

## ON A COLLECTION OF FISH FROM THE MAHANADI

*By*

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(With 1 Text-figure)

### INTRODUCTION

The collection of fish reported here was made by the senior author during October—November, 1954. The collections were made in the Mahanadi from its stretch at Cuttack to Seorinarayan in Madhya Pradesh, a distance of about 360 kilometres. The report is interesting in the fact that there are new records of some species from this drainage of which previous workers failed to obtain specimens. Hora (1949) published a list of 43 species from the headwaters of the Mahanadi based on a collection made by Dr. H. S. Rao in 1939, in the Raipur district. Some of the localities visited by Dr. Rao are now above the Hirakud Dam. Chauhan (1947) gave a list of 54 species from River Tel, a tributary of the Mahanadi. Job, David and Das (1955) surveyed the Mahanadi for a stretch of 65 miles and recorded 86 species from different localities both above and below the Hirakud Dam; however they did not collect from any locality beyond Mahadeopalli, which is about 50 kilometres above the dam. The present collection reports for the first time of species from Seorinarayan and Chandrapur, both in Madhya Pradesh, the farthest point, Seorinarayan, being 150 km. above the Hirakud Dam.

### LIST OF LOCALITIES

Station 1. Anicut on the Mahanadi, Cuttack (Orissa State).

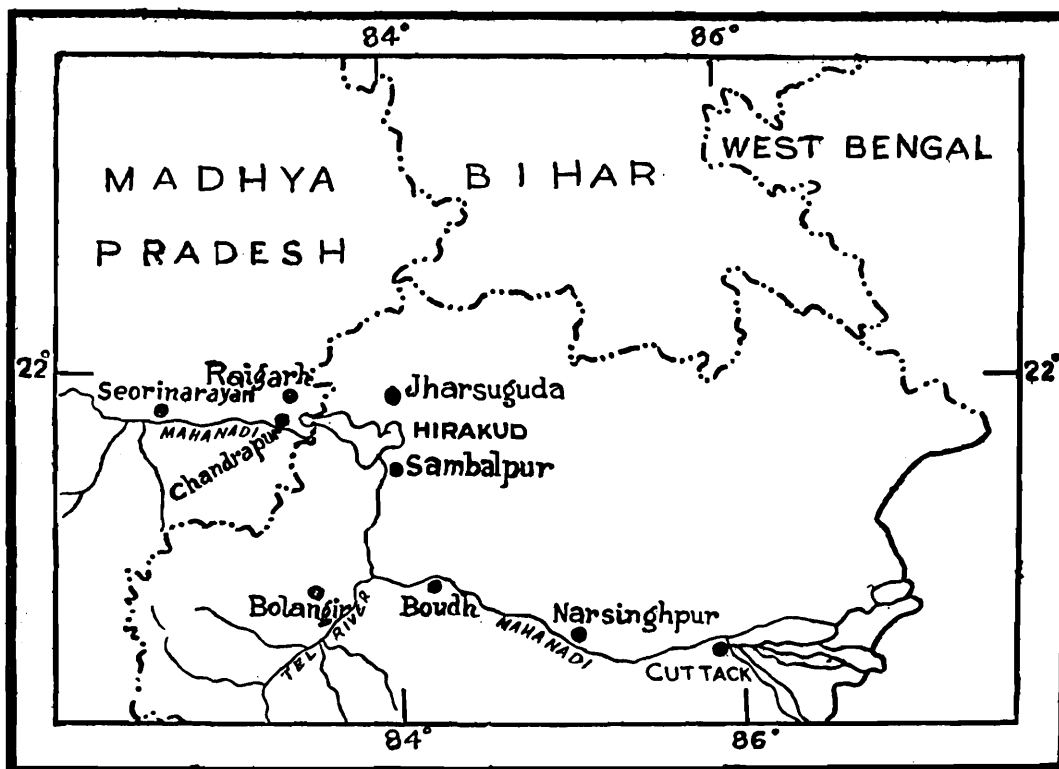
A strong masonry structure over which a fair-weather road is constructed during the dry season. Mahanadi at this place was about 0.6 km. wide and about 22 metres deep. Water was rapid, clear and bottom invisible. Temperature of water 30°C. Fishing was mainly done with line and rod, and cast-net. More prevalent was trap-netting. Large quantities of catfish were obtained by fishermen by placing strong nets, traps etc., across the rushing water at the sluice gates.

Station 2. Narsinghpur on the Mahanadi (Orissa State).

An elevated small town surrounded by hills, about 300 metres above sea level. It is situated about 122 km. north-west to Cuttack. The river was dry at the time of collection with a thin stream in the middle. Bank of the river was rocky, with sparse vegetation. Fishing was mainly done by bamboo-basket traps at suitable places in the meandering stream with weeds and shrubs placed in front of the traps to serve as bait and lure for the fish. In small puddles, and rock-pools only the weeds and shrubs were left overnight in which the fishes sought shelter and they were removed the next-day.

Station 3. A pond adjoining the fishery office at Narsinghpur.

A shallow pond with marginal vegetation mainly comprising of low shrubs and herbs. Water was muddy and warm at about 4 p.m.



