ON A COLLECTION OF FISH FROM LAKE CHILKA, ORISSA

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(With 1 Text-figure)

CONTENTS

I—INTRODUCTION

The first detailed systematic account of the fish fauna of the Chilka Lake is to be found in the papers of Chaudhuri (1916 ; 1917 ; 1923) and Hora (1923). They recorded 118 species from the Lake.

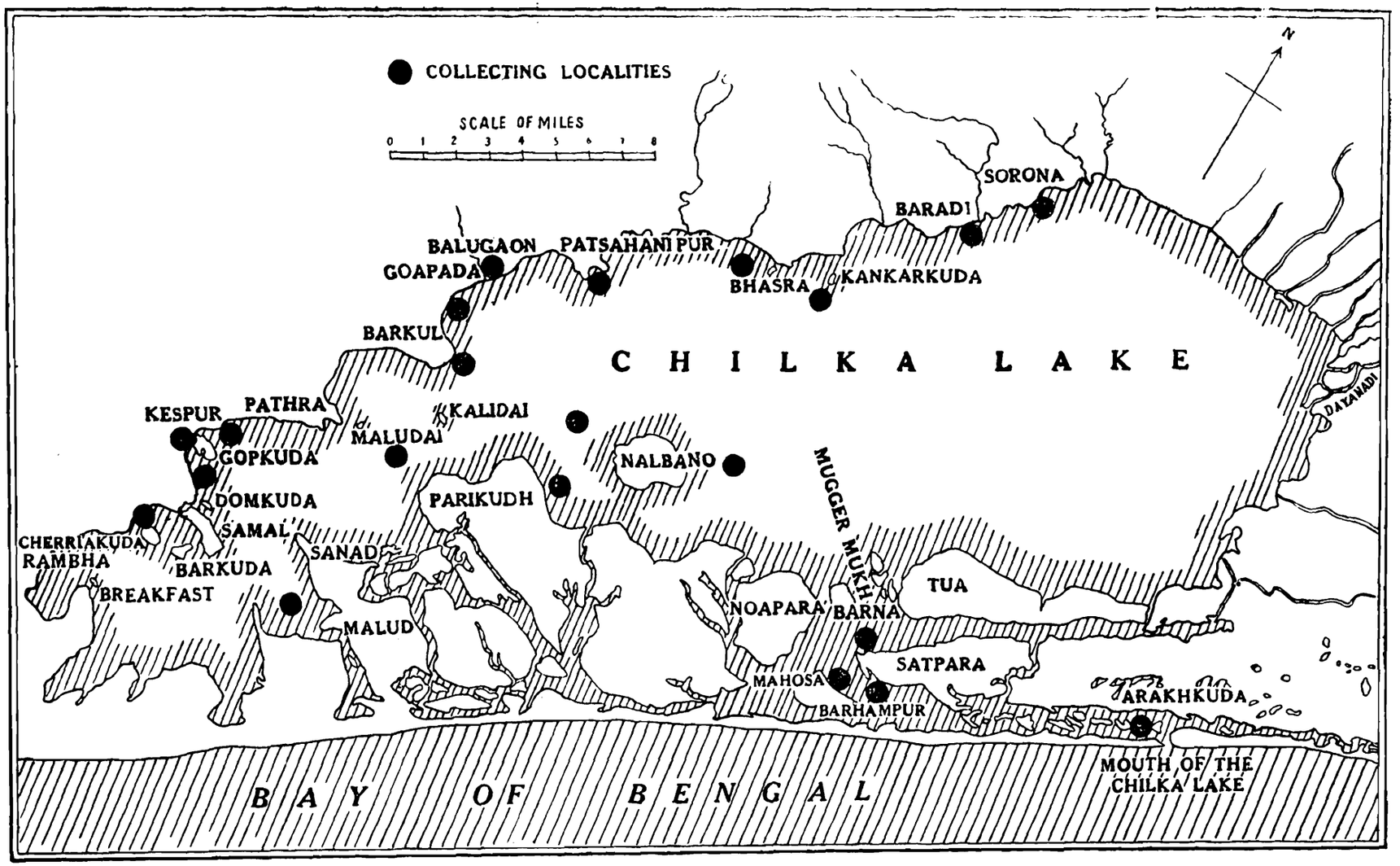
The present paper is based on a collection of fishes made during the period 20th January to 10th February 1954 by a Zoological Survey of India party, including the author, under the leadership of Dr. K. S. Misra, Assistant Superintendent. The survey covered 21 collecting localities spread along the shorewaters and midwaters of the main area and the outer channel of the Lake (Text-fig. 1). The number of specimens collected from each locality is mentioned within brackets.

I am grateful to Dr. M. L. Roonwal, Director, and Dr. K. S. Misra, Assistant Superintendent, for going through the manuscript of this paper.

II—SYSTEMATIC ACCOUNT

1. **Carcharhinus limbatus** (M. & H.)

Outer channel near the mouth of L. Chilka (1). Total length 1050 mm. First record from the Lake.



TEXT-FIG.1.—Map of Chilka Lake (Orissa), showing collecting localities.

2. **Elops saurus** L.

(i) Outer channel near the mouth of L. Chilka (1). (ii) Off the shores of Kespur, about 12 miles S. W. of Balugaon (1). Total length 264, 277 mm.

3. **Megalops cyprinoides** (Brouss.)

Off Bhasra Id., about 2 miles S. of Nairi and 10 miles E. of Balugaon (1). Total length 265 mm.

4. **Sardinella melanura** (C.)

(i) Outer channel near the mouth of L. Chilka (4). (ii) About half a mile N. W. of Parikudh (1). Total length 90—140 mm. First record from the Lake.

5. **Hilsa ilisha** (Ham.)

(i) Off Bhasra Id., about 2 miles S. of Nairi and 10 miles E. of Balugaon (1). (ii) About 2 miles E. of Nalbano (1). Total length 245—310 mm.

6. **Kowala coval** (C.)

(i) About 3 miles S. of Kalidai Id. (4). (ii) About 2 miles off Nalbano Id. (4). Total length 64—71 mm.

7. **Nematalosa nasus** (Bl.)

(i) About half a mile N. W. Parikudh (2). (ii) Off Baradi, nearly 12 miles E. of Balugaon (2). (iii) Off Sorona, about 16 miles E. of Balugaon (1). (iv) About 3 miles S. of Kalidai Id. (1). (v) Off Ke pur, about 12 miles S. W. of Balugaon (1). (vi) About 2 miles E. of Nal^{s}bano Id. (3). Total length 98-149 mm.

8. **Anodontostoma chacunda** (Ham.)

(i) About half a mile N. W. Parikudh (1). (ii) About 2 miles E. of Nalbano Id. (1). (iii) S. of Cherriyakuda Id., near Jagannathpatana about $4\frac{1}{2}$ miles N. of Rambha (1). Total length 83-155 mm.

9. **Thrissocles kammalensis** (Blkr.)

Off Baradi, nearly 12 miles E. of Balugaon (1). Total length 103 mm. New record from the Lake.

10. **Thrissocles malabaricus** (Bl.)

(i) Off Bhasra Id., about 2 miles S. of Nairi (3). (ii) About 3 miles S. of Kalidai Id. (2). (iii) S. of Cherriyakuda Id., near Jagannathpatana about $4\frac{1}{2}$ miles E. of Rambha (1). Total length 119-209 mm.

11. **Thrissocles rambhae** (Chaudhuri)

About 2 miles E. of Nalbano Id. (4). Total length 155—175 mm.

12. **Thrissocles valenciennesi**(Blkr.)

Off Baradi, about 13 miles E. of Balugaon (2). Total length 120-148 mm.

13. **Anchoviella indica** (v. Hasselt)

(i) About half a mile N. W. of Parikudh (3). (ii) About 3 miles S. of Kalidai Id. (1). Total length 76—112 mm.

14. **Anchoviella tri** (Blkr.)

Off Bhasra Id., about 12 miles S. of Nairi (1). Total length 70 mm.

15. **Puntius sophore** (Ham.)

(i) Inshore waters off Baradi, about 12 miles E. of Balugaon (3) (ii) Inshore waters off Sorona, about 16 miles E. of Balugaon (2). (iii Mouth of a partially dried up nullah opening into the Lake near Goapara about 20 miles S. W. of Balugaon (3). Total length 37—64 mm.

