).*Aplocheilichthys terofali* (Berkenkamp & Etzel, 1981)***Aplocheilichthys pfaffi*** Daget, 1954*Aplocheilichthys longicauda* Blache & Miton, 1960 in BLACHE *et al.* (1964).*Aplocheilichthys schoelleri* (*non* Boulenger, 1904) in BLACHE *et al.* (1964).*Aplocheilichthys kingi* (*non* Boulenger, 1901) in BLACHE *et al.* (1964).***Epiplatys bifasciatus*** (Steindachner, 1881)*Panchax steindachneri* Svensson (1933).*Epiplatys bifasciatus taeniatus* (Pfaff, 1933) in DAGET (1954, 1957, 1961 a, b), GRAS (1961), LAMBERT (1958), ROMAN (1966), BLACHE *et al.* (1964).*Epiplatys steindachneri* (Svensson, 1933) in JOHNELS (1954).***Epiplatys grahami*** (Boulenger, 1911)*Epiplatys nigromarginatus* Schultz, 1937, (see SCHEEL, 1968).*Epiplatys ndelensis* Fowler, 1949, (see BLACHE *et al.*, 1964).***Epiplatys lamottei*** Daget, 1954*Epiplatys fasciolatus lamottei* Daget, 1954.***Epiplatys spilargyreus*** (Duméril, 1861)*Panchax senegalensis* (Steindachner, 1870) in SVENSSON (1933).*Epiplatys senegalensis* (Steindachner, 1870) in DAGET (1954, 1957, 1961 a), DAGET & STAUCH (1963), JOHNELS (1954), ROBERTS (1967), ROMAN (1966), TREWAVAS & IRVINE (1947).*Haplochilus marnoi* Steindachner, 1881***Fundulosoma thierryi*** Ahl, 1924*Aphyosemion walkeri* (*non* Boulenger, 1911) in DAGET (1954, 1957, 1960 a).

*Nothobranchius walkeri* (non Boulenger, 1911) in LOWE-McCONNELL (1972), ROMAN (1966), ROBERTS (1967).

***Procatopus aberrans*** Ahl, 1927

*Procatopus gracilis* Clausen, 1959, in REID & SYDENHAM (1979).

***Pronothobranchius kiyawensis*** (Ahl, 1928)

*Nothobranchius kiyawensis* Ahl, 1928  
*Fundulus gambiensis* Svensson, 1933  
*Nothobranchius gambiensis* (Svensson, 1933) in BLACHE *et al.* (1964), JOHNELS (1954).

CHANNIDAE

***Parachanna obscura*** (Günther, 1861)

*Ophiocephalus obscurus* Günther, 1861.  
*Parophiocephalus obscurus* (Günther, 1861).

CICHLIDAE

***Astatotilapia bloyeti*** (Sauvage, 1883)

*Hemichromis bloyeti* Sauvage, 1883.  
*Haplochromis wingatii* (non Boulenger, 1902) in BLACHE *et al.*, (1964), DAGET (1954?) (see GREENWOOD, 1971, 1979).

***Chromidotilapia guntheri*** (Sauvage, 1882)

*Pelmatochromis guentheri* (Sauvage, 1882).

***Gobiocichla wonderi*** Kanazawa, 1951

*Labrochromis polli* Daget, 1952, (see DAGET, 1954).

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

*Tilapia monodi* Daget, 1954, (see TREWAVAS, 1983).

*Tilapia lemassoni* Blache & Miton, 1960, (see TREWAVAS, 1983).

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

*Tilapia nilotica* (Linnaeus, 1758).

***Pelvicachromis pulcher*** (Boulenger, 1901)

*Pelmatochromis pulcher* Boulenger, 1901.  
*Pelmatochromis aureocephalus* Meinken, 1960, (see UFERMAN *et al.*, 1987).  
*Pelmatochromis camerunensis* Paulo, 1968, (see THYS VAN DEN AUDENAERDE, 1968 a).

***Pelvicachromis taeniatus*** (Boulenger, 1901)

*Pelmatochromis taeniatus* Boulenger, 1901.  
*Pelmatochromis klugei* Meinken, 1960 (see THYS VAN DEN AUDENAERDE, 1968 a).

? ***Pterochromis congicus*** (Boulenger, 1897)

*Pelmatochromis congicus* Boulenger, 1897.  
 A Zairean species recorded from the Chari river by PELLEGRIN (1922). never reported since.

***Sarotherodon galilaeus*** (Linnaeus, 1758)

*Sparus galilaeus*, Linnaeus, 1758.  
*Tilapia galilaea* (Linnaeus, 1758).

***Sarotherodon melanotheron heudeloti*** (Duméril, 1859)

*Tilapia heudeloti* Duméril, 1859, (see TREWAVAS, 1983) in DAGET (1962, 1969 b).

*Tilapia multifasciata macrostoma* Pellegrin, 1941, (see TREWAVAS, 1983).

***Sarotherodon melanotheron melanotheron*** Rüppell, 1852

*Tilapia heudeloti* (non Duméril, 1859) in GRAS (1961), TREWAVAS & IRVINE (1947), (see TREWAVAS, 1983).

***Steatocranus irvinei*** (Trewavas, 1943)

*Gobiocichla irvinei* Trewavas, 1943.  
*Leptotilapia irvinei* (Trewavas, 1943) in TREWAVAS & IRVINE (1947).

***Thoracochromis albertianus*** (Regan, 1929)

*Haplochromis albertianus* Regan, 1929.  
***Thoracochromis avium*** (Regan, 1929)  
*Haplochromis avium* Regan, 1929.  
*Haplochromis lanceolatus* David & Poll, 1937, (see GREENWOOD, 1979).

***Thoracochromis loati*** (Greenwood, 1971)

*Haplochromis loati* Greenwood, 1971.  
***Thoracochromis macconneli*** (Greenwood, 1974).

*Haplochromis macconneli* Greenwood, 1974.  
***Thoracochromis mahagiensis*** (David & Poll, 1937)

*Haplochromis mahagiensis* David & Poll, 1937.  
***Thoracochromis rudolfianus*** (Trewavas, 1933)

*Haplochromis rudolfianus* Trewavas, 1933.  
***Thoracochromis turkanae*** (Greenwood, 1974).

***Thoracochromis wingatii*** (Boulenger, 1902)

*Haplochromis wingatii* Boulenger, 1902.  
*Paratilapia wingatii* (Boulenger, 1902).  
 According to GREENWOOD (1971, 1979), the species is restricted to the upper Nile and probably also, lake Mobutu.

***Thysochromis ansorgii*** (Boulenger, 1901)

*Pelmatochromis ansorgii* Boulenger, 1901.  
*Thysia ansorgii* (Boulenger, 1901).  
*Pelmatochromis arnoldi* Boulenger, 1912, (see LOISELLE & WELCOMME, 1972).  
*Thysia arnoldi* (Boulenger, 1912).  
*Pelmatochromis annectens* Boulenger, 1913, (see THYS VAN DEN AUDENAERDE, 1968 a).  
*Thysia annectens* (Boulenger, 1913).

***Tilapia dageti*** Thys van den Audenaerde, 1971

*Tilapia melanopleura* (non Duméril, 1859) in DAGET (1954, Niger specimens), DAGET (1957, 1959 a, 1961 b), DAGET & STAUCH (1963), *partim* in BLACHE *et al.* (1964), ROMAN (1966), (see THYS VAN DEN AUDENAERDE, 1971).

***Tilapia guineensis*** (Bleeker, 1862)

*Chromis guineensis* Bleeker, 1862.