Text-fig. 1. Map of the Mahanadi river with the localities where from the collections have been made.

Station 4. Mahanadi at Sambalpur near Kamli Bazar (Orissa State).

Water very clear and not very deep, hardly about 3 metres deep. Bank vegetation was sparse with boulders and rocks strewn all around. Bottom of the river was with shingles and pebbles. Fishing was mainly done by hooks and line. A long parachute wire was stretched across the river with 90 hooks of  $\frac{1}{4}$  to  $\frac{1}{2}$  inch size suspended from it at equal intervals. Three more such lines were placed at about 100 to 200 metres distance. These lines were never

taken out completely ; only the catch was removed from the hooks every day. Many catfishes were obtained on these lines. Occasionally, small baskets were attached to bamboo poles and left under water submerged overnight. Fishes caught were kept in the bamboo baskets with narrow mouth and kept submerged in water which also preserved the fish alive.

Station 5. Ramsagar tank, near the market and Bus stand, Sambalpur (Orissa State).

Water very clear, teeming with life. Fishing and bathing prohibited by the authorities. Fishing was done by special permission.

Station 6. Pension Para tank, near Circuit House, Sambalpur (Orissa State).

Water greenish, plenty of fishing with hook and line by local people prevalent. Said to be a good tank for *singi* fish.

Station 7. Burla, small tank opposite United Construction Company's quarry.

Water very shallow, muddy and with a clay bottom. Fisherwomen damn portion of the pond and after emptying the water catch fish with hand.

Station 9. Mahanadi below the Hirakud Dam.

Current very rapid, running over boulders and rocks. No netting was possible, from the main stream, but a side channel running into a pool-like expanse was selected for fishing. Water current here was not very fast. Bottom was with weeds.

Station 10. Hirakud, a pond near the main road leading to the batching plant of the Dam.

Pond not very deep, with water only about a metre deep. Vegetation mainly aquatic plants such as Lily, Vallisneria, Hyacinths etc. Fishing was done with cast-net.

Station 11. Raigarh (Madhya Pradesh). Purchased from the fish market.

Station 12. Mahanadi at Chandrapur (Madhya Pradesh).

River smooth flowing with no rocks or boulders. Fishing was done mainly by long line and hooks.

Station 13. Mahanadi at Seorinarayan (Madhya Pradesh).

144 km. west to Raigarh, Mahanadi at Seorinarayan was not very broad at the time of collection and the stream was slow and shallow with water hardly above 2 meters. Fishing was done at Singol, a small village about two kilometres further west where the river was deep. *Benthua Jal* was used extensively for fishing.

The following species were collected from localities above the Hirakud Dam.—

1. *Bariulus barna* (Hamilton)
2. *Barilius bendelisis* (Hamilton)
3. *Barilius vagra* (Hamilton)
4. *Esomus danrica* (Hamilton)
5. *Labeo rohita* (Hamilton)
6. *Puntius gelius* (Hamilton)
7. *Ompok bimaculatus* (Bloch)
8. *Wallago attu* (Schenider)
9. *Xenentodon cancila* (Hamilton)
10. *Ambassis ranga* (Hamilton)
11. *Badis badis* (Hamilton)

The following species were collected from localities below the Hirakud Dam.—

1. *Goniolosa manmina* (Hamilton)
2. *Notopterus notopterus* (Pallas)
3. *Danio (Brachydanio) rerio* (Hamilton)
4. *Rasbora daniconius* (Hamilton)
5. *Amblypharyngodon mola* (Hamilton)
6. *Catla catla* (Hamilton)
7. *Puntius ticto* (Hamilton)
8. *Lepidocephalichthys guntea* (Hamilton)
9. *Mystus tengara* (Hamilton)
10. *Rita chrysea* Day
11. *Gagata cenia* (Hamilton)
12. *Ailia coila* (Hamilton)
13. *Ambassis nama* (Hamilton)
14. *Mastocembelus pancalus* (Hamilton)
15. *Osteobrama cotio peninsularis* (Silas)

The following species were collected from localities above and below the Hirakud Dam.—

1. *Oxygaster bacaila* (Hamilton)
2. *Labeo bata* (Hamilton)
3. *Aspidoparia morar* (Hamilton)

4. *Puntius sarana* (Hamilton)
5. *Puntius sophore* (Hamilton)
6. *Mystus cavasius* (Hamilton)
7. *Mystus seenghala* (Sykes)
8. *Mystus vittatus* (Bloch)
9. *Bagarius bagarius* (Hamilton)
10. *Clupisoma garua* (Hamilton)
11. *Channa punctatus* (Bloch)
12. *Channa striatus* (Bloch)
13. *Glossogobius giuris giuris* (Hamilton)
14. *Mastocembelus armatus armatus* (Lacépède)
15. *Macronathus aculeatum* (Bloch)
16. *Rhinomugil corsula* (Hamilton)

### SYSTEMATIC ACCOUNT

#### 1. *Goniolosa manmina* (Hamilton)

1822. *Clupanodon manmina* Hamilton, *Fishes of Ganges* : 247, 383 (Type-locality, most of the freshwater branches of the Ganges).