16. **Puntius ticto** (Ham.)

Inshore waters at Barkul Pt. (1). Total length 24 mm.

17. **Puntius vittatus** (Day)

(i) Rocky pools in shorewaters at Gheokala, Patsahnipur (2). (ii) Inshore waters along the southern and western shores of Satpara Id., in the vicinity of the Dak Bungalow (1). (iii) Inshore waters off Kespur, nearly 12 miles S. W. of Balugaon (5). (iv) Inshore waters N. of Gopkuda Id., below the Rly. line, nearly 8 miles N. E. of Rambha (1). (v) Inshore-waters S. of Gopkuda Id., below the Rly. line, nearly 7 miles N. E. of Rambha (2). Total length 20-25 mm.

18. **Brachydanio rerio** (Ham.)

Inshore waters off Sorona, nearly 16 miles E. of Balugaon and 3 miles W. of Jaripara P. O. (2). Total length 17, 21 mm. New record from the Lake.

19. **Rasbora daniconius** (Ham.)

Inshore waters off Sorona, nearly 16 miles E. of Balugaon and 3 miles W. of Jaripara P. O. (1). Total length 31 mm. First record from the Lake.

20. **Oxygaster bacaila** (Ham.)

(i) Inshore waters off Sorona, nearly 16 miles E. of Balugaon and 3 miles W. of Jaripura P. O. (2). (ii) Mouth of a partially dried up nullah opening into the Lake near Goapara, about 2 miles S. W. of Balugaon (2). Total length 78-100 mm. New record from the Lake.

21. **Lepidocephalichthys guntea** (Ham.)

Mouth of a partially dried up nullah opening into the Lake near Goapara, about 2 miles S. W. of Balugaon (2). Total length 50, 51 mm. First record from the Lake.

22. **Tachysurus arius** (Ham.)

Off the shores of Mosa and Burhampur, nearly 3 miles S. W. of Satpara Dak Bungalow (1). Total length 382 mm.

23. **Osteogeneiosus militaris** (L.)

About 10 miles N. W. of Parikudh (4). Total length 271—381 mm.

24. **Plotosus canius** (Ham.)

Off Sorona nearly 16 miles E. of Balugaon and 3 miles W. of Jaripara P. O. (2). Total length 75, 90 mm.

25. **Mystus gulio** (Ham.)

About 3 miles S. of Kalidai Id. (1). Total length 133 mm.

26. **Mystus vittatus** (Bl.)

(i) Off Baradi, nearly 12 miles E. of Balugaon (3). (ii) Off Sorona, nearly 16 miles E. of Balugaon and 3 miles W. of Jaripara P. O. (3). (iii) Off Bhasra, about 2 miles S. of Nairi and 10 miles E. of Balugaon (1). (iv) Off the creeks of Gheokala, Patsahnipur (1). (v) Off the shores of Mahosa and Barhampur Ids., nearly 3 miles S. W. of Satpara Dak Bungalow (3). (vi) Off the southern and western shores of Satpara Id., in the vicinity of the Dak Bungalow (1). (vii) Off Kespur, nearly 12 miles S. W. of Balugaon (1). Total length 68—146 mm.

27. **Clarias batrachus** (L.)

Inshore puddles at Baradi, nearly 12 miles E. of Balugaon (1). Total length 167 mm.

28. **Tylosurus strongylura** (v. Hasselt)

(i) Off Sorona, nearly 16 miles E. of Balugaon and 3 miles W. of Jaripara P. O. (1). (ii) Off Kespur, nearly 12 miles S. W. of Balugaon (1). (iii) About 2 miles E. of Nalbano Id. (1). Total length 234—392 mm.

29. **Hemirhamphus gaimardi** (V.)

(i) Off Baradi, nearly 12 miles E. of Balugaon (3). (ii) Off Sorona, nearly 16 miles E. of Balugaon and 3 miles W. of Jaripara P. O. (1). (iii) Off Bhasra, nearly 2 miles S. of Nairi and 10 miles E. of Balugaon (1). (iv) About 3 miles S. of Kalidai Id. (2). (v) N. of Gopkuda Id., below the Rly line, nearly 8 miles N. E. of Rambha (1). (vi) About 2 miles E. of Nalbano Id. (2). (vii) S. of Cherriyakuda Id., near Jagannathpatana, 4½ miles N. of Rambha (2). Total length 80—186 mm.

30. **Ichthyocampus carce** (Ham.)

(i) Off Bhasra Id., nearly 2 miles S. of Nairi and 10½ miles E. of Balugaon (1). (ii) Shorewaters about 2½ miles S. W. of Balugaon and 1½ miles E. of Burkul Bungalow (1). Total length 97, 108 mm.

31. **Oryzias melanostigmus** (Mc Clell.)

(i) Mouth of a partially dried up nullah opening into the Lake and near Goapara nearly 2½ miles S. W. of Balugaon (1). (ii) Rocky pools at Barkul Pt. (1). (iii) N. of Gopkuda Id., below the Rly. line, about 7 miles N. E. of Rambha (26). Total length 16—28 mm.

32. **Aplocheilus panchax** (Ham.)

(i) Mouth of a partially dried up nullah opening into the Lake near Goapara, about 2½ miles S. W. of Balugaon. (ii) S. of Gopkuda Id., below the Rly. line, nearly 7 miles N. E. of Rambha (2). Total length 21—41 mm.

33. **Sphyraena raghava** (Chaudhuri)

Off Bhasra Id., about 2 miles S. of Nairi and 10½ miles E. of Balugaon (1). Total length 249 mm.

34. **Mugil cephalus** (L.)

About 2 miles E. of Nalbano Id. (1). Total length 245 mm.

35. **Mugil speigleri** (Blkr.)

(i) Off Sorona, nearly 16 miles E. of Balugaon and 3 miles W. of Jaripara P. O. (3). (ii) Off the southern and western shores of Satpara Id., in the vicinity of the Dak Bungalow (1). (iii) About 2 miles S. of Kalidai Id. (2). (iv) About 2 miles E. of Nalbano Id. (4). (v) S. of Cherriyakuda Id., near Jagannathpatana, about 4½ miles N. E. of Rambha (4). Total length 128—197 mm.

36. **Mugil subviridis** (V.)

(i) Off Kankarpara Id., nearly 11 miles E. of Balugaon (1). (ii) Off Bhasra Id., nearly 2 miles S. of Nairi and 10½ miles E. of Balugaon (1). (iii) Off the southern and western shores of Satpara Id., in the vicinity of the Dak Bungalow (1). Total length 75—232 mm.

37. **Chelon oligolepis** (Blkr.)

(i) Off the southern and western shores of Satpara Id., in the vicinity of the Dak Bungalow (2). (ii) About 2 miles E. of Nalbano Id. (2). Total length 46—78 mm.

38. **Chelon macrolepis** (Smith)

About 2 miles E. of Nalbano Id. (2). Total length 158, 169 mm.

39. **Eleutheronema tetradactylus** (Shaw)

(i) About half a mile N. W. of Parikudh (3). (ii) Off Baradi, nearly 13 miles E. of Balugaon (1). (iii) Off Sorona, nearly 16 miles E. of Balugaon and 3 miles W. of Jaripara P. O. (3). (iv) About 3 miles S. of Kalidai Id. (1). (v) About 2 miles E. of Nalbano Id. (2). (vi) S. of Cherriyakuda Id., near Jagannathpatana, about 4½ miles N. E. of Rambha (1). Total length 162—277 mm.

40. **Channa punctatus** (Bl.)

(i) Shorewaters off Baradi, nearly 12 miles E. of Balugaon (1). (ii) Shorewaters off Sorona, nearly 16 miles E. of Balugaon and 3 miles W. of Jaripara P. O. (1). (iii) Mouth of a partially dried up nullah opening into the Lake near Goapara, about 2½ miles S. W. of Balugaon (1). Total length 48—149 mm.

41. **Lates calcarifer** (Bl.)

About 2 miles E. of Nalbano Id. (1). Total length 203 mm.

42. **Ambassis commersonii** (C.)

Rocky pools at Gheokala, Patsahnipur (3). Total length 41—71 mm.

43. **Ambassis ranga** (Ham.)

