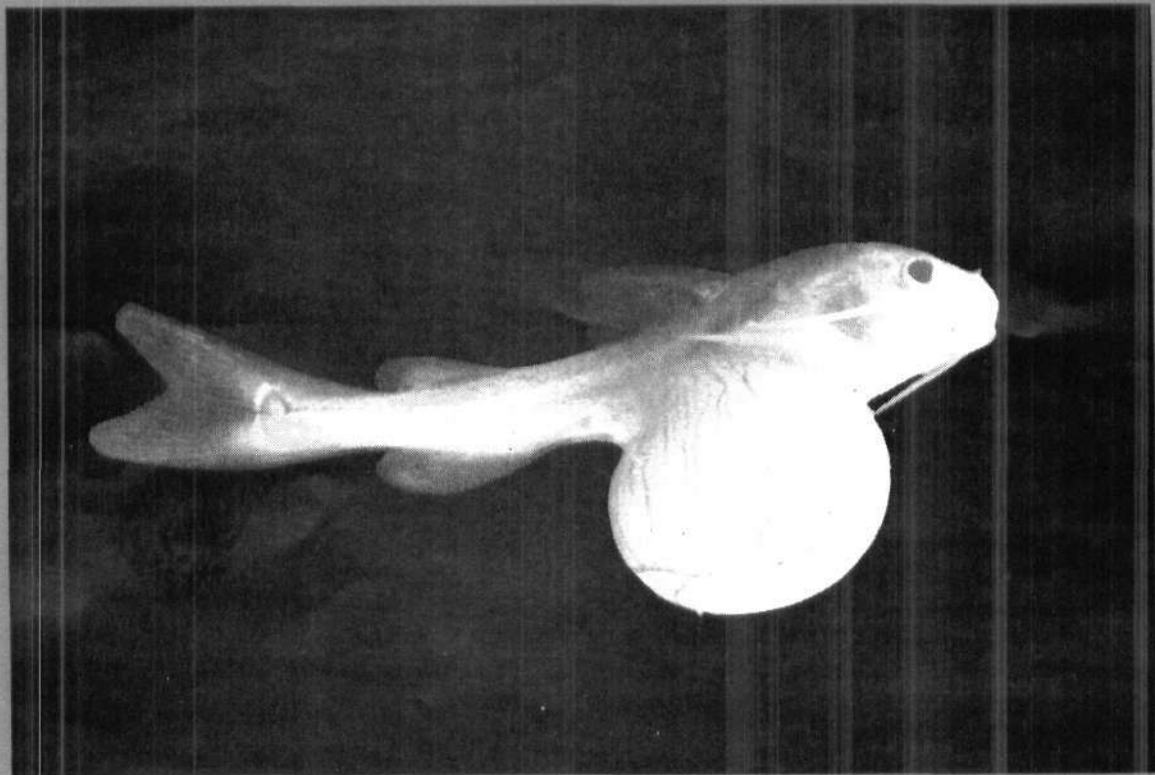




MARINE FISHERIES INFORMATION SERVICE



No. 84
JUNE 1988

Technical and Extension Series

CENTRAL MARINE FISHERIES RESEARCH INSTITUTE

COCHIN, INDIA

INDIAN COUNCIL OF AGRICULTURAL RESEARCH

ON THE AVAILABILITY OF TUNA LIVE-BAIT FISHES AT VIZHINJAM*

Introduction

The success of tuna fishing by pole and line depends mainly on the availability of live-bait fishes. About 230 species of fishes representing 34 families are being used as live-baits in the pole and line fishing to capture Skipjack tuna throughout the Pacific, Atlantic and Indian Oceans with varying degrees of success and many other species are no doubt employed as live-bait but not reported in literature. In India an acute shortage of live-bait fishes has been faced in recent times in the Lakshadweep waters. In view of this a preliminary survey was made at Vizhinjam from May, 1986 to April, 1987 to find out their availability, and a brief report is given here with a view to suggesting future programme to be undertaken from this area.

Characteristics of an ideal live-bait

The most desirable characteristics of a good bait fish are: 1) highly reflective lateral surface, (2) surface swimming with rapid erratic motion, (3) tendency to return to the vessels when broadcast, (4) length below 15 cm, preferably 6-8 cm with elongate body, (5) abundance, availability to the fishery and the ease with which it can be handled and (6) hardiness and survival for extended periods in captivity.