*Material.*—4 exs., Mahanadi near Anicut at Cuttack (Orissa State), 19 Oct. 1954.

*Distribution.*—India : the rivulets and main streams of Ganga, Jamuna, Brahmaputra and Mahanadi and estuaries of the major Indian rivers except in the Deccan, southern and western India  
Extra-Indian : Bangladesh; Pakistan.

#### 2. *Notopterus notopterus* (Pallas)

1769. *Gymnotus notopterus* Pallas, *Spicil. Zool.*, 7 : 40, pl. 6, fig. 2 (Type-locality, Indian Ocean).

*Material.*—1 ex., Narsinghpur (Orissa State), from a pond adjoining the Fishery Office, 20 Oct. 1954.

*Distribution.*—India : Punjab, Uttar Pradesh, Bihar, West Bengal, Assam, Orissa, Madhya Pradesh, Tamil Nadu, Andhra Pradesh, Maharashtra and Kerala. Extra-Indian : Bangladesh; Pakistan; Burma; Malaya Peninsula and Archipelago; Thailand.

#### 3. *Oxygaster bacaila* (Hamilton)

1822. *Cyprinus bacaila* Hamilton, *Fishes of Ganges* : 265, 384, pl. 8, fig. 76 (Type-locality, freshwater rivers of all Gangetic Provinces).

*Material.*—1 ex., Mahanadi at Narsinghpur (Orissa State), 21 Oct. 1954; 1 ex., inlet canal from Mahanadi at Cuttack (Orissa

State), 19 Oct. 1954 ; 9 exs., Mahanadi near Kamli Bazar at Sambalpur (Orissa State), 11 Nov. 1954 ; 4 exs., Raigarh (Madhya Pradesh), 16 Nov. 1954 ; 22 exs., Mahanadi at Seorinarayan (Madhya Pradesh), 21 Oct. 1954.

*Distribution.*—India : throughout except Kerala, Karnataka and Tamil Nadu. Extra-Indian : Bangladesh; Pakistan; Burma.

#### 4. *Barilius barna* (Hamilton)

1822. *Cyprinus barna* Hamilton, *Fishes of Ganges* : 268, 384 (Type-locality, Yamuna and Brahmaputra rivers).

*Material.*—5 exs., Mahanadi at Seorinarayan (Madhya Pradesh), 18 Nov. 1954.

*Distribution.*—India : Assam, West Bengal, Bihar, Uttar Pradesh, and Orissa.

*Remarks.*—The five examples from Seorinarayan measure 20 to 28 mm. in standard length and have 8 to 10 vertical bars on their sides. Three examples have eight bars and the remaining two, have ten bars each.

#### 5. *Barilius bendelisis* (Hamilton)

1822. *Cyprinus bendelisis* Hamilton, *Fishes of Ganges* : 270, 385 (Type-locality, Rivers of Mysore).

*Material.*—2 exs., Sambalpur, Mahanadi near Kamli bazar, (Orissa State), 11 Nov. 1954 ; 3 exs., Mahanadi at Seorinarayan (Madhya Pradesh), 18 Nov. 1954.

*Distribution.*—India : Punjab, Uttar Pradesh, Bihar, Orissa, West Bengal, Assam, Tamil Nadu and Karnataka. Extra-Indian Bangladesh; Pakistan; Sri Lanka.

*Remarks.*—The specimens from Seorinarayan measure 96, 101, 121 mm. in standard length and have 9 to 11 anal fin rays and 10 to 12 vertical bars on the sides.

#### 6. *Barilius vagra* (Hamilton)

1822. *Cyprinus vagra* Hamilton, *Fishes of Ganges* : 269, 380 (Type-locality, Ganges at Patna).

*Material.*—2 ex., Sambalpur, Mahanadi near Kamli Bazar (Orissa State), 11 Nov. 1954 ; 32 exs., Mahanadi at Seorinarayan (Madhya Pradesh), 18 Nov. 1954.

*Distribution.*—India : throughout northern India. Extra-Indian : Pakistan; Sri Lanka.

*Remarks.*—Job, David and Das (1955) did not obtain any specimens of this species, though included by them in their list, on the strength of Chauhan's (1947) record. The occurrence of this species above and below the Hirakud Dam is noteworthy. The lot of 32 examples from Seorinarayan ranging 18 to 40 mm. in standard length have the following frequency distribution of the bars on their body sides. The smallest of them has no markings.

No. of bars	8	9	10	11	12	13	14	15	16
No. of exs.	6	5	6	—	3	2	6	2	1'

### 7 *Danio (Brachydanio) rerio* (Hamilton)

1822. *Cyprinus rerio* Hamilton, *Fishes of Ganges* : 323, 390 (Type-locality, Kosi River).

*Material.*—1 ex., Mahanadi at Narsinghpur (Orissa State), 21 Oct. 1954.

*Distribution.*—India : throughout. Extra-Indian : Sri Lanka; Bangladesh; Pakistan; Burma; Thailand.

*Remarks.*—There are five longitudinal stripes along the sides of the body and four on the anal fin.