Shorewaters off Baradi, nearly 12 miles E. of Balugaon (1). Total length 29 mm.

44. **Therapon jarbua** (Forsk.)

Off Kespur, nearly 12 miles S. W. of Balugaon (1). Total length 145 mm.

45. **Therapon puta** (C.)

(i) Outer channel near the mouth of the Lake (2). (li) About 8 miles B. of Nalbano Id. (1). (iii) S. of Cherriyakunda Id. near Jagannathpatna, abont 4½ miles N. E. of Rambha (1). Total length 92—135mm.

46. **Sillago sihama** (Forsk.)

(i) About 5 miles off Gheokala, Patsahnipur (1). (ii) Off the southern and western shores of Satpara Id., in the vicinity of the Dak Bungalow (1), (iii) Off Kospur about 12 miles S. W. Balugaon (1). Total length 97—191 mm.

47. **Carnax carangus** (Bl.)

Off Bhasra Id., nearly 2½ miles S. of Nairi and 10½ miles E. of Balugaon (2). Total length 185, 189 mm.

48. **Caranx praeustus** (Bennett)

Outer channel near the mouth of the Lake (1). Total length 128 mm.

49. **Atule mate** (C.)

About half a mile N. W. of Parikudh (3). Total length 126—133 mm. New record from the Lake.

50. **Datnioides quadrifasciatus** (Sevastianof)

Off Sorona, nearly 16 miles E. of Balugaon and 3 miles W. of Jaripara P. O. (4). Total length 28—175 mm.

51. **Leiognathus daura** (C.)

(i) About half a mile N. W. of Parikudh (2). (ii) Off Bastara, nearly 2 miles S. of Nairi (1). Total length 40—94 mm.

52. **Leiognathus dussumieri** (V.V.)

Off Baradi, nearly 12 miles E. of Balugaon (2). Total length 69. 84 mm. New record from the Lake.

53. **Leiognathus equulus** (Forsk.)

(j) Off Bhasra Id., nearly 2 miles S. of Nairi (3). (ii) Off the southern and western shores of Satpara Id., in the vicinity of Dak Bungalow (2) (iii) About 2 miles E. of Nalbano Id. (3). (iv) N. of Gopkuda Id., below the Rly. line about 8 miles N. E. Rambha (1). Total length 57—124 mm.

54. **Leiognathus insidiator** (Bl.)

About half a mile N. W. of Parikudh (4). Total length 38—55 mm. First record from the Lake.

55. **Gerres filamentosus** (C.)

Off Kespur, nearly 12 miles S. W of Balugaon (1). Total length 78 mm.

56. **Gerres setifer** (Ham.)

(i) Off Bhasra Id., nearly 2½ miles S. of Nairi (2). (ii) Off the shores of Mosa and Burhampur Ids., nearly 3 miles S. W. of Satpara Dak Bungalow (1). (iii) About 3 miles S. of Kalidai Id. (3). Total length 88—156 mm.

57. **Gerres poeti** (C.)

N. of Gopkuda Id., below the Rly. line, nearly 8 miles E. of Rambha (1) Total length 122 mm.

58. **Pomadasys hasta** (Bl.)

(i) Off Baradi, nearly 12 miles E. of Balugaon and 3 miles W of Jaripara P. O. (2). (ii) Off Sorona, nearly 16 miles E. of Balugaon (1). (iii) Off Bhasra, nearly 2 miles S. of Nairi (1). (iv) Off the shores of Mosa and Burhampur Ids., nearly 3 miles S. W of Satpara Dak Bungalow (1). Total length 94—140 mm.

59. **Sciaena dussumieri** (V.)

(i) About 3 miles S. of Kalidai Id. (3). (ii) Off Kespur, nearly 12 miles S. W of Balugaon (2). Total length 101—130 mm.

60. **Sciaena macropterus** (Blkr.)

(i) About half a mile N. W of Parikudh (3). (ii) Off Baradi, nearly 12 miles E. of Balugaon (3). (iii) About 2½ miles N. E. of Nalbano Id. (3). (iv) S. of Cherriyakuda Id., near Jagannathpatana, about 4½ miles N. E. of Rambha (2). Total length 98—158 mm.

61. **Crenidens crenidens** (Forsk.)

(i) Off the shores of Mosa and Burhampur Ids., nearly 3 miles S. W of Satpara Dak Bungalow (1). (ii) Off Kespur, nearly 12 miles S. W of Balugaon (1). Total length 153—239 mm. New record from the Lake.

62. **Etroplus suratensis** (Bl.)

(i) Off Sorona, nearly 16 miles E. of Balugaon and 3 miles W of Jaripara P. O. (1). (ii) Off Kespur, nearly 12 miles S. W. of Balugaon (2) Total length 106—173 mm. First record from the Lake.

63. **Petroscirtes bhattacharyae** (Chaudhuri)

Rocky pools at Gheokala, Patsahnipur (2). Total length 25, 27 mm.

64. **Anabas testudineus** (Bl.)

Shallow pools in the Lake bed near Baradi, about 12 miles E. of Balugaon (2). Total length 101, 109 mm. New record from the Lake.

65. **Glossogobius biocellatus** (V.)

Southern and western shores of Satpara Id., in the vicinity of Dak Bungalow (2). Total length 30, 33 mm.

66. **Glossogobius giuris** (Ham.)

Mouth of a partially dried up nullah opening into the Lake near Goapara about 2½ miles S. W of Balugaon (10). Total length 15—30 mm.

67. **Brachygobius nunus** (Ham.)

(i) N. of Gopkuda Id., below the Rly. line, nearly 8 miles N. E. of Rambha (2). (ii) S. of Gopkuda Id., below the Rly. line, nearly 7 miles N. E. Rambha (15). Total length 10—18 mm.

68. **Acentrogobius globiceps** (Hora)

(i) Shorewaters off Kespur, nearly 12 miles S. W of Balugaon (6). (ii) N. of Gopkuda Id., below the Rly. line, about 8 miles N. E. of Rambha (14). (iii) S. of Gopkuda Id., below the Rly. line, about 7 miles N. E. of Rambha (10). Total length 15—37 mm.

69. **Platycephalus indicus** (L.)

About 2 miles E. of Nalbano (1). Total length 280 mm.

70. **Cynoglossus brevis** (Gthr.)

(i) About 5 miles S. E. of Gheokala, Patsahnipur (1). (ii) S. of Cherriyakuda Id., near Jagannathpatana, about 4½ miles N. E. of Rambha (6). Total length 117—155 mm.

71. **Chelanodon patoca** (Ham.)

Off Bhasra Id., nearly 2 miles S. of Nairi (2). Total length 30, 40 mm.

72. **Triacanthus brevirostris** (Schlegel)

(i) About half a mile N. W. of Parikudh (2). (ii) Off Baradi, nearly 14 miles E. of Balugaon (3). (iii) Off Sorona, nearly 16 miles E. of Balugaon and 3 miles W of Jaripara P. O. (1). (iv) Off Bhasra Id., nearly 2 miles S. of Nairi (1). (v) Off the shores of Mosa and urhampur Ids., nearly 3 miles S. W. of Satpara Dak Bungalow (1). (vi)Bff Kespur,

nearly 12 miles S. W. of Balugaon (1). (vii) N. of Gopkuda Id., below the Rly. line, nearly 8 miles N. E. of Rambha (1). Total length 28—130 mm.

Of the 72 species given above, *Carcharhinus limbatus*, *Sardinella melanura*, *Thrissocles kammalensis*, *Thrissocles valenciennesi*, *Brachydanio rerio*, *Rasbora daniconius*, *Oxygaster bacaila*, *Lepidocephalichthys guntea*, *Clarias batrachus*, *Atule mate*, *Leiognathus dussumieri*, *Leiognathus insidiator*, *Gerres poeti*, *Sciaena dussumieri*, *Crenidens crenidens*, *Etroplus suratensis* and *Anabas testudineus* are new records from the Chilka Lake. Of these new records, *Sardinella melanura* and *Atule mate* are marine species and were collected from the outer channel. The freshwater species *Brachydanio rerio*, *Rasbora daniconius*, *Oxygaster bacaila* and *Lepidocephalichthys guntea* were obtained from shallow shore waters in the vicinity of small nullahs opening into the the Lake. The rest of the newly recorded species as well as others mentioned above were taken from all over the main area of the Lake.

