



Fig. 1. Striation pattern on frontals in *I. megaloptera* 158 mm SL (left) and *I. indica* 172 mm SL (right).

lateral series. This is not always possible to observe as the scales are missing in preserved material. There is overlap in the number of ventral scutes, but the number of gill rakers and anal rays differ in the two species, although intraspecific variation has not always been taken into account by authors. Whitehead (1970) separated the two species by differences in body depth and number of gill rakers. Attention herein has been paid to intraspecific variation in meristic and morphometric characters. In addition, a new and stable character has been found by which the two species differ; i.e., the striation pattern on the frontal bones (Fig. 1); the striations are in the form of ridges. The striation pattern found in *I. megaloptera* is here named the 'megaloptera' pattern and that in *I. indica* the 'indica'—pattern. There

IDENTITY OF THE CLUPEID FISHES, *ILISHA MEGALOPTERA* AND *ILISHA INDICA*.—In spite of several recent studies, confusion still surrounds the identification of Indo-Pacific species of the genus *Ilisha*. Whitehead (1966-1970), in a series of publications, made notable contributions to the systematics of clupeoid fishes, but pointed out the urgent need for revision of many genera. I deal with problems surrounding the identification of certain fishes belonging to the *indica-megaloptera* species complex. The type locality of *I. indica* and *I. megaloptera* is Visakhapatnam, India. The species were based on "*Ditchoee*" and "*Jangerloo*" of Russell (1803) respectively.

Norman (1923) separated *I. megaloptera* and *I. indica* by the number of scales in the

TABLE 1. COMPARISON OF CHARACTERS OF 50 *I. megaloptera* AND 50 *I. indica* BASED ON SPECIMENS COLLECTED FROM VISAKHAPATNAM, INDIA (TYPE LOCALITY).

Character	<i>I. megaloptera</i>	<i>I. indica</i>
Dorsal rays	17-19	17-21
Pectoral rays	15-18	14-17
Ventral rays	6-7	6-8
Anal rays	47-50	39-43
Gill rakers	9-11 + 19-21	12-13 + 23-27
Scutes	20-21 + 9-11 (total 30-31)	18-20 + 7-9 (total 27-29)
Scales in		
lateral series	50	33-40
Striation pattern		
on frontals	<i>megaloptera</i> pattern.	<i>indica</i> pattern.

is urgent need to redescribe the two species, especially since they appear to have been based on Russell's poor figures and descriptions and not on specimens.

Megaloptera "pattern."—a pair of ridges on frontals arising on median line before anterior border of eye, passing posteriorly but gradually diverging from each other. Another pair of ridges parallels in close association with the former, the two joining at the hind end of the skull (Fig. 1a).

Indica "pattern."—a pair of ridges on frontals arising on median line before anterior border of eye, passing posteriorly, diverging at first but then paralleling each other. Another pair of ridges parallel the latter, the two pairs not meeting at the hind end of skull (Fig. 1b).

I. megaloptera has been found to differ from *I. indica* in: a) number of gill rakers, b) number of anal rays, c) striation pattern on frontals, d) possession of black tipped pectorals, and e) number of scales in lateral series (Table 1). Whitehead (*in litt.*) has found another important difference. In *I. megaloptera* (as in many species of *Ilisha*), the swimbladder has a single and long post-coelomic extension on the right side of the body. The extension is paired in *I. indica*.

Messrs. S. Rama Rao and K. Varahala Raju of this department rendered valuable assistance during the investigations. I am grateful to Professor S. Dutt for suggesting the problem and to the University Grants Commission, New Delhi, for financial assistance.

LITERATURE CITED

- NORMAN, J. R. 1923. A revision of the genus *Ilisha* and allied genera. *Ann. Mag. Nat. Hist.* 11:1-22.
- RUSSELL, P. 1803. Description and figures of two-hundred fishes collected at Vizagapatnam on the coast of Coromandal. W. Bulmer & Co., London, 2:1-85.
- WHITEHEAD, P. J. P. 1966. The elopoid and clupeoid fishes in Richardson's "Ichthyology of the seas of China and Japan, 1846." *Bull. British Mus. Nat. Hist. (Zool.)* 14:32-33.
- . 1967. The clupeoid fishes described by Lacepede, Cuvier & Valenciennes. *Ibid.* suppl. 2:111-121.
- . 1969. The clupeoid fishes described by Bloch and Schneider. *Ibid.* 17:268-271.
- . 1970. The clupeoid fishes described by Steindachner. *Ibid.* 20:20-25.

B. V. SESHAGIRI RAO, *Department of Zoology D.N.R. College, Bhimavaram, Andhra Pradesh, India.*