*Tilapia melanopleura* (non Duméril, 1859) in JOHNELS (1954), SVENSSON (1933), TREWAVAS & IRVINE (1947, Wenchi specimens), DAGET (1961 b, Senegal specimens), BOESEMAN (1963), (see THYS VAN DEN AUDENAERDE, 1968 b).

*Tilapia zillii* (non Gervais, 1853) in TREWAVAS & IRVINE (1947), (see THYS VAN DEN AUDENAERDE, 1968 b).

*Tilapia mariae* Boulenger, 1899

*Tilapia meeki* Pellegrin, 1911.

*Tilapia zillii* (Gervais, 1848)

*Acerina zillii* Gervais, 1848.

*Tilapia melanopleura* Duméril, 1859, (see Thys van den Audenaerde, 1968 b).

*Tilapia sparrmani* subsp. *multiradiata* Holly, 1928.

*Tilapia multiradiata* Holly, 1928 in BLACHE *et al.* (1964), (see THYS VAN DEN AUDENAERDE, 1968 b).

*Tilapia shariensis* Fowler, 1949.

*Tylochromis jentinki* (Steindachner, 1894)

*Paratilapia* (*Pelmatochromis*) *jentinkii* Steindachner, 1894.

*Tilapia jentinki jentinki* : *partim* in DAGET (1954), (see STIASSNY, 1989).

*Tylochromis sudanensis* Daget, 1954

*Tylochromis jentinki sudanensis* Daget, 1954.

*Tylochromis lateralis* (non Boulenger) in BLACHE *et al.* (1964), (see STIASSNY, 1989). A specimen mentioned from Logone but not preserved. BLACHE *et al.* (1964) were not able to collect any specimen.

*Tylochromis jentinki* (non Steindachner) in REID & SYDENHAM (1979), (see STIASSNY, 1989).

#### GOBIIDAE

Typically brackish water species are not included here.

*Chonophorus lateristriga* (Duméril, 1856)

*Gobius lateristriga* Duméril, 1856.

*Gobius guineensis* Peters, 1877.

*Awaous guineensis* (Peters, 1877).

*Chonophorus guineensis* (Peters, 1877).

#### ELEOTRIDAE

*Bostrychus africanus* (Steindachner, 1880)

*Eleotris africana* Steindachner, 1880.

*Hanno africanus* (Steindachner, 1880).

*Hannoichthys africana* (Steindachner, 1880).

*Eleotris camerunensis* Lönnberg, 1895.

Reported from Niger-Benue confluence according to REID & SYDENHAM (1979).

*Dormitator lebretonis* (Steindachner, 1870)

*Batanga lebretonis* (Steindachner, 1870).

*Eleotris lebretonis* (Steindachner, 1870).

*Kribia nana* (Boulenger, 1901)

*Eleotris nana chevalieri* Pellegrin, 1923.

*Kribia nana chevalieri* (Pellegrin, 1923).

*Kribia nana elongata* Blache & Miton, 1960.

#### ANABANTIDAE

? *Ctenopoma congicum* Boulenger, 1887

Reported by PELLEGRIN (1919, 1922) from the upper Chari. BLACHE *et al.* (1964) confirmed the identification but never caught the species.

*Ctenopoma kingsleyae* Günther, 1896

*Anabas argentoventer* Ahl, 1922, (see NORRIS & TEUGELS, 1990).

*Ctenopoma lineatum* (Nichols, 1923)

Described from the Gribingui river (upper Chari basin), the species was considered as a synonym of *C. nanum* by MATTHES (1964) and rehabilitated by NORRIS *et al.* (1988).

*Ctenopoma muriei* (Boulenger, 1904)

*Anabas ctenolis* Boulenger, 1919, (see NORRIS *et al.*, 1988).

*Anabas houyi* Ahl, 1926 (see BLACHE *et al.*, 1964).

*Ctenopoma nebulosum* Norris & Teugels, 1990

Recently described from the Niger delta.

*Ctenopoma petherici* Günther, 1844

*Anabas caudomaculatus* Ahl, 1927, (see BLACHE *et al.*, 1964).

*Anabas petherici chadensis* Fowler, 1936 (see BLACHE *et al.*, 1964).

#### MASTACEMBELIDAE

*Aethiomastacembelus liberiensis* (Boulenger, 1898)

*Mastacembelus liberiensis* Boulenger, 1898.

*Caecomastacembelus liberiensis* (Boulenger, 1898).

*Mastacembelus reticulatus* Boulenger, 1911.

*Aethiomastacembelus nigromarginatus* (Boulenger, 1898)

*Mastacembelus nigromarginatus* Boulenger, 1898.

*Caecomastacembelus cryptacantus* (Günther, 1867)

*Mastacembelus cryptacanthus* Günther, 1867.

*Mastacembelus longicauda* Boulenger, 1907, (TRAVERS, *pers. comm.*).

*Caecomastacembelus decorsei* (Pellegrin, 1919)

*Mastacembelus decorsei* Pellegrin, 1919.

*Mastacembelus loennbergi* (non Boulenger, 1916), *partim* according to TRAVERS (*pers. comm.*). In BLACHE *et al.* (1964), Lewis (1974).

*Mastacembelus* sp. in DAGET (1954).

#### TETRAODONTIDAE

*Tetraodon lineatus* Linnaeus, 1758

*Tetraodon fahaka* Rüppell, 1829.

*Tetraodon fahaka strigosus* Bennett, 1834.



## BRIEF COMMENTS ON FISH COMPOSITION AND DISTRIBUTION IN THE DIFFERENT BASINS

### Sénégal

From the data available, the fish fauna seems very similar in the Senegal and the upper Niger, except for the upper Bafing tributary where a number of cyprinids endemic to the Fouta Djallon area are commonly collected : *Barbus salessei*, *B. dialonensis*, *B. ditinensis*, *B. foutensis*, *B. niokoloensis*, *B. raimbaulti*, *B. petitjeani*. Other Guinean species also present in the Bafing but not recorded in other parts of the Senegal basin are : *Heterobranchius isopterus*, *Clarias laeviceps*, *Amphilius platyichir*, *Amphilius rheophilus*, *Paramphilius trichomycteroides*, *Synodontis lourei*, *Tilapia louka*, *Aphyosemion nigrifluvi*, *Aphyosemion guignardi*, *Aplocheilichthys lamberti*.

According to DAGET (1962), a series of falls and rapids along the Bafing River present an ecological barrier which prevents the Sudanese species inhabiting the lower reaches of the river, from colonizing the upper reaches. The upper Bafing could then be considered as a refuge zone, in so far that Guinean species are able to maintain relict populations. Indeed, DAGET (1962) has stressed the scarcity of predators which are only represented by *Raiamas senegalensis* and a few catfish. Only two endemic species are known from Senegal river (*Barbus ditinensis*, *Synodontis lourei*).

### Gambia

According to DAGET (1960 b), the upper Gambia (about 220 km length), running on the northern slope of the Fouta Djallon, is mainly colonized by Guinean species e.g. *Brienomyrus brachyistius*, *Barbus niokoloensis*, *Barbus salessei*, *Chrysiichthys maurus*, *Amphilius platyichir*, *Amphilius rheophilus*, *Aphyosemion geryi*, *Aplocheilichthys lamberti*, *Kribia nana*, *Clarias buettikoferi*. This guinean fauna, is partly similar to the fish fauna occurring in the Bafing River (Senegal basin), and is isolated by large waterfalls which prevent the ascent of that Nilo-sudan fish fauna already colonizing the middle Gambia.