The total number of species so far known from the Chilka Lake is thus raised to 134, comprising of 87 genera, 51 families and 15 orders as given below :—

III—(a) LIST[1] OF FISHES SO FAR KNOWN FROM LAKE CHILKA

Class ELASMOBRANCHII
Subclass *SELACHII*
Order LAMNIFORMES
Suborder *SCYLIORHINOIDEI*
Family CARCHARHINIDAE

1. *Physodon mulleri* (M. H.)
2. *Carcharhinus gangeticus* (M.H.)
3. *Carcharhinus limbatus* (M.H.)
4. *Carcharhinus melanopterus* (Q.G.)

Order RAJIFORMES
Family PRISTIDAE

5. *Pristis pectinatus* Latham

Family TRYGONIDAE

6. *Dasyatis* (*Himantura*) *uarnak* (Forsk.)
7. *Dasyatis* (*Amphotistius*) *imbricata* (Schn.)
8. *Dasyatis* (*Pastinachus*) *sephen* (Forsk.)

Family MYLIOBATIDAE

9. *Aetobatus narinari* (Euphrasen)
10. *Aetomylus nichofi* (Schn.)

Class TELEOSTOMI
Subclass *ACTINOPTERYGII*
Order CLUPEIFORMES
Suborder *CLUPEOIDEI*
Family ELOPIDAE

11. *Elops saurus* (L.)

[1] Classification after L. S. Berg (1940).

Family MEGALOPIDAE

12. *Megalops cyprinoides* (Broussnet)

Family CLUPEIDAE

13. *Sardinella melanura* (C.)
14. *Hilsa ilisha* (Ham.)
15. *Kowala coval* (C.)
16. *Nematalosa nasus* (Bl.)
17. *Anodontostoma chacunda* (Ham.)
18. *Thrissocles annandalei* (Chaudhuri)
19. *Thrissocle kammalensis* (Blkr.)
20. *Thrissocles kempi* (Chaudhuri)
21. *Thrissocles malabaricus* (Bl.)
22. *Thrissocles mystax* (Schn.)
23. *Thrissocles purava* (Ham.)
24. *Thrissocles rambhae* (Chaudhuri)
25. *Thrissocles valenciennesi* (Blkr.)
26. *Anchoviella commersonii* (Lac.)
27. *Anchoviella indica* (v. Hasselt)
28. *Anchoviella tri* (Blkr.)

Suborder *CHANOIDEI*

Family CHANIDAE

29. *Chanos chanos* (Forsk.)

Order CYPRINIFORMES

Suborder *CYPRINOIDEI*

Family CYPRINIDAE

30. *Puntius sophore* (Ham.)
31. *Puntius ticto* (Ham.)
32. *Puntius vittatus* Day
33. *Brachydanio rerio* (Ham.)
34. *Rasbora daniconius* (Ham.)
35. *Oxygaster bacaila* (Ham.)
36. *Cirrhina latius* (Ham.)

Family COBITIDAE

37. *Lepidocephalichthys guntea* (Ham.)

Suborder *SILUROIDEI*

Family ARIIDAE

38. *Tachysurus arius* (Ham.)
39. *Tachysurus caelatus* (V.)
40. *Tachysurus falcarius* (Richardson)
41. *Tachysurus satparanus* (Chaudhuri)
42. *Osteogeneiosus militaris* (L.)

Family PLOTOSIDAE

43. *Plotosus canius* Ham.

Family SILURIDAE
44. *Wallago attu* (Bl. Schn.)
45. *Ompok bimaculatus* (Bl.)

Family BAGRIDAE
46. *Mystus cavasius* (Ham.)
47. *Mystus gulio* (Ham.)
48. *Mystus vittatus* (Bl.)

Family SCHILBEIDAE
49. *Pangasius pangasius* (Ham.)

Family CLARIIDAE
50. *Clarias batrachus* (L.)

Order ANGUILLIFORMES
Suborder *ANGUILLOIDEI*
Family MURAENESOCIDAE
51. *Muraenesox cinereus* (Forsk.)

Family MURAENIDAE
52. *Thyrsoidea macrurus* (Blkr.)

Family OPHICHTHYIDAE
53. *Ophichthys chilkensis* (Chaudhuri)
54. *Pisodonophis boro* (Ham.)

Order BELONIFORMES
Suborder *SCOMBERESOCOIDEI*
Family BELONIDAE
55. *Tylosurus strongylura* (v. Hasselt)

Suborder *EXOCOETOIDEI*
Family HEMIRHAMPHIDAE
56. *Hemirhamphus gaimardi* (V.)

Order SYNGNATHIFORMES
Suborder *SYNGNATHOIDEI*
Family SYNGNATHIDAE
57. *Ichthyocampus carce* (Ham.)
58. *Hippocampus brachyrhynchus* (Duncker)

Order CYPRINODONTIFORMES
Suborder *CYPRINODONTOIDEI*
Family CYPRINODONTIDAE
59. *Oryzias melastigmus* (Mc Clell.)
60. *Aplocheilus panchax* (Ham.)

Order MUGILIFORMES
Suborder *SPHYRAENOIDEI*
Family SPHYRAENIDAE
61. *Sphyraena raghava* (Chaudhuri)

Suborder *MUGILOIDEI*

Family MUGILIDAE

62. *Mugil caeruleomaculatus* (Lac.)
63. *Mugil cephalus* (L.)
64. *Mugil cunnesius* V.
65. *Mugil jerdoni* (Day)
66. *Mugil speigleri* (Blkr.)
67. *Mugil subviridis* V.
68. *Mugil tade* (Forsk.)
69. *Chelon macrolepis* (Smith)
70. *Chelon oligolepis* (Blkr.)

Order POLYNEMIFORMES

Family POLYNEMIDAE

71. *Eleutheronema tetradactylus* (Shaw)

Order OPHIOCEPHALIFORMES

Family OPHIOCELPHALIDAE

72. *Channa punctatus* (Bl.)

Order PERCIFORMES

Suborder *PERCOIDEI*

Family CENTROPOMIDAE

73. *Lates calcarifer* (Bl.)
74. *Ambassis commersoni* C.
75. *Ambassis gymnocephalus* (Lac.)
76. *Ambassis ranga* (Ham.)

Family THERAPONIDAE

77. *Therapon jarbua* (Forsk.)
78. *Therapon puta* C.

Family SILAGINIDAE

79. *Sillago sihama* (Forsk.)

Family CARANGIDAE

80. *Caranx carangus* (Bl.)
81. *Caranx praeustus* (Bennett)
82. *Atule mate* (C.)

Family LUTIANIDAE

83. *Lutianus johii* (Bl.)

Family LOBOTIDAE

84. *Datnioides quadrifasciatus* (Sevastianof)

Family LEIOGNATHIDAE

85. *Leiognathus blochii* (V.)
86. *Leiognathus daura* (C.)
87. *Leiognathus dussumieri* (V.)
88. *Leiognathus equulus* (Forsk.)
89. *Leiognathus insidiator* (Bl.)
90. *Gazza minuta* (Bl.)
91. *Gerres filamentosus* (C.)

92. *Gerres oyena* (Forsk.)
93. *Gerres poeti* (C.)
94. *Gerres setifer* (Ham.)

Family POMADASYSIDAE
95. *Pomadasys hasta* (Bl.)

Family SCIAENIDAE
96. *Sciaena dussumieri* (V.)
97. *Sciaena macropterus* (Blkr.)
98. *Sciaena russellii* (C.V.)
99. *Pseudosciaena coiber* (Ham.)

Family PSETTIDAE
100. *Monodactylus argenteus* (L.)

Family GIRELLIDAE
101. *Crenidens crenidens* (Forsk.)

Family CICHILIDAE
102. *Etroplus suratensis* (Bl.)

Suborder *BLENNIOIDEI*
Family BLENNIDAE
103. *Petroscirtes bhattacharyae* (Chaudhuri)

Suborder *ANABNTOIDEI*
Family ANABANTIDAE
104. *Anabas testudineus* (Bl.)

Suborder *GOBIODEI*
Family ELEOTRIDAE
105. *Eleotris fusca* (Bl. Schn.)
106. *Btuis butis* (Ham.)