* Prepared by P.S.B.R. James, CMFRI, Cochin and S. Lazarus and C. S. Gopinadha Pillai, VRC of CMFRI, Vizhinjam.

Bait fishes available at Vizhinjam

Vizhinjam (8°22'30'' N and 76° 59' 15'' E) falling almost in the same meridian as that of Minicoy, offers a variety of small sized fishes having the above mentioned characteristics of bait fishes. Some forms like *Stolephorus* spp., *Sardinella* spp., and post larvae and juveniles ('Nonnavu') of other commercially important groups of fishes have a regular fishery in this area. Percoid fishes represented by families Pomacentridae, Apogonidae and Labridae are encountered in this area mainly in the 'paar' (coral) regions, but they are not represented in appreciable quantities in the commercial landings and hence species composition and catch data are not given in this report. Bait fishes available at Vizhinjam with their seasons of occurrence are given in Table 1.

Among the fishes listed in Table 1 the following forms namely *Caesio caeruleus*, *Dipterygnotus leucogrammicus*, *Labroides dimidiatus*, *Pomacentrus pavo*, *Apogon sangiensis*, *Chromis caeruleus* and *Pranesus duodecimalis* are used as live-baits in the pole and line fishing in the Lakshadweep area. Of these *Caesio caeruleus* is available in its juvenile stage ranging in sizes from 89-145 mm during February-March in the boat seine catches at Vizhinjam. *Dipterygnotus leucogrammicus* is available during March in sizes ranging from 43-57 mm, similar to that of the size available

