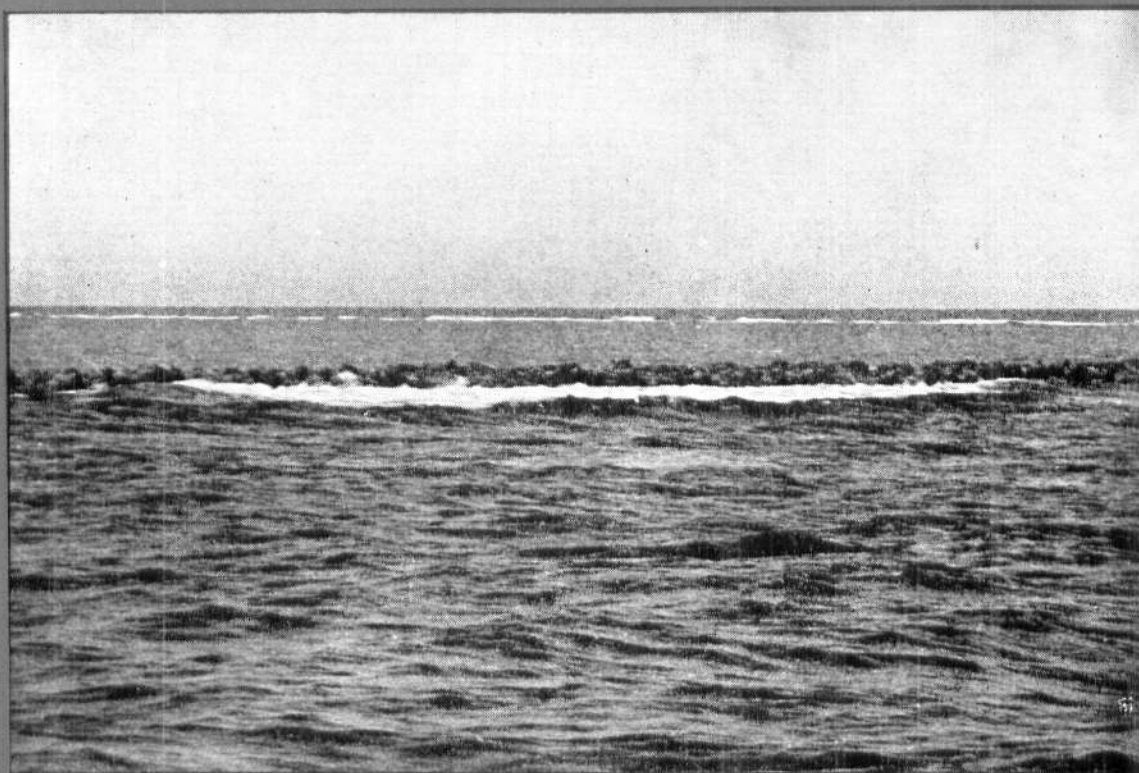




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NEWFANGLED TACKLES FOR CEPHALOPODS*

Eversince cuttlefishes and squids entered the export market, priority for their fishing, especially for the former whose value had been leaping ahead in recent times, is next to that of prawns. The cuttlefish *Sepia pharaonis*, constitutes an important seasonal fishery in the southern part of the west coast of India (Kanyakumari District in Tamil Nadu and Trivandrum District in Kerala) during the September-February period, while the squid fishery of this area, dominated

by *Loligo duvaucelli*, is also seasonal almost coinciding with the same period. Though cuttlefishes here form a bycatch in gears like boat seine and shore seine, the major landings come from a few simple indigenous varieties of gears of either local innovation or adaptation from established gear elsewhere. The major squid catches of this area are from boat seine; yet operation of miniature anchor hooks also contributes substantially to its fishery.