Family GOBIIDAE
107. *Acentrogobius cyanomos* (Blkr.)
108. *Acentrogobius globiceps* (Hora)
109. *Bathygobius fuscus* (Ruppell)
110. *Brachygobius nunus* (Ham.)
111. *Glossogobius biocellatus* (V.)
112. *Glossogobius giuris* (Ham.)
113. *Glossogobius mas* (Hora)
114. *Gobiopterus chuno* (Ham.)
115. *Oligolepis acutipennis* (V.)
116. *Oligolepis cylindriceps* (Hora)
117. *Oxyurichthys tentacularis* (V.)
118. *Paragobiopsis ostreicola* (Chaudhuri)
119. *Parapocryptes rictuosus* (V.)
120. *Pseudapocryptes lanceolatus* (Bl. Schn.)
121. *Stigmatogobius javanicus* (Blkr.)
122. *Stigmatogobius minima* (Hora)
123. *Taenioides chilkensis* (Hora)

Family PERIOPHTHALMIDAE

124. *Periophthalmus koelreuteri* (Pallas)

Suborder *COTTOIDEI*

Family PLATYCEPHALIDAE

125. *Platycephalus indicus* (L.)

Order PLEURONECTIFORMES

Suborder *PLEURONECTOIDEI*

Family BOTHIDAE

126. *Pseudorhombus arsius* (Ham.)

Family SOLEIDAE

127. *Synaptura orientalis* (Bl. Schn.

Family CYNOGLOSSIDAE

128. *Cynoglossus brevis* Gthr.

Order MASTACEMBELIFORMES

Family MASTACEMBELIDAE

129. *Mastacembelus armatus* (Lac.)

Order TETRODONTIFORMES

Suborder *BALISTOIDEI*

Family TRIACANTHIDAE

130. *Triacanthus brevirostris* (Schlegel)

Suborder *TETRODONTOIDEI*

Family TETRODONTIDAE

131. *Torquigener oblongus* (Bl. Schn.)

132. *Chelanodon patoca* (Ham.)

133. *Chelanodon fluviatilis* (Ham.)

134. *Arothron reticularis* (Bl. Schn.)

III—(*b*) TABLE [1] OF IDENTIFICATION OF THE FISHES OF THE CHILKA LAKE

1(3). Gill slits covered by gill cover : skeleton bony : body without placoid scales.

2(97). Gill slits naked, without gill cover : skeleton cartilaginous : body with placoid scales.

3(5). Body symmetrical : eyes on either side of head.

4(93). Body asymmetrical : both eyes on same side of head.

5. Body with bony rings : gill openings reduced to small, dorsal apertures Fam. SYNGNATHIDAE, (*a*)-(*b*).

(*a*) Caudal fin present : tail not prehensile · *Ichthyocampus carce* (Ham.)

(*b*) Caudal fin absent : tail prehensile .. *Hippocampus brachyrhynchus* Duncker.

[1] This artificial key is applicable mainly to the species dealt with in the Table.

6(7). Body without bony rings : gill openings not reduced to small, dorsal apertures.

7(9). Both jaws much produced and bill-like, or only lower jaw produced.

8(11). Both jaws normal, neither produced nor bill-like.

9. Both jaws produced and bill-like : mouth large .... Fam. BELONIDAE ....*Tylosurus strongylura* (v. Hasselt) (=*Belone strongylura*).

10. Only lower jaw produced and bill-like : mouth small .... Fam. HEMIRHAMPHIDAE .... *Hemirhamphus gaimardi* V. (=*Hemirhamphus limbatus*).

11(13). Pelvics united and disc-like, or closely apposed together:

12(17). Pelvics neither united, disc-like nor closely apposed together.

13(15). Pelvics united and disc-like.

14. Pelvics separate and closely apposed together ... Fam. ELEOTRIDAE, (*a*)-(*b*).

(*a*). Snout blunt : lateral line scales 60-65 : lateral transverse scales 16-19 : predorsal scales 50 . . . *Eleotris fusca* (Bl. Schn.) (=*Eleotris cavifrons*).

(*b*). Snout pointed : lateral line scales 30 : lateral transverse scales 9-10 : predorsal scales 20 . . . . *Butis butis* (Ham.)

15. Eyes very prominent, placed close together : eye lids well developed .... Fam. PERIOPHTHALMIDAE ... *Periophthalmus koelreuteri* (Pallas).

16. Eyes neither very prominent nor placed close together : eyelids not well developed .... Fam. GOBIIDAE, (*a*)-(*q*).

(*a*). Body eel-like : single dorsal fin ... *Taenioides chilkensis* (Hora).

Body not eel-like : two dorsal fins separate or connected at their base .. .. (*b*).

(*b*). Teeth in lower jaw in several rows .. (*c*).

Teeth in lower jaw in single row .. (*p*).

(*c*). Caudal fin long, pointed or lanceolate, longer than head .. .. .. (*d*).

Caudal fin short, obtuse or rounded, shorter than head .. .. (*g*).

(*d*). Teeth in upper jaw in single row .. *Oxyurichthys tentacularis* (V.).

Teeth in upper jaw in several rows (*e*).

(*e*). Head scaly above and behind eyes .. *Acentrogobius cyanomos* (Blkr.) (=*Ctenogobius dentifer*).

Head naked above and behind eyes (*f*).

(*f*). Lateral line scales 27-30 : lateral transverse scales 7-8 .. .. .. *Oligolepis acutipennis* (V.) (=*Centrogobius acutipennis*).

Lateral line scales 25 : lateral transverse scales 5	*Oligolepis cylindriceps* (Hora).
(*g*). Maxillary prolonged beyond postorbit	*Paragobiopsis ostriecola* (Chaudhuri) (=*Gobius ostriecola*).
Maxillary not prolonged beyond post-orbit	(*h*).
(*h*). Upper pectoral rays free and silk-like	*Bathygobius fuscus* (Ruppell).
Upper pectoral rays neither free nor silk-like	(*i*).
(*i*) Gill openings wide, extending beyond pectoral base	(*j*).
Gill openings narrow, not extending beyond pectoral base	(*l*).
(*j*). Lateral line scales 24-26	*Glossogobius mas* (Hora.)
Lateral line scales 28-36	(*k*).
(*k*). Lateral transverse scales 7-8 : first dorsal with two ocelli	*Glossogobius biocellatus* (V.).
Lateral transverse scales 9-14 : first dorsal with one or no ocellus	*Glossogobius giuris* (Ham.).
(*l*). Foremost scale in median line behind eye enlarged	(*m*).
Foremost scale in median line behind eye not enlarged	(*o*).
(*m*). A median longitudinal groove on nape	*Brachygobius nunus* (Ham.) (=*Ctenogobius alcocki*).
No median longitudinal groove on nape	(*n*).
(*n*). Head 4·25 times in standard length : a dark stripe from eye to maxillary	*Stigmatogobius javanicus* (Blkr.) (=*Ctenogobius chilkensis*).
Head 3·7 times in standard length : no dark stripe from eye to maxillary	*Stigmatogobius minima* (Hora) (=*Ctenogobius minima*).
(*o*). Predorsal scales 14	*Acentrogobius cyanomos* (Blkr.).
Predorsal scales 7-8	*Acentrogobius globiceps* (Hora).
(*p*). Second dorsal fin long, 24-32 rays ..	(*q*).
Second dorsal fin short, 8-9 rays ..	*Gobiopterus chuno* (Ham.) (=*Micrapocryptes fragilis*).
(*q*). Scales minute, about 200 in lateral line : second dorsal with 31-32 rays	*Pseudapocryptes lanceolatus* (Bl. Schn.) (=*Apocryptes lanceolatus*).
Scales moderate, about 80 in lateral line : second dorsal with 24-27 rays	*Parapocryptes rictuosus* (V.) (=*Apocryptes rictuosus*).

17(19). Body very elongate, cylindrical and eel-like.

18(25). Body neither very elongate, cylindrical nor eel-like.

19. With 32-39 stumpy, dorsal spines Fam. MASTACEMBELIDAE *Mastacembelus armatus* (Lac.).

20(21). Without any stumpy, dorsal spines.