The fauna of the middle Gambia itself is Sudanese, but impoverished when compared to adjacent Senegal and Niger basins. It should be noted that widespread species such as *Lates niloticus*, *Chrysiichthys auratus*, *Brycinus macrolepidotus* and *Schilbe niloticus* also occurring in the upper guinean zone, were never reported from the Gambia. That is similarly the case for other species common in Nilo-Sudan rivers i.e. : *Micralestes aculidens*, *Distichodus enycephalus*, *Nan-*

*nocharax fasciatus*, *Citharinus latus*, *Barbus occidentalis*, *Leptocypris niloticus*, *Auchenoglanis biscutatus*, *Clarotes laliceps*, *Bagrus bajad*, *Bagrus docmak*, *Clarias gariepinus*, *Oreochromis niloticus*, *Tetraodon lineatus*. The only endemic recognized at present is *Parailia spiniserrata* (replacing *Parailia pellucida*).

### Niger

The Niger exhibits the most diverse fish fauna of all Nilo-sudan rivers. Some Guinean species were recorded in the headwaters, such as *Barbus petitjeani*, *Barbus foutensis*, *Amphilius platyichir*, *Amphilius rheophilus*, *Chiloglanis occidentalis*. The lower Niger is also colonized by a number of species belonging to the lower Guinean zone : i.e. *Erpetoichthys calabaricus*, *Brienomyrus longianalis*, *Isichthys henryi*, *Pollimyrus budgetti*, *Phractolaemus ansorgii*, *Arnoldichthys spilopterus*, *Clarias agboyiensis*, *Clarias buthupogon*, *Clarias camerunensis*, *Gymnallabes typus*, *Phractura ansorgii*, *Eutropiellus buffei*, *Synodontis guttatus*, *Sarotherodon melanotheron melanotheron*, *Parachanna africana*, *Polycentropsis abbreviata*.

In the Benue River, the fish fauna is fairly similar to that of the middle Niger. However, one should note the occurrence of two species, (*Phractura clauseni* and *Chiloglanis voltae*) which, until now, have never been collected from the upper and middle Niger, and were previously known from the Volta basin. Furthermore, a freshwater fish fauna known from coastal and lower Niger, ascends into the lower Benue and probably also in part of the middle Niger : i.e., *Panlodon buchholzi*, *Gnathonemus petersii*, *Marcusenius abadii*, *Pollymyrus adspersus*, *Barbus aboinensis*, *Barbus chlorotaenia*, *Phago loricatus* (abundant also in Kainji lake according to LEWIS, 1974), *Clarias macromystax*, *Clarias jaensis*, *Synodontis melanopterus*, *Arius gigas*, *Procatopus aberrans*. A distinctive feature of the Benue, is the presence of species of marine origin which are otherwise not found as far inland i.e. *Arius heudeloti*, *Arius gigas* (known from Mayo Kebi), *Polydactylus quadrifilis*, *Trachynotus gorensis*.

Two species, *Dasyatis garouaensis* and *Dagetichthys lakdoensis*, have been described from the Benue, and REID & SYDENHAM (1979) discussed the zoogeographic significance of their presence. *D. garouaensis* has also been collected in the Cross river, Sanaga and Lagos lagoon, and DAGET & STAUCH's (1963) hypothesis that this species was isolated during the last prequaternary marine transgression, is doubtful. Although *D. lakdoensis* is presently known only from the Benue, REID & SYDENHAM (1979) believe that «specimens of this species should be compared with representatives of the numerous genera and species of Soleinae found on the West African coast».

There are few endemic species. *Labeo djourae* belong to the *Labeo forskalii* group (REID, 1985) and is closest to *L. ogunensis*-*L. parvus* (it could be an ecophenotype). *Chiloglanis benuensis* has only been recorded in the Benue but, «in view of the present state of knowledge of these groups, it would be unwise to place much emphasis on particular specific determinations» (REID & SYDENHAM, 1979).

Compared with Chad and Senegal, there are many more endemic species in the Niger : i.e., *Mormyrops oudoti*, *Pollimyrus petricolus*, *Brycinus carolinae*, *Barbus zalbiensis*, *Bagrus filamentosus*, *Garra trewavasae*, *Garra allostoma*, *Labeo djourae*, *Synodontis gobroni*, *Synodontis budgetti*, *Synodontis guttatus*, *Synodontis omias*, *Synodontis vermiculatus*, *Synodontis xiphias*, *Synodontis resupinatus*, *Chiloglanis niger*, *Chiloglanis benuensis*, *Aphyosemion arnoldi*, *Gobiocichla wonderi*, *Leptoglanis camerunensis*.

### Volta

The fish fauna is very similar to that of the Niger, with which exchanges probably occurred during the Holocene. Eleven species are known to be endemics : *Irvineia voltae*, *Leptotilapia irvinei*, *Synodontis arnoldi*, *Synodontis macrophthalmus*, *Synodontis velifer*, *Brycinus luleus*, *Phenacogrammus pabrensis*, *Barbus bawkuensis*, *Barbus guildi*, *Barbus parablales*. Some of these species are of doubtful status.

### Mono, Oueme, Ogun

The fish fauna is an impoverished Nilo-sudan one, with some typical species lacking, e.g. *Polypterus bichir*, *Alestes baremoze*, *Alestes dentex*, *Hydrocynus brevis*, *Labeo coubie*, *Distichodus engycephalus*, *Distichodus brevipinnis*, etc. Conversely, some species occurring in the so-called Guinean zone (ROBERTS, 1975), including the lower Niger, are present : i.e. *Erpetoichthys calabaricus*, *Polypterus ansorgii*, *Pantodon buchholzi*, *Isichthys henryi*, *Pollimyrus adspersus*, *Clarias ebiensis*, *Clarias macromystax*, *Synodontis melanopterus*, *Aphyosemion filamentosum*, *Foerschichthys flavipinnis*, *Thysochromis ansorgii*, *Parachanna africana*, *Polycentropsis abbreviata*.

### Chad

The faunal similarity between the Chad, Nile and Niger is well-known. However the number of species recorded, based on recent taxonomic works, is somewhat lower than that expected by BLACHE *et al.* (1964). Synonymies were proposed for number of species, but some further species, reported from the Chari river should also be considered as doubtful

until further information become available. This should not imply that their presence is not possible, but rather that the previous records require confirmation with new material. In fact, many of these dubious species are known only from single, sometimes juvenile, specimens. Furthermore, the material is sometimes in poor condition, its origin possibly uncertain, or its identification requiring further validation. These species were discussed above, but we should list the nilotic species *Distichodus niloticus*, *Synodontis frontosus*, *Labeo niloticus* as well as the Zairean species *Mormyrops engystoma*, *Pollimyrus kingsleyae*, *Distichodus allus*, *Ctenopoma congicum*, *Pelmatochromis congicus*, *Nannochromis dimidiatus*. Most of the supposed Zairean species were caught in the upper Chari tributaries, which have not been very well investigated and where either the above species, or new records, could be expected. More collections are therefore necessary in order to clarify the possible Zairean affinities of the fish fauna of the upper reaches of the Chari. A possible river capture between the Chad basin and the Ubangi can be illustrated by the distribution pattern of certain species : e.g. *Clarias albopunctatus*, *Tilapia zillii*, *Sarotherodon galilaeus*.