### 8. *Esomus danrica* (Hamilton)

1822. *Cyprinus danrica* Hamilton, *Fishes of Ganges* : 325, 327, pl. 16, fig. 88 (Type-locality, Ponds and ditches of Bengal).

*Material.*—1 ex., Ramsagar tank near the market and Bus stand at Sambalpur (Orissa State), 12 Nov. 1954; 2 exs., Pension Para tank near the Circuit House at Sambalpur (Orissa State), 12 Nov. 1954.

*Distribution.*—India : throughout. Extra-Indian : Bangladesh; Pakistan; Burma, Sri Lanka; Malaya; Thailand.

*Remarks.*—It is remarkable that Job, David and Das (1955) were unable to procure an example of this otherwise common fish. However, it may be stated that it is more a tank fish than an inhabitant of the rivers.

9. *Rasbora daniconius* (Hamilton)

1822. *Cyrinus daniconius* Hamilton, *Fishes of Ganges* : 327, 329 (Type-locality, Rivers of southern Bengal).

*Material*.—2 exs., Mahanadi at Narsinghpur (Orissa State), 21 Oct. 1954 ; 1 ex., a tank opposite United Construction Company's quarry at Burla (Orissa State), 14 Nov. 1954.

*Distribution*.—India : throughout. Extra-Indian : Burma; Malay Archipelago; Sri Lanka; Bangladesh; Pakistan.

10. *Labeo bata* (Hamilton)

1822. *Cyprinus bata* Hamilton, *Fishes of Ganges* : 283, 386 (Type locality, Rivers and ponds of Bengal).

*Material*.—1 ex., Mahanadi near the Anicut, Cuttack (Orissa State), 19 Oct. 1954 ; Mahanadi at Seorinarayan (Madhya Pradesh), 18 Nov. 1954.

*Distribution*.—India : Madhya Pradesh, Maharashtra, Tamil Nadu, Orissa, Bengal and Assam. Extra-Indian : Bangladesh; Pakistan.

11. *Labeo rohita* (Hamilton)

1822. *Cyprinus rohita*, Hamilton, *Fishes of Ganges* : 301, 388 (Type-locality, Freshwater rivers of Gangetic provinces).

*Material*.—1 ex., Raigarh (Madhya Pradesh), 16 Nov. 1954.

*Distribution*.—India : Assam, West Bengal, Uttar Pradesh, Punjab, Madhya Pradesh, Orissa. Extra-Indian : Bangladesh; Pakistan; Burma.

*Remarks*.—Job, David and Das (1955) considered this important carp as infrequently obtained. The example recorded here was purchased from the fish market. The fishes were reported to come from the Mahanadi at Chandrapur and from Kelo river, an affluent stream of the Mahanadi flowing near Raigarh.

12. *Aspidoparia morar* (Hamilton)

1822. *Cyprinus morar* Hamilton, *Fishes of Ganges* : 264, 381 (Type locality, Rivers of Jamuna and Teesta).

*Material*.—4 exs., Mahanadi at Narsinghpur (Orissa State), 21 Oct. 1954 ; 3 exs., Sambalpur (Orissa State), 11 Nov. 1954.



*Distribution.*—India : throughout, except western coast and in localities south of Krishna river. Extra-Indian : Bangladesh; Pakistan ; Burma ; Thailand.

### 13. *Amblypharyngodon mola* (Hamilton)

1822. *Cyprinus mola* Hamilton, *Fishes of Ganges*, pp. 334, 392 pl. 38, fig. 92 (Type-locality, Ponds and freshwater rivers of Gangetic Provinces).

*Material.*—4 exs., Mahanadi at Narsinghpur (Orissa State), 21 Oct. 1954 ; Pension Para tank near the Circuit House, Sambalpur (Orissa State), 12 Nov. 1954.

*Distribution.*—India : throughout except Kerala. Extra-Indian : Bangladesh ; Pakistan ; Burma.

### 14. *Catla catla* (Hamilton)

1822. *Cyprinus catla* Hamilton, *Fishes of Ganges* : 287, 318, 387, pl. 13, fig. 81 (Type-locality, Rivers and tanks of Bengal).

*Material.*—1 ex., a pond adjoining fishery office at Narsinghpur (Orissa State), 20 Oct. 1954.

*Distribution.*—India : throughout. Extra-Indian : Burma and Thailand.

### 15. *Puntius gelius* (Hamilton)

1822. *Cyprinus gelius* Hamilton, *Fishes of Ganges* : 320, 390 (Type-locality, Ponds and ditches of North-eastern Bengal).

*Material.*—1 ex., Ramsagar tank near the market and Bus stand, Sambalpur (Orissa State), 12 Nov. 1954.

*Distribution.*—India : Orissa, Bengal and Assam.

*Remarks.*—This species is generally confused with *Puntius phutunio* (Hamilton). It can be distinguished from it by its yellowish hue.

### 16. *Puntius sarana* (Hamilton)

1822. *Cyprinus sarana* Hamilton, *Fishes of Ganges* : 307, 388 (Type-locality, Ponds and rivers of India).