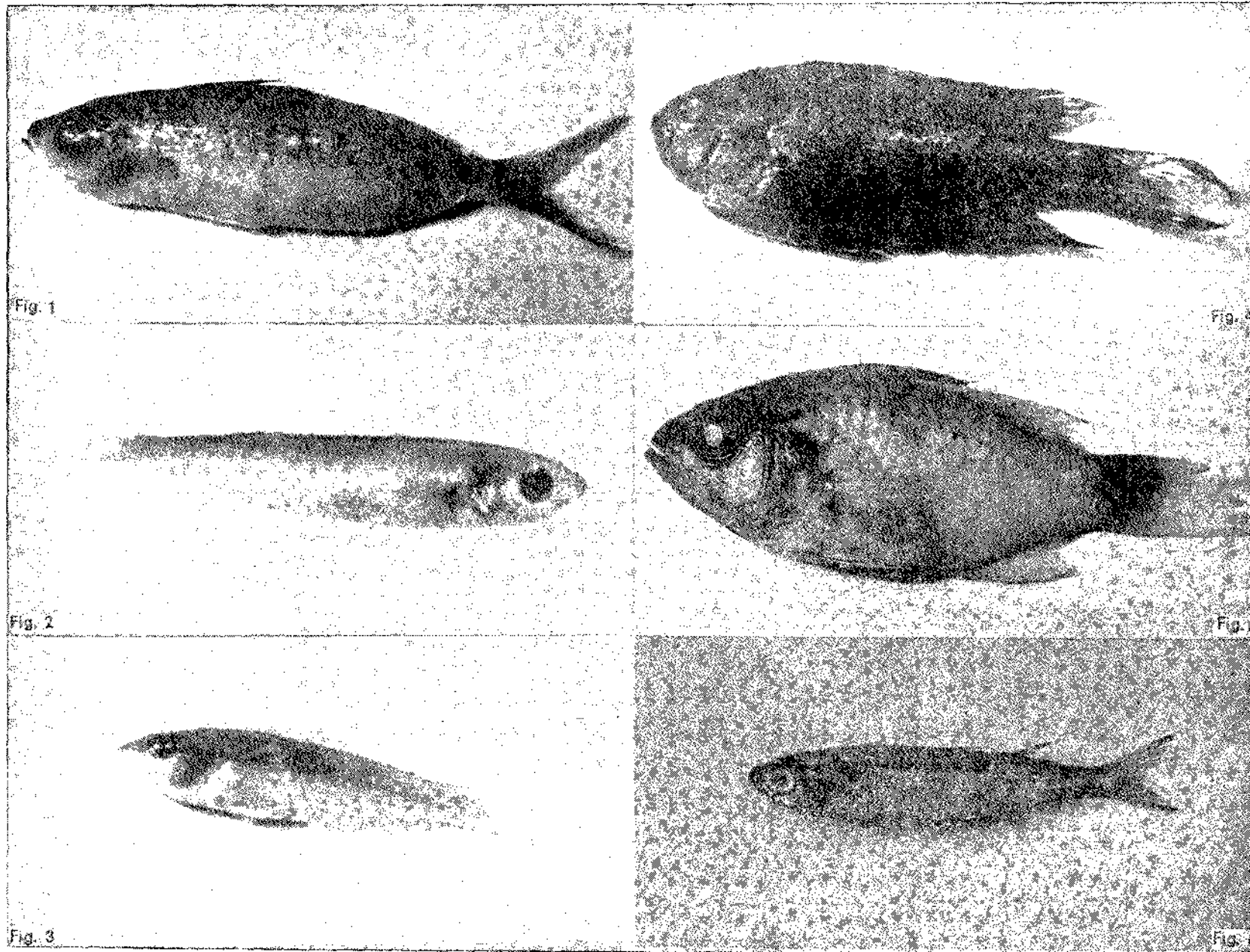


Fig. 1. *Caesio caeruleus* 114 mm (TL)
 Fig. 2. *Dipterygnotus leucogrammicus* 56 mm (TL)
 Fig. 3. *Labroides dimidiatus* 45 mm (TL)

Fig. 4. *Pomacentrus pavo* 91 mm (TL)
 Fig. 5. *Apogon sangiensis* 110 mm (TL)
 Fig. 6. *Prunus duodecimalis* 105 mm (TL)

Table 1. Bait fishes available at Vizhinjam and the seasons of their occurrence

Family	Species	Size range (mm)	Season of occurrence
Caesioididae	<i>Caesio caeruleus</i>	85-145	January - March
Emmelichthyidae	<i>Dipterygonotus</i>		
	<i>leucogrammicus</i>	43-57	March - April
Labridae	<i>Labroides dimidiatus</i>	35-45	February - March
Pomacentridae	<i>Pomacentrus pavo</i>	75-90	February - March
	<i>Chromis caeruleus</i>	115-122	January - March
Apogonidae	<i>Apogon sangiensis</i>	112-115	March - April
Atherinidae	<i>Pranesus duodecimalis</i>	25-76	April - October
Ambassidae	<i>Ambassis gymnocephalus</i>	20-88	October - February
Clupeidae	<i>Stolephorus</i> spp. (7 species)	10-140	April - October/December
	<i>Sardinella</i> spp. (5 species)	20-215	April - August and October - December

in the Lakshadweep area. Luther *et al.* (Symp. Coastal Aquaculture, 3: 861-875, 1984) reported that *Pranesus duodecimalis* occurs in large quantities in the Vizhinjam area during April to October. According to them this fish has a high rate of survival in captivity. Other types of live-bait fishes reported here occur in this area in stray numbers.

The glassy perch *Ambassis gymnocephalus*, has all the characters of a live-bait and is available in large quantities in this area right from the egg stage onwards. An attempt to transfer this fish to the Lakshadweep Island waters and to try them as bait for pole and line fishing for tuna appears to be worth considering.

Bait fish gears

Bait fishes are caught mainly by seine nets (boat seine and shore seine). They are also fished by gill nets and hooks and line ('Achil') at certain seasons. The juvenile fishes are caught by a small meshed shore seine called 'Nonna vala'.

Remarks

The studies of Kuthalingam *et al.* (*Proc. Natl. Sem. Cage Pen culture*, 87-88, 1983) and Luther *et al.* (*op. cit.*, 1984) have given some idea about the survival rates of some of the bait fishes in captivity. However, collecting the bait fishes from the commercial catches and keeping them in floating cages seem to be a laborious task. So it is time to think about artificially breeding the important bait fishes by collecting the brood stock from the wild. In addition, surveys should be conducted in the nearby areas also to identify suitable resources of live-bait fishes and develop methods to transport and maintain the stock for later use in the tuna fishery. Attempts should also be made to identify alternate species which could be used as live-baits. *Ambassis gymnocephalus* is one such species which could be experimented with. The present study indicates that the species like *Caesio caeruleus*, *Dipterygonotus leucogrammicus* and *Pranesus duodecimalis* deserve further studies.