### Omo River and Lake Turkana

The Nilo-sudan affinity of the Lake Turkana fish fauna has already been emphasized. Thirty of its species are spread all over the Nilo-sudan region, eight are found in the Nile only, and ten species are endemics, i.e. *Alestes ferox*, *Alestes minutus*, *Barbus turkanae*, *Neobola boltegoi*, *Neobola stellae*, *Aplocheilichthys jeanneli*, *Aplocheilichthys rudolfianus*, *Haplochromis macconelli*, *Haplochromis rudolfianus*, *Haplochromis turkanae*, *Lates longispinis*.

The paucity of Mormyridae in Lake Turkana has generally been attributed to the relatively high salinity (over 3000  $\mu$ S), which is expected to have important effects on the proper functioning of these fishes' electric organs. BEADLE (1981) stated that this hypothesis is not demonstrated but there is much field evidence indicating that mormyrids tend to disappear from fresh waters when the salinity increases.

### Nile

The list, given in table I, includes lake Mobutu and lake Tana. Contrary to other major nilotic lakes, such as Victoria, Kioga, Edward and George which harbour highly endemic faunas (GREENWOOD, 1976 b), Lakes Mobutu and Tana are not isolated from the Nile by barriers which are impassable to fishes.

Lake Mobutu shares most of its fish fauna with the Nile, although a few riverine species apparently do not colonize the lake (GREENWOOD, 1976 b). Conversely, a few endemic species are known from Lake Mobutu : i.e. *Lates macrophthalmus*, *Mesobola bredoi*, *Thoracochromis albertianus*, *Thoracochromis mahagiensis*, *Thoracochromis avium*. *Clarias hilli* recorded in lake Mobutu (TEUGELS, 1986) is a Zairean species.

The fish fauna of lake Tana, which is not well studied, is a truncated Nile type fauna with a few endemic species. The cobitid *Nemacheilus abryssinicus* is the only representative of this Euro-asiatic genus to occur in Africa. *Barbus humilis* and *B. pleurogramma* are restricted to Lake Tana. Other species, although not endemic to Lake Tana, do not occur in the main Nile. That is the case for *Varicorhinus beso*, *Barbus intermedius*, *Barbus trispilopleura*, *Garra quadrimaculata*.

In the Nile itself, there are some endemics or at least reputed endemics. Some of these species are very similar to western species and it remains to be proven if they are indeed close relatives (vicariant species) or in fact synonyms. That is the case for : *Mormyrus caschive*, close to *M. rume*; *Hippopotamyrus harringtoni* possibly related to *H. pictus* according to LÉVÊQUE & BIGORNE (1985 a); *Labeo horie* and perhaps *L. niloticus* which belong to the same group as *L. senegalensis*; the former «most closely resembles *L. senegalensis*» according to REID (1985); *Barbus neglectus*, close to *B. baudoni* (see LÉVÊQUE, 1989); *B. yeiensis*, close to *B. punctilaeniatus* (see

LÉVÊQUE, 1989); *Synodontis khartoumensis*, close to *S. schall* and/or *S. frontosus* (POLL, 1971); *Chiloglanis niloticus* closely related to *C. occidentalis*. *Clarias engelseni*, known from only a few specimens and possibly a subspecies of *Clarias liocephalus* according to TEUGELS (1986), is present in the upper reaches of the Nile basin and part of the Zaïre system.

The remaining species are only known from the Nile : *Mormyrus niloticus*, *Petrocephalus keatingi*, *Pollimyrus petherici*, *Barbus tongaensis*, *Synodontis caudovillatus*, *S. serratus*, *Aplocheilichthys kingi*, *Thoracochromis loati* and *T. wingatii*. *Protopterus aethiopicus* (subspecies *P. aethiopicus aethiopicus*) and *Neolebias trewavasae* occur in the Nile and Zaïre systems and have been recorded westwards. A few other species occur in the Nile and lake Turkana : i.e. *Mormyrus kannume*, *Labeo horie*, *Labeo niloticus* and *Barbus hynni* which could be considered as closely related to the western *B. occidentalis* (LÉVÊQUE & GUÉGAN, 1989).

#### ACKNOWLEDGEMENTS

This study is part of PEDALO programme (Poissons d'eau douce d'Afrique de l'Ouest) financed by ORSTOM and PIREN (CNRS). The authors are indebted to the British Museum, the Musée royal d'Afrique centrale and the Museum national d'Histoire naturelle de Paris, for access to the collections and research facilities.

Manuscrit accepté par le Comité de Rédaction le 16 décembre 1990

#### REFERENCES

- ABU GIDEIRI (Y. B.), 1967. — Fishes of the Blue Nile between Khartoum and Roseires. *Rev. Zool. afr.*, 76 (3-4) : 345-348.
- BANISTER (K. E.), 1973. — A revision of the large *Barbus* (Pisces, Cyprinidae) of East and Central Africa. *Bull. Br. Mus. nat. Hist. (Zool.)*, 26 (1) : 1-148.
- BANISTER (K. E.), 1973. — The *Barbus perince-Barbus neglectus* problem and a review of certain Nilotic small *Barbus* species (Teleostei, Cypriniformes, Cyprinidae). *Bull. Br. Mus. nat. Hist. (Zool.)*, 53 (2) : 115-138.
- BEADLE (L. C.), 1981. — The inland water of tropical Africa. Second edition. Longman, 475 p.
- BIGORNE (R.), 1987. — Le genre *Mormyrops* (Pisces, Mormyridae) en Afrique de l'Ouest. *Rev. Hydrobiol. trop.*, 20 (2) : 145-164.
- BIGORNE (R.), 1989. — Les genres *Brienomyrus* et *Isichthys* (Pisces, Mormyridae) en Afrique de l'Ouest. *Rev. Hydrobiol. trop.*, 22 (4) : 317-338.
- BIGORNE (R.), 1990 a. — Révision des espèces du genre *Pollimyrus* en Afrique de l'Ouest (Teleostei, Mormyridae). *Rev. Hydrobiol. trop.*, 23 (4) : 313-327.
- BIGORNE (R.), 1990 b. — Mise en synonymie de *Gnathonemus brevicaudatus* Pellegrin, 1919 avec *Gnathonemus petersii* Günther, 1862 (Teleostei, Mormyridae). *Cybbium*, 14 (2) : 125-129.
- BIGORNE (R.) & PAUGY (D.), 1991. — Note sur la systématique des *Petrocephalus* (Teleostei : Mormyridae) d'Afrique de l'Ouest. *Ichthyol. Explor. Freshwaters*, 2 (1) : 1-30.
- BLACHE (J.), MITON (F.), STAUCH (A.), ILTIS (A.) & LOUBENS (G.), 1964. — Les poissons du bassin du Tchad et du
- Rev. Hydrobiol. trop.* 24 (2) : 131-154 (1991).