*Material.*—3 ex., Mahanadi at Narsinghpur (Orissa State) 21 Oct. 1954 ; 1 ex., Mahanadi near Kamli Bazar, Sambalpur

(Orissa State), 11 Nov. 1954 ; 2 exs., Raigarh (Madhya Pradesh), 16 Nov. 1954 ; 2 exs., Mahanadi at Seorinarayan (Madhya Pradesh), 18 Nov. 1954.

*Distribution.*—India : throughout. Extra-Indian : Bangladesh ; Pakistan ; Malaya.

#### 17. *Puntius sophore* (Hamilton)

1822. *Cyprinus sophore* Hamilton, *Fishes of Ganges* : 310, 389, pl. 19, fig. 86 (Type-locality, Ponds of Bengal).

*Material.*—36 exs., Mahanadi at Narsinghpur (Orissa State), 20 & 21 Oct. 1954 ; 7 exs., from a tank opposite United Construction Company's quarry at Burla (Orissa State), 14 Nov. 1954 ; 7 exs., Mahanadi near the Hirakud Dam (Orissa State), 15 Nov. 1954 ; 2 exs., Mahanadi below the Hirakud Dam (Orissa State), 15 Nov. 1954 ; 2 exs., Raigarh (Madhya Pradesh), 16 Nov. 1954 ; 3 exs., Mahanadi at Chandrapur (Madhya Pradesh), 17 Nov. 1954.

*Distribution.*—India : throughout. Extra-Indian : Bangladesh ; Pakistan ; Burma ; Yunnan.

#### 18. *Puntius ticto* (Hamilton)

1822. *Cyprinus ticto* Hamilton, *Fishes of Ganges* : 314, 389, pl. 8, fig. 87 (Type-locality, South-east part of Bengal).

*Material.*—1 ex., Mahanadi at Cuttack (Orissa State), 19 Oct. 1954 ; 3 exs., Mahanadi at Narsinghpur (Orissa State), 21 Oct. 1954 ; 1 ex., a tank opposite United Construction Company's quarry at Burla (Orissa State), 14 Nov. 1954 ; 1 ex., Mahanadi at Chandrapur (Madhya Pradesh), 17 Nov. 1954.

*Distribution.*—India : throughout. Extra-Indian : Bangladesh ; Pakistan ; Sri Lanka ; Burma ; Thailand.

#### 19. *Osteobrama cotio peninsularis* Silas

1952. *Osteobrama cotio* var. *peninsularis* Silas, *Proc. natnl. Inst. Sci. India*, 18 (5) : 433 (Type-locality, Poona).

*Material.*—3 exs., a tank near the main road leading to the batching plant of the Hirakud Dam, Hirakud (Orissa State), 15 Nov. 1954.

*Distribution.*—India : South India.

*Remarks.*—Silas (1952) elucidated the systematic status of the species to be included under *Osteobrama* and differentiated the Peninsular form as a separate variety *peninsularis*. The three examples collected from Hirakud are referable to this taxa. They have lateral line scales 55 or 56, predorsal scales 21—23, and the number of anal fin rays 30 or 31. The specimens measure 36, 40 and 40 mm in standard length respectively. The head length is 4.00 times in standard length, body depth 2.38 (2.35—2.40). The diameter of eyes is 2.43 (2.26 to 2.57) in head length. Dorsal origin is nearer to tip of snout than to base of caudal fin. Pectoral fins reach pelvics and pelvics extend to anal fin. Fins are unmarked. This is the first record of this subspecies from this area.

## 20. *Lepidocephalichthys guntea* (Hamilton)

1822. *Cobitis guntea* Hamilton, *Fishes of Ganges* : 353, 394 (Type-locality, Ponds and freshwaters of Bengal).

*Material.*—6 exs., Mahanadi at Narsinghpur (Orissa State), 21 Oct. 1954.

*Distribution.*—India : throughout. Extra-Indian : Bangladesh ; Pakistan.

## 21. *Mystus cavasius* (Hamilton)

1822. *Pimelodus cavasius* Hamilton, *Fishes of Ganges* : 203, 379, pl. 11, fig. 67, (Type-locality, Larger freshwater rivers of Gangetic Provinces).

*Material.*—3 exs., Mahanadi near Anicut, Cuttack (Orissa State), 19 Oct. 1954 ; 21 exs., Mahanadi at Narsinghpur (Orissa State), 20 & 21 Oct. 1954 ; 4 exs., Mahanadi near Kamli Bazar, Sambalpur (Orissa State), 11 Nov. 1954 ; 3 exs., Raigarh (Madhya Pradesh), 16 Nov. 1954.

*Distribution.*—India : throughout. Extra-Indian : Bangladesh ; Pakistan ; Burma ; Thailand ; Malay Archipelago.

*Remarks.*—The length of the maxillary barbels has been of diagnostic value in this species. 17 examples from Narsinghpur measuring 57 to 83 mm in standard length have their maxillary barbels extending upto the base of the caudal fin clearly, in all cases.

## 22. *Mystus seenghala* (Sykes)

1839. *Platystomus seenghala* Sykes, *Trans. zool. Soc. Lond.*, 2 : 371 (Type-locality, Mutha-Mula river, Poona).