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What follows is a brief description of some of these less-known varieties of gears. These have been designed

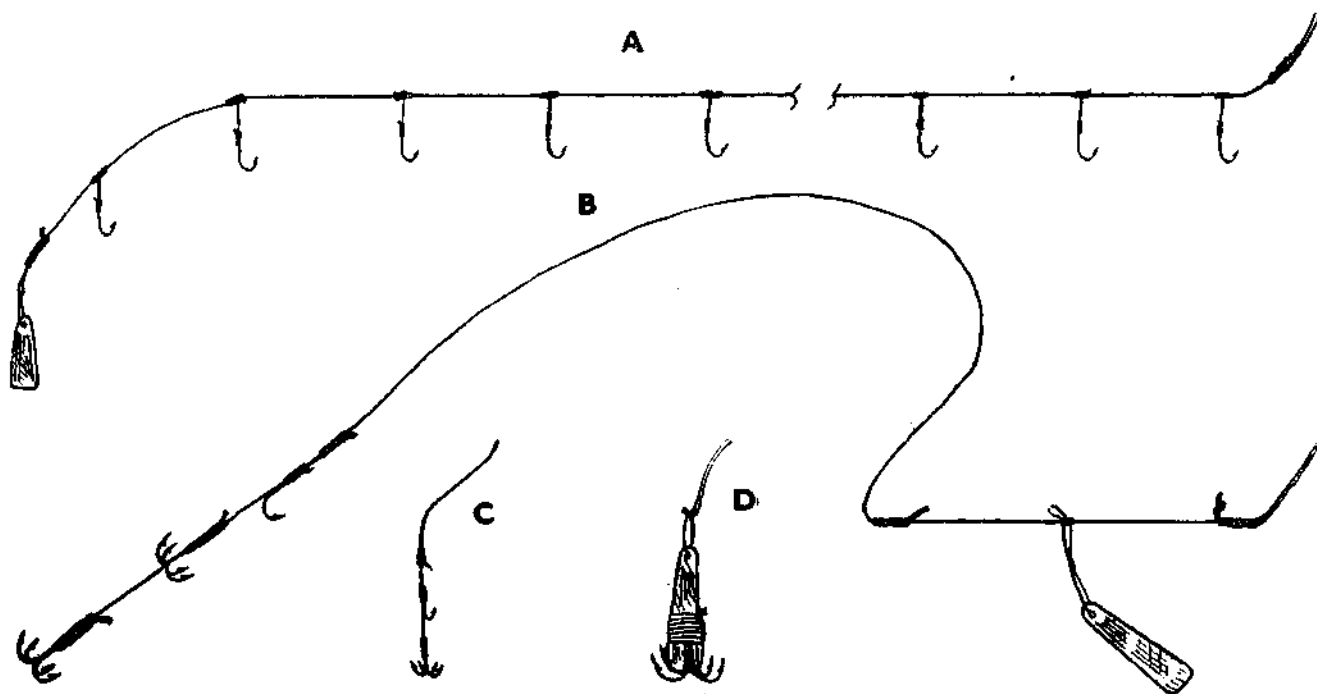


Fig. 1. (A) '*Vidukayiru*' for cuttlefish, (B) '*Nangoora choonda*' for cuttlefish, (C) '*Nangoora choonda*' for squid and (D) '*Disco nangoora choonda*' for cuttlefish.

making use of the line-sinker-hook-bait combination and the fishing technique is hand-jigging, with the species getting hooked or getting attached strongly to the bait till it is hauled up to the surface.

'Vidukayiru' for cuttlefish: This gear is similar to 'Achil' described by Lazarus (*Indian J. Fish.*, 31: 368-370, 1984) but with minor variations to suit cuttlefish collection. Here, the main line, a nylon thread of gauge No. 60 and a length of 5 m or more, has a sinker weighing about 150 g attached at its far end. Short branch-lines, each having a hook (size No. 10 or 9) at its end are rigged to the main line at definite intervals. The length and the space between the branch-lines are so adjusted that no two adjacent branch-lines tangle with each other. Thus, if the length of the branch-line is 15 cm, the space between two adjacent branch-lines has to be a minimum of 30 cm or a little more. The other end of the main line is connected to a sufficiently long hand rope. Similarly, when many crafts are concentrated in a small area, the main line is often restricted to less than 5 m to avoid intertwining of many units. Lengthy and thicker main line (nylon thread No. 100) with more hooks (sometimes upto 100) and lengthier branch-lines are used when fishing by a crew is confined to a limited area. A heavier sinker is used when the impact of the ocean currents is high.