- bassin adjacent du Mayo-Kebbi. Étude systématique et biologique. *Mém. ORSTOM*, 4 (2) : 485 p.
- BOESEMAN (M.), 1963. — An annotated list of fishes from the Niger Delta. *Zool. Verh. Leiden*, 61 : 3-48.
- BOUOU (C. A.) & TEUGELS (G. G.), 1985. — Révision systématique du genre *Parachanna* Teugels & Daget, 1984 (Pisces, Channidae). *Rev. Hydrobiol. trop.*, 18 (4) : 267-280.
- BOULENGER (G.), 1901. — On the fishes collected by Dr W. J. Anson in the Niger delta. *Proc. Zool. Soc. Lond.*, 1 : 4-10.
- BOULENGER (G.), 1902. — Second account of the fishes collected by Dr W. J. Anson in the Niger delta. *Proc. Zool. Soc. Lond.*, 2 : 324-330.
- BOULENGER (G.), 1907. — Zoology of Egypt. The fishes of the Nile published for the Egyptian Government. 2 vol., London, 578 p.
- BREWSTER (B.), 1986. — A review of the genus *Hydrocynus* Cuvier 1819 (Teleostei : Characiformes). *Bull. Br. Mus. nat. Hist. (Zool.)*, 50 (3) : 163-206.
- CLAUSEN (H. S.), 1967. — Tropical old world Cyprinodonts. Akademisk Forlag, Copenhague, 64 p.
- COENEN (E.) & TEUGELS (G. G.), 1989. — A new species of *Nannocharax* (Pisces, Distichodontidae) from South-East Nigeria and West Cameroon, with comments on the taxonomic status of *Hemigrammocharax polli* Roman, 1966. *Cybiurn*, 13 (4) : 311-318.
- DAGET (J.), 1950. — Poissons d'eau douce de la région côtière du Togo et du Dahomey. *Notes afr.*, 46 : 57-59.
- DAGET (J.), 1954. — Les poissons du Niger supérieur. *Mém. I.F.A.N.*, 36 ; 391 p.
- DAGET (J.), 1956. — Le parc national du Niokolo-Koba. VII-Poissons. *Mém. I.F.A.N.*, 48 : 167-169.
- DAGET (J.), 1957. — Les poissons. In : Les eaux et les poissons de Haute-Volta. *Mém. I.F.A.N.*, 50 : 95-169.
- DAGET (J.), 1959 a. — Les poissons du Niger supérieur (première note complémentaire). *Bull. I.F.A.N.*, 21 (2) : 664-688.
- DAGET (J.), 1959 b. — Note sur les poissons du Borkou-Ennedi-Tibesti. *Trav. Inst. Rech. sahar., Alger*, 18 : 173-181.
- DAGET (J.), 1960 a. — Poissons de la Volta Noire et de la Haute Comoé (mission d'Aubenton-Arnoult, oct.-déc. 1959). *Bull. Mus. natn. Hist. nat., Paris*, (2) 32 (4) : 320-330.
- DAGET (J.), 1960 b. — La faune ichthyologique du bassin de la Gambie. *Bull. I.F.A.N.*, 22 (2) : 610-619.
- DAGET (J.), 1961 a. — Le parc national du Niokolo-Koba. Fasc. 2 (35) : Poissons. *Mém. I.F.A.N.*, 62 : 325-372.
- DAGET (J.), 1961 b. — Contribution à la connaissance de la faune du fleuve Sénégal. Poissons du Baoulé et du Bakoy. *Bull. Mus. natn. Hist. nat., Paris*, (2) 32 (6) : 506-512.
- DAGET (J.), 1962. — Les poissons du Fouta Djallon et de la Basse Guinée. *Mém. I.F.A.N.*, 65 : 210 p.
- DAGET (J.), 1966. — Note sur les *Micralestes* du bassin tchadien (Pisces, Characidae). *Bull. Mus. natn. Hist. nat., Paris*, (2) 38 (2) : 129-131.
- DAGET (J.), 1968. — Contribution à l'étude des eaux douces de l'Ennedi. IV-Poissons. *Bull. I.F.A.N.*, (A) 30 (4) : 1582-1589.
- DAGET (J.), 1969 a. — Sur la présence de *Clarias albopunctatus* (Pisces, Clariidae) dans le bassin tchadien. *Cah. ORSTOM, sér. Hydrobiol.*, 3 (2) : 75-79.
- DAGET (J.), 1969 b. — Poissons d'eau douce du Sénégal récoltés par MM. A. Villiers et C. Reizer. *Bull. Mus. natn. Hist. nat., Paris*, 40 (6) : 1114-1115.
- DAGET (J.), GOSSE (J. P.) & THYS VAN DEN AUDENAERDE (D. F. E.), Eds., 1984. — CLOFFA 1. Check-list of the freshwater fishes of Africa. *MRAC, ORSTOM*, Volume 1 : 410 p.
- DAGET (J.), GOSSE (J. P.) & THYS VAN DEN AUDENAERDE (D. F. E.), Eds., 1986. — CLOFFA 2 — Check-list of the freshwater fishes of Africa. *ISNB, MRAC, ORSTOM*, Volume 2 : 520 p.
- DAGET (J.) & STAUCH (A.), 1963. — Poissons de la partie camerounaise du bassin de la Bénoué. *Mém. I.F.A.N.*, 68 : 85-107.
- DE Vos (L.), 1983. — Systematische, morfologische, osteologische en zoogeografische revisie van de afrikaanse Schilbeidae (Pisces, Siluriformes). Thesis Katholieke Universiteit Leuven, 327 pp.
- DE Vos (L.), 1984. — Preliminary data of a systematic revision of the African species of the family Schilbeidae (Pisces, Siluriformes). *Rev. Zool. afr.*, 98 (2) : 424-433.
- DE Vos (L.) & LÉVÊQUE (C.), 1983. — Étude systématique et morphologique du genre *Eutropius* en Afrique de l'Ouest (Pisces, Schilbeidae). *Rev. Zool. afr.*, 97 (3) : 469-532.
- ETZEL (V.) & VANDERMISSEN (J. P.), 1985. — *Roloffia nigri-fluvi* = *Roloffia banforensis*. Assoc. Killi Franco belge, Killi Contact, 13 : 31-34.
- GOURENE (G.), 1988. — Révision systématique des Clupeidae d'eau douce de l'Ouest et du Centre africain : morphologie, biométrie, ostéologie et zoogéographie des genres *Pellonula*, *Odaxothrissa*, *Cynothrissa*, *Poecilothrissa*, et *Microthrissa*. Thèse de doctorat de l'Institut national Polytechnique de Toulouse, 288 pp.
- GRAS (R.), 1960. — Contribution à l'étude des poissons du Bas Dahomey. Description de quatre espèces nouvelles. *Bull. Mus. natn. Hist. nat., Paris*, (2) 32 (5) : 401-410.