*Material.*—1 ex., Mahanadi at Narsinghpur (Orissa State), 20 Oct. 1954; 1 ex., Mahanadi near Kamli Bazar, Sambalpur (Orissa State), 11 Nov. 1954.

*Distribution.*—India : Andhra Pradesh, Punjab, Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh, West Bengal, Orissa and Deccan. Extra-Indian : Bangladesh ; Burma.

*Remarks.*—Fishermen differentiated *seenghala* from *aor* by the former having a more pronounced spatulate upper jaw and also a longer head. Locally called “*seenga*”, they do not attach credence to the length of the maxillary barbels in differentiating the two species.

### 23. *Mystus tengara* (Hamilton)

1822. *Himelodus tengara* Hamilton, *Fishes of Ganges* : 183, 377 (Type-locality, Northern parts of Bengal).

*Material.*—22 exs., Mahanadi at Narsinghpur (Orissa State), 20, 21 Oct. 1954; 2 exs., Mahanadi at Chandrapur (Madhya Pradesh), 17 Nov. 1954.

*Distribution.*—India : mostly confined to northern India, rare below the Krishna river system. Extra-Indian : Bangladesh ; Pakistan.

*Remarks.*—Job, David and Das (1955) did not obtain any specimens of this species though they indicated it in their list. Hora (1949) thought that this species is synonymous with *M. vittatus* (Bloch). Though apparently so, the two are different in their geographical range, external characters, and also in their osteological features (see Jayaram & Bhimachar, 1967). The median groove which represents the fontanelle on the skull does not reach the base of the occipital process in *tengara* unlike in *vittatus* where it reaches. The caudal fin is also longer in this species (Jayaram, 1954).

### 24. *Mystus vittatus* (Bloch)

1797. *Silurus vittatus* Bloch, *Ichth. Hist. nat.*, 11 : 40, pl. 371, fig. 2 (Type-locality, Tranquebar, S. India).

*Material.*—2 exs., Inlet canal from Mahanadi, Cuttack (Orissa State), 19 Oct. 1954; 23 exs., Raigarh (Madhya Pradesh), 16 Nov. 1954.

*Distribution.*—India : throughout. Extra-Indian : Sri Lanka ; Bangladesh ; Pakistan ; Burma ; Thailand.

25. *Rita chrysea* Day

1877. *Rita chrysea* Day. *Fish. India*: 455, pl. 104, fig. 1 (Type-locality, "Orissa"; subsequently revised as Anicut, Cuttack).

*Material*.—ZSI F 812/2, 126 exs., Mahanadi near the Anicut, Cuttack (Orissa State), topotypes, 18 to 20 Oct. 1954; ZSI F 813/2, 145 exs., Mahanadi near Kamli Bazar, Sambalpur (Orissa State), 11 Nov. 1954; ZSI F 815/2, 22 exs., Sambalpur fish market (Orissa State), 11 Nov. 1954, ZSI F 814/2, 50 exs., Mahanadi, Chandrapur (Madhya Pradesh), 17 Nov. 1954.

*Distribution*.—Confined to the Mahanadi and its affluents. Not so far recorded from any other river systems.

*Remarks*.—Locally called "Kokia", "Museri", "Kentia", this species forms one of the chief economically important species of this area. A large quantity of this fish is generally caught. In fresh condition the body is of lead grey colour, with the ventral surface pale white with a yellowish tint over the iris. Some examples have a violet or bluish tint on and near the occiput. In fingerlings the fins are tipped black with the sides slightly golden coloured. Specimens from Sambalpur however, have a dark bluish tinge of patches over the dorsal surface and intermittent patches of same colour along sides upto the lateral line. Below the lateral line and all over the ventral surface, the colour is completely silvery white. Fins are tinged pale violet.

Day (1877) described this species from a single specimen from "Orissa" Subsequently, Southwell (unpublished) recorded this species from the Anicut at Cuttack. During October-November, 1954, one of us (K.C.J.) collected over 300 specimens of this species from the Mahanadi near the Anicut at Cuttack. Comparison of the single example of Day, present in the Zoological Survey of India (ZSI. Cat. 498) with those from Anicut, Cuttack and also from other localities indicates clearly that Anicut, Cuttack as the possible type-locality. Accordingly the type-locality was revised (Jayaram, 1966) from "Orissa" to Mahanadi, Anicut, Cuttack (Orissa State).

26. *Ompok bimaculatus* (Bloch)

1794. *Silurus bimaculatus* Bloch, *Auslandische Fische*, 8 : 24, pl. 364 (Type-locality, Tranquebar).

*Material*.—1 ex., Raigarh (Madhya Pradesh). 16 Nov. 1954.

*Distribution*.—India : throughout. Extra-Indian : Burma ; Malaya ; Thailand ; Yunnan ; Sri Lanka.

*Remarks.*—Job, David and Das (1955) noted that this species was rarely observed. The example reported here was purchased from the fish market. The catch was reported to be from the Mahanadi at Chandrapur and also from Kelo river, an affluent stream of the Mahanadi flowing near the town Raigarh.

### 27. *Wallago attu* (Schneider)

1801. *Silurus attu* Scheneider, *Syst. Ichth. Bloch.* : 338, pl. 75 (Type-locality, Malabar).