21. Snout elongate : upper jaw notched towards snout end . . Fam. MURAENESOCIDAE *Muraenesox cinereus* (Forsk.).

22(23). Snout moderate : upper jaw without a notch towards snout end.

23. Dorsal and anal fins united with caudal : pectorals absent .. Fam. MURAENIDAE *Tyrsoidea macrurus* (Blkr.)(=*Rhabdura macrurus*).

24. Dorsal and anal fins not united with caudal : pectorals present Fam. OPHICHTHYIDAE, (*a*)-(*b*).

(*a*). Length of head 3½ to 4 times in length from snout end to vent — *Pisodonophis boro* (Ham.) (=*Ophichthys hijala and O. (boro)*.

(*b*). Length of head 5½ times in length from snout end to vent — *Ophichthys chilkensis* (Chaudhuri).

25(27). Body scaleless or naked : pectoral fins with a strong, pungent spine.

26(37). Body scaly or not naked : pectoral fins without a strong pungent spine.

27. Two rayed dorsal fins : the long, second dorsal (procurrent caudodorsal) united with caudal and anal fins : caudal pointed .. . Fam. PLOTOSIDAE *Plotosus canius* (Ham.).

28(29). Single rayed dorsal fin (no procurrent caudodorsal) : caudal forked.

29(31). Anal fin long (45-93 rays) : dorsal without a pungent spine.

30(33). Anal fin short (9-34 rays) : dorsal with a pungent spine.

31. Dorsal fin long (62-76 rays) : 8 barbels ... Fam. CLARIIDAE,. *Clarias batrachus* (L.).

32. Dorsal fin short (4-5 rays) : 4 barbels Fam. SILURIDAE, (*a*)-(*b*)

(*a*). Cleft of mouth deep, extending beyond hind border of eye — *Wallago attu* (Bl. Schn.).

(*b*). Cleft of mouth narrow, not extending beyond hind border of eye — *Ompok bimaculatus* (Bl.) (=*Callichrous bimaculatus*).

33. Posterior nostrils with a valve : 2 or 6 barbels ...Fam ARIIDAE, (*a*)-(*b*).

(*a*). 2 semi-osseous barbels .. — *Osteogeneiosus militaris* (L.)

6 non-osseous barbels — (*b*).

(*b*). Teeth on palate villiform : dorsal spine as long as head — *Tachysurus caelatus* (V.) (=*Arius caelatus*).

Teeth on palate granular : dorsal spine shorter than head — (*c*).

(*c*). Band of teeth in upper jaw narrow, divided in the middle — *Tachysurus satparanus* (Chaudhuri) (=*Arius satparanus*).

Band of teeth in upper jaw broad, not divided in the middle — (*d*).

(*d*). Occipital process keeled: pectoral spine longer than dorsal spine — *Tachysurus falcarius* (Richardson) (=*Arius falcarius*).

Occipital process not keeled: pectoral spine as long as dorsal spine — *Tachysurus arius* (Ham.) (=*Arius arius*).

34(35). Posterior nostrils without a valve : 4 or 8 barbels.

35. Anal fin long (31-34 rays) : 4 barbels Fam. SCHILBEIDAE *Pangasius pangasius* (Ham).

36. Anal fin short (9-15 rays) : 8 barbels. Fam. BAGRIDAE, (*a*)-(*b*).

(*a*). Occipital process reaching basal bone of dorsal — (*b*).

Occipital process not reaching basal bone of dorsal — *Mystus gulio* (Ham.) (=*Macrones gulio*).

(*b*). Adipose dorsal long, commencing just behind rayed dorsal fin — *Mystus cavasius* (Ham.) (=*Macrones cavasius*).

Adipose dorsal short, commencing at a distance from rayed dorsal — *Mystus vittatus* (Bl.).

37. Pectoral fin with (4) free, elongated rays at its base .. Fam. POLYNEMIDAE *Eleutheronema tetradactylus* (Shaw).

38(39). Pectoral fin without any free, elongated rays at its base.

39. Two detached pre-anal spines .. Fam. CARANGIDAE, (*a*)-(*b*).

(*a*). Last dorsal and anal ray a little detached or finlet-like — *Atule mate* (C.).

Last dorsal and anal ray neither detached nor finlet-like — (*b*).

(*b*). Keeled scutes along lateral line, 33-37 : pectorals longer than head — *Caranx carangus* (Bl.).

Keeled scutes along lateral line, 25-30 : pectorals equal to or a little shorter than head .. — *Caranx praeustus* (Bennett).

40(41). No detached pre-anal spines.

41. With 2 strong pelvic spines .... Fam. TRIACANTHIDAE . *Triacanthus brevirostris* Schlegel.

42(43). Without any strong pelvic spines.

43(45). Pelvic fins present.

44. Pelvic fins absent Fam. TETRODONTIDAE, (*a*)-(*f*).

(*a*). Two nostrils on each side : lower lateral line with a distinct fold or keel	*Torquigener oblongus* (Bl. Schn.) (=*Tetrodon oblongus*).
A single nostril on each side or nasal sac open, appearing as two tentacles : lower lateral line absent or when present without fold or keel	(*b*).
(*b*). A single lateral line	*Arothron reticularis* (Bl. Schn.) (=*Tetrodon reticularis*).
Two lateral lines	(*c*).
(*c*). Dorsal fin with 14-16 rays : spines on body two-rooted, widely separated	*Chelanodon fluviatilis* (Ham.) (=*Tetrodon fluviatilis*).
Dorsal fin with 10-11 rays : spines on body four-rooted, widely separated	*Chelanodon patoca* (Ham.) (=*Tetrodon patoca*).

45. Gill opening reduced to a small foramen above the root of pectoral fins : dorsal origin anterior to gill opening Fam. BLENNIDAE *Petroscirtes bhattacharyae* Chaudhuri.

46(47). Gill opening not reduced to a small foramen above the root of pectoral fins : dorsal origin behind gill opening.

47(49). Single dorsal fin, with no distinct spinous and soft parts.

48(65). Two dorsal fins, or when single with distinct spinous and soft parts.

49. An erectile, bifid spine near eye : inner pectoral ray modified as spine. .Fam. COBITIDAE.....*Lepidocephalichthys guntea* (Ham.).

50(51). No erectile, bifid spine near eye : inner pectoral ray not modified as spine.

51. Dorsal fin in the posterior half of body : dorsal origin far behind anal origin. .Fam. CYPRINODONTIDAE, (*a*)-(*b*).

(*a*). Opening of mouth small, terminal : pectorals placed higher ..	*Oryzias melastigmus* (Mc Clell.) (=*Aplocheilus melastigmus*).
(*b*). Opening of mouth moderate, lateral : pectorals placed lower	*Aplocheilus panchax* (Ham.).

52(53). Dorsal fin not in the posterior half of body : dorsal origin not far behind anal origin.

53. Dorsal fin long (29-32 rays) : dorsal origin just above pectoral base : body sub-cylindrical Fam. OPHIOCEPHALIDAE, *Channa punctatus* (Bl.).

54(55). Dorsal fin short (9-24 rays) : dorsal origin far behind pectoral base : body not sub-cylindrical.

5(57). Abdomen keeled and serrated : lateral line absent.

56(59). Abdomen neither keeled nor serrated : lateral line present.

57. Upper jaw prominent, projecting over lower jaw : maxillaries much elongated.. Fam. ENGRAULIDAE, (*a*)-(*j*).

(*a*). Spiny abdominal scutes restricted between pectorals and pelvics : anal fin short — (*b*).

Spiny abdominal scutes not restricted between pectorals and pelvics : anal long — (*d*).

(*b*). Maxillary longer, reaching gill opening — (*c*).

Maxillary shorter, not reaching gill-opening — *Anchoviella indica* (v. Hass.) (=*Stolephorus indica*).

(*c*). Abdominal scutes between pectorals and pelvics 7 — *Anchoviella commersonii* (Lac). (=*Stolephorus commersonii*).

Abdominal scutes between pectorals and pelvics 4-5 — *Anchoviella tri* (Blkr.) (=*Stolephorus tri*).

(*d*). Maxillary extending beyond gill opening — (*e*).

Maxillary not extending beyond gill-opening — (*h*).

(*e*). Maxilliary reaching pectoral base — (*f*).

