While examining penaeid prawns from the offshore catches off Cochin the author came across an unusual abnormality suggestive of hermaphroditism, externally though, in a specimen of *Metapenaeus monoceros* Fabricius. The specimen measuring 158 mm. in total length and 42 mm. in carapace length is one among 16,870 numbers of the species examined from samples from both backwater and offshore commercial catches during the past 10 years. It was collected from the offshore catches on 27th October, 1960 from a depth of 15 fathoms off Cochin.

The abnormality is shown in fig. 1. The specimen has the secondary sexual character of the male, namely petasma, in addition to the sexual features of the female. On dissection it was found to have only the female gonad fairly well developed with the ovary in the late maturing stage. No evidence of the male gonad could be noticed. Apparently except for the petasma it is a normal female specimen in all other respects.

Even the petasma is not fully developed in proportion to the size of the specimen. Although the specimen is of adult size the petasma is not of the actual adult size and shape. The left half is not as much developed as the other half. Other secondary sexual modifications of the adult male such as the notched proximal end of the merus of the last leg bounded anteriorly by large hook-like spine and posteriorly by a lobule of the ischium are also wanting.

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A NOTE ON THE PRAWN FISHERY OF KUTCH

The estimated annual average marine fish production in Kutch for the last four years is about 1250 m. tons, of which nearly 60% is constituted by the prawns.* There is no information available on the prawn fisheries of Kutch. The account given by Srivatsa (1953) relates mainly to a general survey of the prawn fisheries with particular reference to the Saurashtra coast of the Gulf of Kutch. Lacumb (1960) has dealt with the prawn fishing industry of Kutch from the economic point of view. Hence investigations on the biological aspects of the prawn fisheries of Kutch with reference to the annual fluctuations, composition of the catch, growth, migration, maturity and food of the commercial species are in progress at the Central Marine Fisheries Research Unit, Kandla, since May 1959.

The present note deals with the composition of the catch along the Kutch coast. The following centres, commencing from the inner to the outer regions of the Gulf of Kutch have been chosen for observation :— Cherowari, Kandla, Tuna-

* Through the courtesy of the Directorate of Fisheries, Gujarat.

Sangadh, Lunei (Mundhra) and Modhwa (Mandvi). The areas of fishing in Kutch are restricted to the foreshore waters taking advantage of the strong tidal flow. The prawns that are caught are chiefly members of the Penaeidea and the species that occur are listed below :

Metapenaeus monoceros.
Metapenaeus brevicornis.
Metapenaeus sp.
Penaeus indicus.
Penaeus carinatus.
Penaeus canaliculatus.
Parapenaeopsis sculptilis.
Parapenaeopsis stylifera.
Acetes sp.

Of these *M. monoceros*, *M. brevicornis*, *P. indicus* and *P. sculptilis* are of importance in the catches. Among the caridean prawns are *Leander* spp., *Hippolysmata* sp. and *Palaeomon* spp.

One of the interesting results of a preliminary study of the composition of the prawn fishery at the different centres along the Kutch coastline is that the different species have definite areas of occurrence as will be evident from the species composition of the annual catch given in the Table.

TABLE

Prawn fishery season, composition of the catch along the Kutch coast and nature of the bottom

Place	Season	Nature of the bottom	Composition
Cherowari ..	August-October	Muddy	*M. monoceros* 93.0% ; *P. sculptilis*, *Leander* sp. and *Palaeomon* sp. 7.0%.
Kandla ..	May-February	Muddy	*M. monoceros* 64.7% ; *P. indicus* 20.8% ; *Leander* sp. 8.3% ; *M. brevicornis* 4.2% ; *P. sculptilis*, *P. stylifera* and *Palaeomon* sp. 2.0%.
Tuna-Sangadh.	September-February	Muddy	*M. monoceros* 47.5% ; *P. indicus* 15.6% ; *M. brevicornis* 15.3% ; *Leander* sp. 14.5% ; *P. sculptilis* 5.8% ; *P. canaliculatus*, *P. stylifera* and *Palaeomon* sp. 1.3%.
Lunei ..	July-December	Mixed (Sandy and muddy)	*P. indicus* 48.8% ; *M. monoceros* 23.0% ; *M. brevicornis* 13.7% ; *P. canaliculatus* 5.8% ; *P. sculptilis* 3.0% ; *Metapenaeus* sp. 2.5% ; *P. carinatus* and *Leander* sp. 3.2%.
Modhwa ..	September-January	Sandy	*M. brevicornis* 27.4% ; *P. sculptilis* 18.8% ; *P. indicus* 15.5% ; *M. monoceros* 8.7% ; *Acetes* sp. 7.5% ; *P. stylifera* 7.3% ; *Leander* spp. 6.2% ; *Hippolysmata* sp. 5.4% ; *Metapenaeus* sp. 3.2%.

M. monoceros which constitutes the single largest species in magnitude in the prawn fishery as a whole is found to abound in the inner parts of the Kutch coast

i.e. from Tuna-Sangadh to Cherowari. This species gradually fades in importance in the outer half of the Kutch coast and yields place to *P. indicus* at Lunei and *M. brevicornis* at Modhwa. The differences in the species composition of the catch at the different centres is probably in association with the nature of the sea bottom. The bottom is muddy between Tuna-Sangadh and Cherowari where *M. monoceros* abounds. It is mixed, being sandy and muddy at Lunei where *P. indicus* constitutes the prawn fishery while at Modhwa the bottom is sandy and associated with this, *M. brevicornis* is the most important species of prawn occurring there. This observation supports Williams (1958) who has experimentally shown the importance of the substrate as a factor in the penaeidean shrimps distribution.

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AN INSTANCE OF HERMAPHRODITISM IN THE INDIAN OIL SARDINE, *SARDINELLA LONGICEPS* (CUV. & VAL.)

Hermaphroditism, as an occasional abnormality, has been observed in some of the marine food fishes but as there is no record of such a condition in the oil sardine, *Sardinella longiceps*, the present finding will be of interest.

While recording routine biological observations on a sample of fish taken from the commercial *Pattenkolli* (Boat seine) returns at Vellayil (Kozhikode) fish landing place on 23-8-1960, hermaphroditism was noticed in a specimen measuring 175 mm. in total length. Externally it was distinguished as a female but anatomically it was seen that the two gonads were differing in size, shape and nature and having separate ducts not uniting distally but opening independently on the genital papilla which was muscular and not membranous as is expected in a female (George, 1959). This may be considered as a peculiarity accompanying abnormal development of the gonads. The right gonad measuring 53 mm. was in the form of an ovo-testis. For the major portion it was testis, pod shaped, globular and fleshy unlike the dorsoventrally flattened nature of a normal testis. The posterior end was not continued as vas deferens but instead the outlet was in the form of an outgrowth of 27 mm. in length, narrower at the start forming pouch-like distally and opening on the papilla by a small transparent duct. However, this outgrowth contained maturing and immature oocytes and appeared to arise from the dorsal side at the posterior one-fourth of the gonad, having a distinct wall of its own and giving an impression that a portion of ovary was superimposed on a testis (fig. 1a). On the ventral side (fig. 1b) it was seen that a thin layer of ova was spread out