*Material.*—1 ex., Mahanadi at Narsinghpur (Orissa State), 20 Oct. 1954.

*Distribution.*—India : throughout. Extra-Indian : Bangladesh ; Pakistan ; Sri Lanka ; Burma ; Malaya ; East Indies ; Thailand ; Indo-China ; Western Yunnan. A very widely distributed species.

### 28. *Ailia coila* (Hamilton)

1822. *Malapterurus coila* Hamilton, *Fishes of Ganges* : 158, 375 (Type-locality, freshwater rivers of Bengal).

*Material.*—1 ex., Mahanadi, Cuttack (Orissa State), 18 Oct. 1954.

*Distribution.*—India : Rivers of north India and Deccan, namely the Indus, Ganga, Yamuna, Brahmaputra, Mahanadi and Krishna. Extra-Indian : Bangladesh ; Pakistan ; Nepal.

### 29. *Clupisoma garua* (Hamilton)

1822. *Silurus garua* Hamilton, *Fishes of Ganges* : 156, 375, pl. 21, fig. 50 (type-locality, Freshwater rivers of the Gangetic provinces).

*Material.*—3 exs., Mahanadi, Cuttack (Orissa State), 18 Oct. 1954. ; 2 exs., Mahanadi near Anicut, Cuttack (Orissa State), 19 Oct. 1954 ; 1 ex., Mahanadi at Narsinghpur (Orissa State), 21 Oct. 1954 ; 1 ex., Sambalpur (Orissa State), 11 Nov. 1954 ; 3 exs., a pond near the main road leading to the batching plant of the dam, Hirakud (Orissa State), 25 Nov. 1954.

*Distribution.*—India : throughout North India. Extra-Indian : Bangladesh ; Pakistan ; Nepal ; Burma.

### 30. *Gagata cenia* (Hamilton)

1822. *Pimelodus cenia* Hamilton, *Fishes of Ganges* : 174, 376 pl. 21, fig. 57 (Type-locality, Northern parts of Bengal).

*Material.*—2 exs., Mahanadi near the Anicut, Cuttack (Orissa State), 18 Oct. 1954.

*Distribution.*—India : throughout North India. Extra-Indian : Bangladesh ; Pakistan ; Burma.

*Remarks.*—Job, David and Das (1955) synonymised *Gagata cenia* with *Gagata gagata* (Hamilton). The two species are distinguished by the relative lengths of the dorsal fin and also by the colouration (see Hora & Law, 1941).

### 31. *Bagarius bagarius* (Hamilton)

1822. *Bimelodus bagarius* Hamilton, *Fishes of Ganges* : 186, 378 pl. 7, fig. 62 (Type-locality, Ganges).

*Material.*—1 ex., Mahanadi, near the Anicut, Cuttack (Orissa State), 19 Oct. 1954 ; 1 ex., Sambalpur (Orissa State), 11 Nov. 1954.

*Distribution.*—India : throughout North India. Extra-Indian : Bangladesh ; Pakistan ; Burma ; Malaya ; Thailand ; Indo-China.

### 32. *Xenentodon cancila* (Hamilton)

1822. *Belone cancila* Hamilton, *Fishes of Ganges* : 213, 380, pl. 27, fig. 70 (Type-locality, Ponds and smaller rivers of Gangetic Provinces).

*Material.*—1 ex., Mahanadi near Kamli Bazar, Sambalpur (Orissa State), 11 Nov. 1954.

*Distribution.*—India : throughout. Extra-Indian : Bangladesh ; Pakistan ; Sri Lanka ; Burma.

### 33. *Channa punctatus* (Bloch)

1793. *Ophicephalus punctatus* Bloch. *Ausländischen Fische.*, 4 : 139, pl. 358 (Type-locality, Malabar).

*Material.*—3 exs., Mahanadi at Narsinghpur (Orissa State), 20, 21 Oct. 1954 ; 3 exs., Pension para tank near Circuit House, Sambalpur (Orissa State), 12 Nov. 1954 ; 1 ex., Raigarh (Madhya Pradesh), 16 Nov. 1954.

*Distribution.*—India : throughout. Extra-Indian : Bangladesh ; Pakistan ; Sri Lanka ; Burma ; Malaya ; China ; Polynesia.

*Remarks.*—This is generally a tank fish, occurring infrequently in the rivers.

34. *Channa striatus* (Bloch)

1793. *Ophicephalus striatus* Bloch, *Ausländischen Fische.*, 4 : 141, pl. 359, (Type-locality, Malabar).

*Material.*—1 ex., Mahanadi at Narsinghpur (Orissa State), 20 Oct. 1954 ; 1 ex, Raigarh (Madhya Pradesh), 16 Nov. 1954.

*Distribution.*—India : throughout. Extra-Indian : Bangladesh ; Pakistan ; Sri Lanka , Burma ; China ; Polynesia.

*Remarks.*—As *C. Punctatus*, this species is also mainly a tank fish.

35. *Ambassis nama* (Hamilton)

1822. *Chanda nama* Hamilton, *Fishes of Ganges* : 109, 371, pl. 39, fig. 37 (Type-locality, Ponds throughout Bengal).