Maxilliary reaching beyond pectoral base — *Thrissocles valenciennesi* (Blkr.).

(*f*). Lower gill rakers 13 : anal fin more than 3 times in standard length — *Thrissocles mystax* (Schn.).

Lower gill rakers 11 : anal fin 2⅔ times in standard length — (*g*).

(*g*). Height of body 4¼ to 4½ times in total length — *Thrissocles purava* (Ham.) (=*Engraulis purava*).

Height of body 2⅔ times in total length — *Thrissocles annandalei* (Chaudhuri) (=*Engraulis annandalei*).

(*h*). Lower gill rakers 10-17 : abdominal scutes 22-23 — (*i*).

Lower gill rakers 27 : abdominal scutes 23-27 — (*j*).

(*i*). Lower gill rakers 10 : abdominal scutes 23 — *Thrissocles kempi* (Chaudhuri) (=*Engraulis kempi*).

Lower gill rakers 17 : abdominal scutes 22 — *Thrissocles rambhae* (Chaudhuri) (=*Engraulis rambhae*).

(*j*). Snout equal to eye : abdominal scutes 23 — *Thrissocles kammalensis* (Blkr.).

Snout ¾ of eye : abdominal scutes 27 — *Thrissocles malabaricus* (Bl)..

58. Upper jaw neither prominent nor projecting over lower jaw : maxillaries not much elongated. Fam. CLUPEIDAE, (*a*)-(*b*).

(*a*). Last dorsal ray prolonged into a filament	*Nematalosa nasus* (Bl.) (= *Dorosoma nasus*).
(*b*). Last dorsal ray not prolonged into a filament	(*b*).
(*b*). Upper jaw with a distinct median notch	*Hilsa ilisha* (Ham.).
Upper jaw without a distinct median notch	(*f*).
(*c*). Last 2 anal rays enlarged	*Sardinella melanura* (*C*).
Last 2 anal rays not enlarged ..	(*d*).
(*d*). Dorsal origin before pelvic origin : body deeper : lateral transverse scales 12-15	*Anodontostoma chacunda* (Ham.) (= *Dorosoma chacunda*).
Dorsal origin behind pelvic origin : body shallower : lateral transverse scales 9-11	*Kowala coval* (C.) (= *Clupeoides lile*).

59(61). An elongate, bony, gular plate between the rami and towards the end of lower jaw.

60(63). No bony, gular plate between the rami and towards the end of lower jaw.

61. Last dorsal ray produced to a filament : dorsal fin (16-21 rays shorter than anal fin (23-28 rays) : lateral line scales 37-42. . Fam. MEGALOPIDAE. *Megalops cyprinoides* (Brouss.).

62. Last dorsal ray not produced to a filament : dorsal (21-24 rays longer than anal (15-17 rays): lateral line scales 94-100 Fam. ELOPIDAE *Elops saurus* (L.).

63. Anal fin far behind dorsal fin : mouth small, terminal : gill membranes totally united below : accessory branchial organ present. Fam. CHANIDAE *Chanos chanos* (Forsk.).

64. Anal fin not far behind dorsal fin : mouth moderate, lateral : gill membranes not totally united below: no accessory branchial organ. Fam. CYPRINIDAE, (*a*)-(*f*).

(*a*). Abdominal edge cutting : lateral line scales 80-93	*Oxygaster bacaila* (Ham.).
Abdominal edge not cutting : lateral line scales 20-40	(*b*).
(*b*). Dorsal fin with an osseous ray : lateral line scales 20-26	(*c*).
Dorsal fin without an osseous ray: lateral line scales 26-40	(*e*).

(*c*). Lateral line complete : lateral line scales 23-26 : a dark spot near hind extremity of lateral line — *Puntius sophore* (Ham.) (=*Barbus sophore*).

Lateral line incomplete : lateral line scales 20-26 : 2 or 4 black spots on body — (*d*).

(*d*). 4 black spots on body : 3 rows of scales between lateral line and pelvic base : lateral line scales 20-22 : osseous ray weak, smooth — *Puntius vittatus* Day (=*Barbus vittatus*).

2 black spots on body : 4 or 5 rows of scales between lateral line and pelvic base : lateral line scales 23-26 : osseous ray strong, serrated — *Puntius ticto* (Ham.) (=*Barbus ticto*).

(*e*). Cleft of mouth oblique, directed upwards : dorsal origin behind pelvic origin — (*f*).

Cleft of mouth neither oblique nor directed upwards : dorsal origin a little ahead of pelvic origin — *Cirrhina latius* (Ham).

(*f*). Anal fin short, with 7 rays : no barbels ... — *Rasbora dniconius* (Ham).

Anal fin long with 15-16 rays : 4 barbels .. — *Brachydanio rerio* (Ham).

65(67). Two widely separated dorsal fins : dorsal spines 4.

66(69). Single dorsal fin or when two, closely placed or connected at their base : dorsal spines 7-19.

67. Snout long, pointed : cleft of mouth deep : teeth in jaws large, cutting : dorsal spines weak — Fam. SPHYRAENIDAE — *Sphyraena raghava* Chaudhuri.

68. Snout short, blunt : cleft of mouth narrow : teeth in jaws neither large nor cutting : dorsal spines strong. — Fam. MUGILIDAE, (*a*)-(*b*).

(*a*) With well developed adipose eye lids — (*b*).

With no or poorly developed adipose eye lids — (*h*).

(*b*) Lateral line scales 38-44 — (*c*).

Lateral line scales 30-35 — (*e*).

(*c*) Height of body $4\frac{1}{2}$ to $4\frac{2}{3}$ times in total length : lateral line scales 38 — *Mugil caeruleomaculata* Lac.

Height of body $4\frac{1}{5}$ to $5\frac{2}{3}$ times in total length : lateral line scales 40-44 — (*d*).

(*d*) Lateral transverse scales 14 : height of body $5\frac{1}{3}$ to $5\frac{2}{3}$ times in total length : soft anal rays 8 — *Mugil cephalus* L.

Lateral transverse scales 11-12 : height of body $4\frac{1}{5}$ to 5 times in total length : soft anal rays 9 — *Mugil speigleri* Blkr.

(*e*). Height of body 4½ to 4¾ times in total length	(*f*).	
Height of body 5 to 5½ times in total length	(*g*).	
(*f*). Lateral line scales 30 : length of caudal 6⅓ times in total length	*Mugil subviridis* V. V.	
Lateral line scales 35 : length of caudal 5½ times in total length	*Mugil cunnesius* V.V.	
(*g*). Length of caudal 5 times in total length : eye diameter 3½ times in length of head : lateral line scales 31-32 ..	*Mugil jerdoni* Day.	
Length of caudal 6 times in total length : eye diameter 4 times in length of head : lateral line scales 34-35 ..	*Mugil tade* Forsk.	(=*Mugil gymnocephalus*).
(*h*). Lateral line scales 26-28 : length of caudal 4⅔ and height of body 3⅔ times in total length ..	*Chelon oligolepis* (Blkr.).	
Lateral line scales 31-34 : length of caudal 5 to 5⅓ and height of body 4½ to 5 times in total length	*Chelon macrolepis* (Smith)	(=*Liza borneensis and L. troschelii*).

69 (71). Single dorsal fin, with spinous and soft parts continuous.

70 (87). Two dorsal fins, with spinous and soft parts separate or connected at their base.

71. Anterior rays of dorsal and anal fins elongated and more or less falciform : pelvics rudimentary : body profile abruptly elevated behind head... .Fam. PSETTIDAE. .*Monodactylus argenteus* (L.).

(72)(73). Anterior rays of dorsal and anal fins neither elongated nor falciform : pelvics well developed : body profile not abruptly elevated behind head.

73(75). Dorsal spines 17-19.

74(77). Dorsal spines 7-13.

75. Anal spines 8-10. ..Fam. ANABANTIDAE.. .*Anabas testudineus* (Bl.).

76. Anal spines 14-15. .Fam. CICHLIDAE. .*Etroplus suratensis* (Bl.)

77. A median longitudinal groove behind chin. Fam. POMADASYIDAB .. .*Pomadasys hasta* (Bl.).

78(79). No median longitudinal groove behind chin.

79. Broad cutting teeth in fornt of jaws .. . Fam. GIRELLIDAE .... *Crenidens crenidens* (Forsk.).

80(81). No broad cutting teeth in front of jaws.