- GRAS (R.), 1961. — Liste des poissons du Bas Dahomey faisant partie de la collection du laboratoire d'hydrobiologie du service des eaux, forêts et chasses du Dahomey. *Bull. I.F.A.N.*, (A) 23 (2) : 572-586.
- GREENWOOD (P. H.), 1971. — On the Cichlid fish *Haplochromis wingatii* (Boulenger) and a new species from the Nile and Lake Albert. *Rev. Zool. Bot. afr.*, 84 : 344-365.
- GREENWOOD (P. H.), 1974. — The *Haplochromis* species (Pisces, Cichlidae) of Lake Rudolf (East Africa). *Bull. Br. Mus. (nat. Hist.) (Zool.)*, 27 (3) : 141-165.
- GREENWOOD (P. H.), 1976 a. — A review of the family *Centropomidae* (Pisces, Perciformes). *Bull. Br. Mus. (nat. Hist.) (Zool.)*, 29 (1) : 81 p.
- GREENWOOD (P. H.), 1976 b. — Fish fauna of the Nile. In : The Nile, biology of an ancient river (ed. J. Rzoska). *Monographiae biologicae* 29, 417 p., Junk Publ., The Hague : 127-141.
- GREENWOOD (P. H.), 1979. — Towards a phyletic classification of the «genus» *Haplochromis* (Pisces, Cichlidae) and related taxa. Part I. *Bull. Br. Mus. (nat. Hist.) (Zool.)*, 35 (4) : 265-322.
- GREENWOOD (P. H.), 1987. — The genera of pelmatochromine fishes (Teleostei, Cichlidae). A phylogenetic review. *Bull. Brit. Mus. (nat. Hist.) (Zool.)*, 54 (3) : 139-203.
- HOLLY (M.), 1928. — Fische aus dem Scharifluss, gesammelt von Herrn A. Weidholz, darunter drei noch nicht beschriebene Formen. *Zool. Anz.*, 79 (5-6) : 183-190.
- HOPSON (A. J.) & HOPSON (J.), 1965. — *Barbus* (Pisces, Cyprinidae) of the Volta region. *Bull. Br. Mus. nat. Hist. (Zool.)*, 13 (4) : 101-149.
- HOPSON (A. J.) & HOPSON (J.), 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). In : Lake Turkana, A. J. Hopson ed. : 283-347. Overseas Development Administration, London.
- HOWES (G. J.), 1980. — The anatomy, phylogeny and classification of bariliine cyprinid fishes. *Bull. Br. Mus. (nat. Hist.) (Zool.)*, 37 (3) : 129-198.
- HOWES (G. J.), 1984. — A review of the anatomy, taxonomy, phylogeny and biogeography of the African neoboline cyprinid fishes. *Bull. Br. Mus. nat. Hist. (Zool.)*, 47 (3) : 151-185.
- HOWES (G. J.) & TEUGELS (G. G.), 1989. — New bariliine cyprinid fishes from west Africa, with a consideration of their biogeography. *J. nat. Hist.*, 23 : 873-902.
- HUBER (J. H.), 1977. — Liste nominale annotée de *Aphyosemion* Myers, avec description de *Raddaella* et *Kathelys*, deux sous-genres à la biologie originale. *Killi Club de France, Killi Revue*, 4 (4) : 1-16.
- JEGU (M.) & LÉVÊQUE (C.), 1984 a. — Les espèces voisines et synonymes de *Labeo parvus* (Pisces, Cyprinidae) en Afrique de l'Ouest. *Cybium*, 8 (1) : 61-86.
- JEGU (M.) & LÉVÊQUE (C.), 1984 b. — Le genre *Marcusenius* (Pisces, Mormyridae) en Afrique de l'Ouest. *Rev. Hydrobiol. trop.*, 17 (4) : 335-358.
- JOHNELS (A. J.), 1954. — Notes on fishes from the Gambia river. *Ark. Zool., Stockholm*, 6 (17) : 326-411.
- JOHNSEN (S.), 1926. — On a collection of fishes from the White Nile and the Yei river (with notes on the skull of *Allabenchelys* and *Clarias*). *Bergens. Mus. arb.*, 10 : 3-22.
- KÄHSBAUER (P.), 1962. — Beitrag zur Kenntnis der Fischfauna von Nigeria. *Ann. naturh. Mus. Wien.*, 28 : 139-165.
- LAMBERT (J. G.), 1958. — Poissons siluriformes et cyprinodontiformes récoltés en Guinée française avec la description d'une nouvelle espèce de *Microsynodontis*. *Rev. Zool. Bot. afr.*, 57 (1-2) : 39-56.
- LÉVÊQUE (C.), 1983. — Le genre *Barbus* (Pisces, Cyprinidae) en Côte d'Ivoire. *Cybium*, (3) 7 (3) : 61-86.
- LÉVÊQUE (C.), 1989 a. — Remarques taxinomiques sur quelques petits *Barbus* (Pisces, Cyprinidae) d'Afrique de l'Ouest. Première partie. *Cybium*, 13 (2) : 165-180.
- LÉVÊQUE (C.), 1989 b. — Remarques taxinomiques sur quelques petits *Barbus* (Pisces, Cyprinidae) d'Afrique de l'Ouest. Deuxième partie. *Cybium*, 13 (3) : 197-212.
- LÉVÊQUE (C.) & BIGORNE (R.), 1983. — Révision des *Leptocypris* et *Raiamas* (Pisces, Cyprinidae) de l'Afrique de l'Ouest. *Rev. Hydrobiol. trop.*, 16 (4) : 373-393.
- LÉVÊQUE (C.) & BIGORNE (R.), 1985 a. — Le genre *Hippopotamyrus* (Pisces, Cyprinidae) en Afrique de l'Ouest, avec la description d'*Hippopotamyrus paugyi* n. sp. *Cybium*, 9 (2) : 175-192.
- LÉVÊQUE (C.) & BIGORNE (R.), 1985 b. — Répartition et variabilité des caractères méristiques et métriques des espèces du genre *Mormyrus* (Pisces, Mormyridae) en Afrique de l'Ouest. *Cybium*, 9 (4) : 325-340.
- LÉVÊQUE (C.) & BIGORNE (R.), 1987. — Caractères morphologiques et distribution d'*Ichthyborus quadrilineatus* (Pellegri, 1904) et *Phago loricatus* Günther, 1865 (Pisces, Distichodontidae) en Afrique de l'Ouest. *Rev. Hydrobiol. trop.*, 20 (1) : 49-56.
- LÉVÊQUE (C.) & GUÉGAN (J. F.), 1990. — Les grands *Barbus* (Pisces, Cyprinidae) d'Afrique de l'Ouest : révision systématique et parasitofaune branchiale. *Rev. Hydrobiol. trop.*, 23 (1) : 41-65.
- LÉVÊQUE (C.), PAUGY (D.), TEUGELS (G. G.) & ROMAND (R.), 1989. — Inventaire taxinomique et distribution des poissons d'eau douce des bassins côtiers de Guinée et de Guinée Bissau. *Rev. Hydrobiol. trop.*, 22 (2) : 107-127.
- LÉVÊQUE (C.), TEUGELS (G. G.) & THYS VAN DEN AUDENAERDE (D. F. E.), 1988. — Description de trois nouvelles espèces de *Barbus* d'Afrique de l'Ouest. *Cybium*, 12 (3) : 179-187.