*Material.*—1 ex., Mahanadi below the Hirakud Dam (Orissa State), 15 Nov. 1954.

*Distribution.*—India : throughout. Extra-Indian : Bangladesh ; Pakistan ; Burma.

36. *Ambassis ranga* (Hamilton)

1822. *Chanda ranga* Hamilton, *Fishes of Ganges* : 113, 371, pl. 16, fig. 38 (Type-locality, Freshwater rivers of Gangetic Provinces).

*Material.*—1 ex., Mahanadi near Kamli Bazar, Sambalpur (Orissa State), 11 Nov. 1954 ; 4 exs., Ramsagar tank near the market and Bus stand, Sambalpur (Orissa State), 12 Nov. 1954.

*Distribution.*—India : throughout. Extra-Indian : Bangladesh ; Pakistan ; Burma ; Malaya ; Thailand.

37. *Badis badis* (Hamilton)

1822. *Labrus badis* Hamilton. *Fishes of Ganges*: 70, 368, pl. 25, fig. 23 (Type locality. not known).

*Material.*—1 ex., Ramsagar tank near the market and Bus stand, Sambalpur (Orissa State), 12 Nov. 1954.

*Distribution.*—India : throughout. Extra-Indian : Bangladesh ; Pakistan ; Burma.

*Remarks.*—Job, David and Das (1955) reported this fish as rare.



38. *Rhinomugil corsula* (Hamilton)

1822. *Mugil corsula* Hamilton, *Fishes of Ganges* : 221, 381, pl. 9, fig. 97 (Type-locality, rivers of the Gangetic Provinces and in the southern parts of Bengal).

*Material*.—4 exs., Mahanadi, Cuttack (Orissa State), 19 Oct. 1954; 3 exs., Mahanadi near Kamli Bazar, Sambalpur (Orissa State), 11 Nov. 1954.

*Distribution*.—India : throughout North India. Extra-Indian : Bangladesh; Pakistan.

39. *Glossogobius giuris giuris* (Hamilton)

1822. *Gobius giuris* Hamilton, *Fishes of Ganges* : 51, 366, pl. 33, fig. 15 (Type-locality, ponds and freshwater rivers of Gangetic Provinces).

*Material*.—12 exs., Mahanadi at Narsinghpur (Orissa State), 20, 21 Oct. 1954; 2 exs., Mahanadi, near Kamli Bazar, Sambalpur (Orissa State), 11 Nov. 1954; 1 ex., near the dam, Hirakud (Orissa State), 15 Nov. 1954; 1 ex., Raigarh (Madhya Pradesh), 16 Nov. 1954.

*Distribution*.—India : throughout. Extra-Indian : Bangladesh; Pakistan; whole of Asia; China; Japan; Philippines; Melanesia; Polynesia; Australia; East Africa.

40. *Mastocembelus armatus armatus* (Lacépède)

1800. *Macrogathus armatus* Lacépède, *Hist. Poissons*, 2: 286, (Type-locality, Bengal).

*Material*.—1 ex., Mahanadi at Narsinghpur (Orissa State), 21 Oct. 1954; 2 exs., Mahanadi near Kamli Bazar, Sambalpur (Orissa State), 11 Nov. 1954.

*Distribution*.—India : throughout. Extra-Indian : Bangladesh; Pakistan; Sri Lanka; Burma; Thailand.

*Remarks*.—This species is frequently caught in traps.

41. *Mastocembelus pancalus* (Hamilton)

1822. *Macrogathus pancalus* Hamilton, *Fishes of Ganges* : 30, 364 (Type-locality, Tanks of Gangetic Provinces).

*Material.*— 2 exs., Mahanadi at Narsinghpur (Orissa State), 21 Oct. 1954.

*Distribution.*—India : throughout. Extra-Indian : Bangladesh; Pakistan.

#### 42. *Macrogathus aculeatum* (Bloch)

1795. *Ophidium aculeatum* Bloch, *Naturg. Ausland. Fische*, pl. 159, fig. 2 (Type-locality. Not mentioned).

*Material.*—1 ex., Mahanadi at Narsinghpur (Orissa State), 21 Oct. 1954; 2 exs., Mahanadi near Kamli Bazar, Sambalpur (Orissa State), 11 Nov. 1954.

*Distribution.*—India : throughout. Extra-Indian : Bangladesh; Pakistan; Burma; Sri Lanka; Malaya; Malay Archipelago; Thailand; Indo-China; China.

*Remarks.*—Hora (1940) stated that this estuarine species is likely to be found in inland waters more widely. The record of this species in Mahanadi from Narsinghpur extends its inland distribution further than so far known in this river system.

#### SUMMARY

A report on the fish collection obtained from the Mahanadi drainage system in Orissa and Madhya Pradesh in a stretch extending from Cuttack to Seorinarayan, a distance of about 350 km., is presented in this paper. 42 species are recorded of which some continue to live above and below the Hirakud Dam. Taxonomic notes on a few interesting species are given. *Osteobrama cotio Peninsularis* Silas is recorded for the first time from this river system.

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