81. Mouth very protractile : body very much compressed. ..Fam. LEIOGNATHIDAE, (*a*)-(*i*).

(*a*). Bony ridges and a nuchal spine on top of head : gill-membranes attached to isthmus	(*e*).
No bony ridges and nuchal spine on top of head : gill membranes not attached to isthmus	(*b*).
(*b*). Second dorsal spine prolonged into a filament	*Gerres filamentosus* C. (=*Gerres punctatus*).
Second dorsal spine not prolonged into a filament	(*c*).
(*c*). Dorsal and ventral profiles equally convex	(*d*).
Dorsal profile more convex than ventral profile ..	*Gerres oyena* (Forsk.).
(*d*). Highest dorsal spine as long as head excluding snout	*Gerres poeti* C.
Highest dorsal spine less than head excluding snout.	*Gerres setifer* (Ham.).
(*e*). Teeth in jaws minute : no symphisial canines ..	(*f*).
Teeth in jaws large : with symphisial canines ..	*Gazza minuta* (Bl.).
(*f*). Mouth when fully protracted forms an upwardly directed tube ..	*Leiognathus insidiator* (Bl.).
Mouth when fully protracted forms a downwardly directed tube .	(*g*).
(*g*). Height of body 2¼ to 2½ in total length : lateral line extending to caudal base	(*h*).
Height of body 2¼ to 3⅜ in total length : lateral line not extending to caudal base	(*i*).
(*h*). Lower jaw strongly concave : supra-orbital edge serrated	*Leiognathus equulus* (Forsk.).
Lower jaw not strongly concave : supra-orbital edge smooth	*Leiognathus dussumieri* (V.V.).
(*i*). Chest naked : supra-orbital edge smooth ..	*Leiognathus daura* (C.C.).
Chest scaly : supra-orbital edge serrated .	*Leiognathus blochii* (V.V.).

82(83). Mouth not very protractile : body not very much compressed.

83. Hind border of preopercle notched, Fam .... LUTIANIDAE .... *Lutianus johnii* (B.).

84(85). Hind border of preopercle not notched.

85. Head pointed : dorsal fin not notched : caudal not forked. .Fam. LOBOTIDAE.. .*Datnioides quadrifasciatus* Sevastianof (=*Coius quadrifasciatus*).

86. Head not pointed : dorsal fin notched : caudal forked. .Fam. THERAPONIDAE, (*a*)-(*b*).

(*a*). Lateral line scales 90-100 : nostrils distant : 4 straight bands on body *Therapon puta* C.

(*b*). Lateral line scales 80-90 : nostrils close together : 3 convex bands on body *Therapon jarbua* (Forsk.).

87(89). Dorsal fins connected at their base.

88(91). Dorsal fins separate.

89. Two weak anal spines : muciferous system on head well developed .Fam. SCIAENIDAE, (*a*)-(*c*).

(*a*). Mouth inferior : upper jaw overhanging lower jaw : a barbel at mandibular symphysis (*b*).

Mouth terminal : upper jaw not overhanging lower jaw : no barbel at mandibular symphysis *Pseudosciaena coiber* (Ham.).

(*b*). Maxillary reaching below to middle of eye : barbel half as long as eye : lateral transverse scales 5-6/15-17 (*c*).

Maxillary reaching beyond middle of eye : barbel nearly as long as eye : lateral transverse scales 6/15 *Sciaena russellii* (C. C.) (=*Umbrina indica*).

(*c*). Lateral line scales 48 : lateral transverse scales 5-6/15 *Sciaena macroptera* (Blkr.).

Lateral line scales 52 : lateral transverse scales 6/17 *Sciaena dussumieri* (V. V.).

90. Three strong anal spines : muciferous system on head not well developed. .Fam. CENTROPOMIDAE, (*a*)-(*c*).

(*a*). Maxillary reaching hind border of eye : opercle spinate : caudal rounded *Lates calcarifer* (Bl.).

Maxillary not reaching hind border of eye : opercle not spinate : caudal forked (*b*).

(*b*). Height of body $2\frac{1}{3}$ to $2\frac{1}{2}$ times in total length : pelvics nearly reaching anal .. *Ambassis ranga* (Ham.).

Height of body $3\frac{1}{4}$ to $3\frac{1}{2}$ times in total length : pelvics not reaching anal (*c*).

(*c*). Lateral line continuous : lateral transverse scales 4/9 *Ambassis commersonii* C. (=*Chanda ambassis*).

Lateral line interrupted : lateral transverse scales 3/8 *Ambassis gymnocephalus* (Lac.) (=*Priops gymnocephalus*).

91. Head depressed, flat and armed with spines .. Fam. PLATYCEPHALIDAE. .*Platycephalus indicus* (L.) (=*Platycephalus insidiator*).

92. Head neither depressed, flat nor armed with spines. .Fam. SILLAGINIDAE. .*Sillago sihama* (Forsk).

93. Preopercular margin free, not hidden by skin and scales of head : lower jaw more prominent than upper jaw. .Fam. BOTHIDAE. *Pseudorhombus arsius* (Ham.).

94(95). Preopercular margin not free, hidden by skin and scales of head : lower jaw not more prominent than upper jaw.

95. Vertical fins confluent : eyes on left side. .Fam. CYNOGLOSSIDAE. *Cynoglossus brevis* Gthr.

96. Vertical fins not confluent : eyes on right side. .Fam. SOLEIDAE .*Synaptura orientalis* (Bl. Schn.).

97(99). Gill openings ventral : head and trunk depressed or broadly disc-like.

98. Gill openings lateral : head and trunk neither depressed nor disc-like. .Fam. CARCHARHINIDAE, (*a*)-(*c*).

(*a*). Teeth with smooth edges, those at sides with swollen bases : snout elongate	*Physodon mulleri* M. H.
Teeth with serrated edges, none with swollen bases : snout not elongate	(*b*).
(*b*). Second dorsal fin larger than anal fin : snout obtuse : preoral length 2/3 of mouth width	*Carcharhinus gangeticus* (M.H.) (=*Carcharias gangeticus*).
Second dorsal fin not larger than anal fin : snout pointed : preoral length equal to or 2/3 of mouth width	(*c*).
(*c*) Second dorsal fin smaller than anal fin : preoral length equal to mouth width : fins not tipped black	*Carcharhinus limbatus* (M.H.).
Second dorsal fin and anal fin subequal : preoral length 2/3 of mouth width : fins tipped black	*Carcharhinus melanopterus* (Q.G.) (=*Carcharias melanopterus*).

99. Head and trunk depressed : snout much produced and saw-like. .Fam. PRISTIDAE. .*Pristis pectinatus* Latham.

100(101). Head and trunk broadly disc-like : snout neither produced nor saw-like.

101. Head distinct from disc and with a distinct snout : Fam. MYLIOBATIDAE, (*a*)-(*b*).

(*a*). Snout pointed : a strong caudal spine : teeth in single row	*Aetobatus narinari* (Euphrasen). (=*Aetobatus flagellum* and *A. guttata*).
(*b*). Snout blunt : no caudal spine : teeth in many rows .. .	*Aetomylus nichofi* Schn.

102. Head not distinct from disc and without a distinct snout. .. Fam. TRYGONIDAE, (*a*)-(*d*).

(*a*). Cutaneous fold on tail	(*b*).	
No cutaneous fold on tail		*Dasyatis* (*Himantura*) *uarnak* (Forsk.) (=*Trygon pareh* and *T. uarnak*).
(*b*). Tail with a ventral cutaneous fold		*Dasyatis* (*Pastinachus*) *sephen* (Forsk).)=*Hypolophus sephen*).
Tail with a dorsal cutaneous fold ..		*Dasyatis* (*Amphotistius*) *imbricata* (Schn.) (=*Trygon imbricata*).

IV—SUMMARY

1. The paper deals with a recent collection of fish from the Chilka Lake, Orissa. The collecting localities are marked in the map (Text-fig. 1).

2. Of the 72 species represented in the collection under report, 17 are new records from the Lake.

3. The total number of fishes so far recorded from the Lake is thus raised to 134 species, comprising 87 genera, 51 families and 15 orders. A table of identification of these species is given at the end of the paper.

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