The bait used is the meat of crab or fish, the arms of cuttlefish *etc.*, depending on their availability, or synthetic fibres of different colours. The fishing operation generally is at 30 to 50 m depth from a catamaran with one or two men, or from a plank-built boat with outboard-motor and a crew of four or five. All the crew members operate the gear, sometimes each more than one unit. The operator holding the hand rope, lets the gear into the water till the sinker touches the sea bed and jigs it occasionally. When the cuttlefishes cling to the bait, the pull is felt by the operating fisherman dextrous at it and he slowly pulls the hand rope upwards. As the catch nears the surface, it is collected using a scoop net. This gear, according to the fishermen, is used to catch cuttlefishes that concentrate near the bottom during breeding season.

'Nangoora choonda' for cuttlefish: This is a simplified form of anchor hook, as the meaning of the vernacular term indicates. The design and operation of this gear has been elaborately dealt with by Prabhakaran Nair (*CMFRI Bull.*, 37: 152-156, 1986). Two thin iron rods (usually umbrella or cycle spokes) of about 30 cm length, a sinker weighing about 150 g, a few metres of No.60 nylon thread, eight to ten hooks of the size No. 10 or 9, a hook in size No. 8 or 7, and 30 to 50 m long

nylon rope are the essential parts of this gear. At the tip of one of the iron rods, a circle of hooks is formed by tying 4 or 5 hooks. A similar circle of hooks is made a few centimetres above the first circle, and a few centimetres further above this, a hook of the size No. 8 or 7. The free end of this rod is then connected to a 1.5–2 m long nylon thread, the other end of which is tied to one end of the other iron rod. At the centre of the second rod, an iron weight is hung on a short-nylon thread. The opposite end of this rod is connected to a nylon hand rope long enough to operate at the required depths.

Though artificial bait (synthetic fibres of many colours), meat of fish and arms of squid and cuttlefish are used, living crab is preferred in some areas. The bait is fixed on the single hook above the two tiers of hooks. In the case of crab as bait, after removing the chelate legs, the crab is tied to or hooked in the barb. The movements of the legs of the live crab are supposed to attract the cuttlefish more. When the gear is lowered at the fishing ground, the cuttlefish engulfs the bait with its arms and, feeling the additional weight in the gear, the operator, moving the gear as to give a few jerks at the hooks, pulls up the rope. The jerk causes the cuttlefish to be ripped by the upper tier of hooks. Any escaping from the upper hooks, has the chance of being caught in the lower. The catch on reaching the surface is collected by a scoop net or picked out by hand. During an operation normally only one (very rarely more than one) cuttlefish is caught by one unit.

Commonly seen modifications of this gear are: (a) Only a single circle of hooks at the tip of the rod with a hook attached a few centimetres above. (b) A single hook of size No. 7 or 6 alone in the place of anchor hook, the bait being either tied to the shank or pierced in the crook of the hook. Here, instead of getting

hooked, the victim holds on to the bait and is pulled to the surface and collected by a scoop net. (c) A nylon line with not more than 10 branch-lines, each having one hook of size No. 10 or 9, instead of the rod with circle of hooks. Here also the exploitation is based on the victim's tendency to grip at the bait.

'Nangoora choonda' for squid: The squid-jigging practiced in this area is similar to Vietnam type. The gear is a miniature form of anchor hooks described above for cuttlefishes, but with minor differences. Here, a thin 9 cm long iron rod has 4 hooks of size No. 14 attached at the distal end to form a circle. A hook of the same or slightly larger size is tied a few centimetres above the circle. The other end of the rod is directly connected to a monofilament (No. 60) nylon hand line. The preferred bait is meat or arms of squid itself, but other items like meat of fish or crab, or synthetic bristles are also used. The bait is tied to or pierced into the hook provided for this purpose above the circle of hooks. A man sometimes operates 2 to 4 units at a time, holding the hand lines by the toes also. The ripped squid is pulled to surface and collected into the craft. According to the fishermen, night operation is very yielding during peak season.

'Disco nangoora choonda' for cuttlefish: This gear is made of a conical iron or lead weight of 150 to 250 g and a few hooks of the size No. 10 or 9. By fastening 4 or 5 hooks around the broad end of the weight, a circle of hooks is formed. An eye provided at the tapering end of the cone facilitates rigging through it of a nylon thread of variable thickness (normally No. 100) and required length. The lure is a nylex cloth-bit, preferably golden coloured, which envelops the cone just above the hooks. The method of fishing is jigging and ripping as in *'Nangoora choonda'* for cuttlefish described above.