- LEWIS (D. S. C.), 1974. — An illustrated key to the fishes of Lake Kainji. Foreign and Commonwealth Office Overseas Development Administration, London, 105 p.
- LOISELLE (P. V.) & WELCOMME (R. L.), 1972. — Description of a new genus of cichlid fish from west Africa. *Rev. Zool. Bot. afr.*, 85 : 37-58.
- LOWE-McCONNELL (R. H.), 1972. — Keys for the field identification of freshwater fishes likely to occur in or above the new man-made Lakes, Lake Volta in Ghana, and the Kainji Lake on the river Niger in Nigeria. Ghana University Press, Accra : 22 p.
- MARQUET (J. P.) REIZER (C.) & MATTEI (X.), 1979. — Contribution à l'étude de la faune ichthyologique du bassin du fleuve Sénégal — IV — Clariidae. *Bull. I.F.A.N.*, A, 41 (3) : 596-626.
- MATTHES (H.), 1964. — Les poissons du lac Tumba et de la région d'Ikela. Étude systématique et écologique. *Annls Mus. r. Afr. centr.*, 126, 204 p.
- MENON (A. G. K.), 1964. — Monograph of the cyprinid fishes of the genus *Garra* Hamilton. *Mem. Indian Mus.*, 14 (4) : 173-260.
- MISHRIGI (S. Y.), 1970. — Fishes of Lake Roseires on the Blue Nile. *Rev. Zool. Bot. afr.*, 82 (1-2) : 193-199.
- MOK (M.), 1974. — Biométrie et biologie des *Schilbe* (Pisces, Siluriformes) du bassin tchadien. 1<sup>re</sup> partie : morphologie comparée des deux espèces de *Schilbe*. *Cah. ORSTOM, sér. Hydrobiol.*, 8 (2) : 119-135.
- NORRIS (S. M.), MILLER (R. J.) & DOUGLAS (M. E.), 1988. — Distribution of *Ctenopoma muriei* and the status of *Ctenopoma clenotis* (Pisces, Anabantidae). *Copeia*, 1988 (2) : 487-491.
- NORRIS (S. M.) & TEUGELS (G. G.), 1990. — A new species of *Ctenopoma* (Pisces, Anabantidae) from southeastern Nigeria. *Copeia*, 1990 (2) : 492-499.
- PAUGY (D.), 1982 a. — Synonymie d'*Alestes chaperi* Sauvage, 1882 avec *Alestes longipinnis* (Günther, 1864) (Pisces, Characidae). *Cybium*, (3) 6 (3) : 75-90.
- PAUGY (D.), 1982 b. — Synonymie d'*Alestes rutilus* Blgr, 1916 avec *A. macrolepidotus* (Val., 1849). Biologie et variabilité morphologique. *Rev. Zool. afr.*, 96 (2) : 286-315.
- PAUGY (D.), 1986. — Révision systématique des *Alestes* et *Brycinus* africains (Pisces, Characidae). *ORSTOM, Études et thèses*. 295 p.
- PAUGY (D.), 1990. — Note à propos des Petersinii (Teleostei, Characidae) d'Afrique occidentale. *Ichthyol. Explor. Freshwaters*, 1 (1) : 75-84.
- PAUGY (D.) & BENECH (V.), 1989. — Les poissons d'eau douce des bassins côtiers du Togo (Afrique de l'Ouest). *Rev. Hydrobiol. trop.*, 22 (4) : 295-316.
- PAUGY (D.) & GUÉGAN (J. F.), 1989. — Note à propos de trois espèces d'*Hydrocynus* (Pisces, Characidae) du bassin du Niger, suivie de la réhabilitation de l'espèce *Hydrocynus vittatus* Castelnau. *Rev. Hydrobiol. trop.*, 22 (1) : 63-69.
- PAUGY (D.), GUÉGAN (J. F.) & AGNÈSE (J. F.), 1990. — Three simultaneous and independant approaches to characterise a new species of *Labeo* (Pisces, Cyprinidae) from Western Africa. Followed by the description of *Labeo roseopunctatus* n. sp. *Can. J. Zool.*, 68 : 1124-1131.
- PAUGY (D.) & LÉVÈQUE (C.), 1981. — Un *Alestes* nouveau du bassin du Niger : *Alestes caroliniae* n. sp. (Pisces, Characidae). *Cybium* (3) 5 (1) : 97-101.
- PAUGY (D.), LÉVÈQUE (C.), TEUGELS (G. G.), BIGORNE (R.) & ROMAND (R.), 1990. — Freshwater fishes of Sierra Leone and Liberia : annotated checklist and distribution. *Rev. Hydrobiol. trop.*, 23 (4) : 329-350.
- PELLEGRIN (J.), 1914. — Les poissons du bassin du Tchad. In : Documents scientifiques de la mission Tilho. E. Larose éd., Paris, 3 : 131-282.
- PELLEGRIN (J.), 1919. — Nouvelle contribution à la faune ichthyologique du lac Tchad. *C. r. hebdom. Séanc. Acad. Sci. Paris*, 169 : 663-665.
- PELLEGRIN (J.), 1922. — Poissons de l'Oubanghi-Chari recueillis par M. Baudon. Description d'un genre, de cinq espèces et d'une variété. *Bull. Soc. Zool. Fr.*, 47 : 64-76.
- PELLEGRIN (J.), 1935. — Pisces. Mission scientifique de l'Omo. *Bull. Mus. natn. Hist. nat., Paris*, (2) 7 : 131-139.
- POLL (M.), 1948. — Note sur une série de types de Mormyridae, de Characidae et de Citharinidae du Museum de Paris. *Bull. Mus. natn. Hist. nat., Paris*, (2) 20 (4) : 75-81.
- POLL (M.), 1967. — Révision des Characidae nains africains. *Annls Mus. r. Afr. centr.*, 162, 158 p.
- POLL (M.), 1971. — Révision des *Synodontis* africains (Famille Mochokidae). *Annls. Mus. r. Afr. cent.*, 191 : 493 p.
- RADDA (A. C.) & WILDEKAMP (R. H.), 1978. — Die *Aphyosemion gardneri* — Gruppe. *Deutsche Killifisch Gen. J.*, 10 (1) : 1-8.
- REID (Mc G. G.), 1985. — A revision of African species of *Labeo* (Pisces, Cyprinidae). *Theses Zoologicae*, vol. 6 : 322 p.
- REID (G. M.) & SYDENHAM (H.), 1979. — A checklist of lower Benue river fishes and an ichthyogeographical review of the Benue River (West Africa). *J. nat. Hist.*, 13 (1) : 41-67.
- REIZER (C.) MATTEI (X.) & CHEVALIER (J. L.), 1972 a. — Contribution à l'étude de la faune ichthyologique du bassin du fleuve Sénégal. I - Polypteridae. *Bull. I.F.A.N.*, (A) 34 (1) : 111-126.
- REIZER (C.) MATTEI (X.) & CHEVALIER (J. L.), 1972 b. — Contribution à l'étude de la faune ichthyologique du bassin du fleuve Sénégal. II - Characidae. *Bull. I.F.A.N.*, (A), 34 (3) : 655-691.
- REIZER (C.) MATTEI (X.) & CHEVALIER (J. L.), 1973. — Contribution à l'étude de la faune ichthyologique du bassin du fleuve Sénégal. III - Mormyridae. *Bull. I.F.A.N.*, (A), 35 (3) : 665-704.

- REIZER (C.) MATTEI (X.) & DE VOS (L.), 1980. — Contribution à l'étude de la faune ichtyologique du bassin du fleuve Sénégal. V-Schilbeidae. *Bull. I.F.A.N.*, (A), 42 (1) : 181-200.
- RENDAHL (H.), 1935. — Einige neue Fische aus dem weissen Nil. *Ann. Zool. Soc. Vanamo*, 2 (2) : 11-18.
- RISCH (L.), 1981. — Note sur la réhabilitation de *Chrysichthys maurus* (Cuvier & Valenciennes, 1839) (Pisces, Bagridae). *Rev. Zool. afr.*, 95 (2) : 409-416.
- RISCH (L.), 1986. — Het genus *Chrysichthys* Bleeker, 1858 en aanverwante genera (Pisces, Siluriformes, Bagridae). Thesis. Katholieke Universiteit Leuven, 2 vol. 801 p.
- RISCH (L.) & THYS VAN DEN AUDENAERDE (D. F. E.), 1985. — Nouvelle description, distribution zoogéographique et affinités de *Chrysichthys johnelsi* Daget, 1959 (Pisces, Bagridae). *Cybium*, 9 (3) : 243-254.
- ROBERTS (T. R.), 1967. — A provisionnal check-list of the fresh-water fishes of the Volta basin, with notes on species of possible economic importance. *J. W. Afr. Sci. Ass.*, 12 (1) : 10-18.
- ROBERTS (T. R.), 1975. — Geographical distribution of African freshwater fishes. *Zool. J. Linn. Soc.*, 57 (4) : 249-319.
- ROBERTS (T. R.), 1989. — Systematic revision and description of new species of suckermouth catfishes (*Chiloglanis*, Mochokidae) from Cameroun. *Proc. Calif. Acad. Sci.*, 46 (6) : 151-178.
- ROBERTS (T. R.), 1990. — *Garra allostoma*, a new species of cyprinid fish from Highlands of the Niger basin in Cameroun. *Rev. Hydrobiol. trop.*
- ROMAN (R.), 1966. — Les poissons des hauts bassins de la Volta. *Annls. Mus. r. Afr. Centr.*, sér. 8, *Sci. Zool.*, 150 : 1-191.
- ROMAN (R.), 1974. — Complément d'information sur les poissons des hauts bassins du fleuve Volta (première note). *Notes Doc. Voltaïques*, 7 (4) : 37-61.
- ROMAN (R.), 1975. — Une nouvelle espèce de *Synodontis* (Poissons, Mochokidae) dans la Bougouriba affluent de la Volta noire : *Synodontis voltae*. *Notes Doc. Voltaïques*, 8 (2) : 45-52.
- SANDON (M.), 1950. — An illustrated guide to the fishes of the Sudan. *Sudan notes and records*, 61 p. McCorquodale & Co.
- SAGUA (V. O.), 1987. — On a new species of electric catfish from Kainji, Nigeria, with some observations on its biology. *J. Fish. Biol.*, 30 : 75-89.
- SCHEEL (J. J.), 1968. — Rivulines of the world. T.H.F. Publication, New Jersey, 480 p.
- SKELTON (P. H.), 1984. — A systematic revision of species of the catfish genus *Amphilius* (Siluroidei, Amphiliidae), from east and southern Africa. *Ann. Cape prov. Mus.*, 16 (3) : 41-71.
- STAUCH (A.), 1966. — Le bassin camerounais de la Bénoué et sa pêche. *Mém. ORSTOM*, 15, 152 p.
- STIASSNY (M. L. J.), 1989. — A taxonomic revision of the African genus *Tylochromis* (Labroidei, Cichlidae) with notes on the anatomy and relationships of the group. *Annls. Mus. r. Afr. centr.*, 258, 161 pp.
- SVENSSON (G. S. O.), 1933. — Freshwater fishes from the Gambia river (British West Africa). Results of the Swedish expedition 1931. *K. svenska Vetensk. Akad. Handl.*, 12 (3) : 1-102.
- STEINDACHNER (F.), 1870. — Zur Fischfauna des Senegal. *Sber. Akad. Wiss. Wien*, 60 : 669-714, 61 : 533-583.
- SYDENHAM (D. H. J.), 1975. — Observations on the fish populations of a Nigerian forest stream. *Rev. Zool. afr.*, 89 (2) : 257-272.
- SYDENHAM (D. H. J.), 1977. — The qualitative composition and longitudinal zonation of the fish fauna of the River Ogun, Western Nigeria. *Rev. Zool. afr.*, 91 (4) : 974-976.
- TEUGELS (G. G.), 1982 a. — A systematic outline of the African species of the genus *Clarias* (Pisces, Clariidae) with an annotated bibliography. *Annls. Mus. r. Afr. centr.*, sér. In 8°, *Sci. Zool.*, 236 : 249 p.
- TEUGELS (G. G.), 1982 b. — Preliminary results of a morphological study of five nominal species of the subgenus *Clarias* (Pisces, Clariidae). *J. nat. Hist.*, 16 (3) : 439-464.
- TEUGELS (G. G.), 1986. — A systematic revision of the African species of the genus *Clarias* (Pisces, Clariidae). *Annls. Mus. r. Afr. centr.*, sér. In 8°, *Sci. Zool.*, 247 : 199 p.
- TEUGELS (G. G.), DENAYER (B.) & LEGENDRE (M.), 1990. — A systematic revision of the African catfish genus *Heterobranchus* (Pisces, Clariidae). *Zool. J. Linn. Soc.*, 98 : 237-257.
- TEUGELS (G. G.), LÉVÈQUE (C.), PAUGY (D.) & TRAORÉ (K.), 1988. — État des connaissances sur la faune ichtyologique des bassins côtiers de Côte d'Ivoire et de l'ouest du Ghana. *Rev. Hydrobiol. trop.* 21 (3) : 221-237.
- TEUGELS (G. G.) & ROBERTS (T. R.), 1990. — Description of a small distinctively coloured new species of the characid genus *Neolebias* from the Niger delta, West Africa (Pisces, Distichodontidae). *Rev. zool. afr.*, 104 : 61-67.
- TEUGELS (G. G.), RISCH (L.), DE VOS (L.) & THYS VAN DEN AUDENAERDE (D. F. E.), 1991. — Generic review of the African bagrid genera *Auchenoglanis* and *Parauchenoglanis* with description of a new genus. *J. nat. Hist. Lond.*, (sous presse).
- TEUGELS (G. G.) & THYS VAN DEN AUDENAERDE (D. F. E.), 1981. — On the synonymy of the west African species *Clarias ebriensis* and *Clarias dahomeyensis* (Pisces, Clariidae). *Rev. Zool. afr.*, 95 (1) : 11-28.
- THYS VAN DEN AUDENAERDE (D. F. E.), 1968 a. — A preliminary contribution to a systematic revision of the genus *Pelmatochromis* Hubrecht *sensu lato* (Pisces, Cichlidae). *Rev. Zool. Bot. afr.*, 77 (3-4) : 349-391.

- THYS VAN DEN AUDENAERDE (D. F. E.), 1968 b. — An annotated bibliography of *Tilapia* (Pisces, Cichlidae). MRAC, Tervuren (Doc. Zool.), 14, 450 p.
- THYS VAN DEN AUDENAERDE (D. F. E.), 1970. — Bijdrage tot een systematische en bibliografische monografie van het genus *Tilapia* (Pisces, Cichlidae). Thèse Doc. État, Univ. de Gand : 261 p.
- THYS VAN DEN AUDENAERDE (D. F. E.), 1971. — Some new data concerning the *Tilapia* — species of the subgenus *Coptodon* (Pisces, Cichlidae). *Rev. Zool. Bot. afr.*, 84 (3-4) : 203-316.
- TRAVERS (R. A.), 1988. — Diagnosis of a new african mastacembelid spiny-eel genus *Aethiomastacembelus* gen. nov. (Mastacembeloidei; Synbranchiformes). *Cybium*, 12 (3) : 255-257.
- TREWAVAS (E.), 1974. — The freshwater fishes of the Rivers Mungo and Meme and lakes Kotto, Mboandong and Soden, west Cameroun. *Bull. Brit. Mus (nat. Hist.) (Zool.)*, 26 (5) : 331-419.
- TREWAVAS (E.), 1983. — Tilapiine fishes of the genera *Sarotherodon*, *Oreochromis* and *Danakilia*. Trustees, BMNH, London : 583 p.
- TREWAVAS (E.) & IRVINE (F. R.), 1947. — Freshwater fishes of the Gold Coast. In : The fishes and fisheries of the Gold Coast by F. R. Irvine *et al.*, London, Crown Agents, 352 p.
- UFERMAN (A.), ALLGAYER (R.) & GEERTS (M.), 1987. — Cichlid Catalogue (Pisces, Perciformes, Cichlidae, Bonaparte, 1840). Alphabetical catalogue of the cichlids fishes, vol. 1, 439 p.
- WILDEKAMP (R. H.), ROMAND (R.) & SCHEEL (J. J.), 1986. — Cyprinodontidae. In : Daget (J.), Gosse (J. P.) & Thys van den Audenarde (eds) : Check-list of the freshwater fishes of Africa (CLOFFA 2) : 165-279. MRAC-ORSTOM.