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*Shaping Lives...
Empowering Communities...*

Session 32

COMMON INLAND FISHING GEARS

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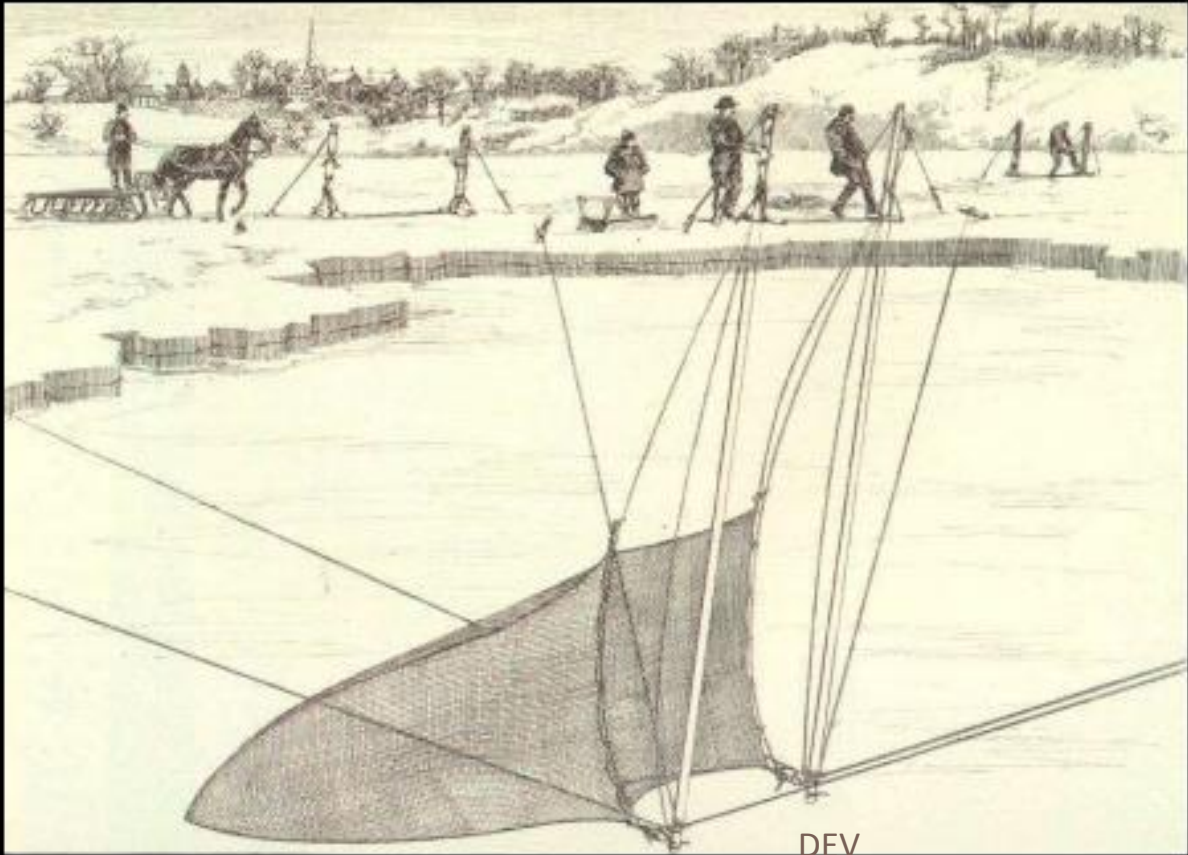
1. Fixed or Stationary net

These nets are rectangular or conical nets of various shape and size. They are mainly used in the tidal regions of the river or in the shore water during low tide period. They are provided with floats and sinkers to keep the net straightened. The nets are kept fixed to the bottom at the bank of the river. At the time of high tide the water containing fishes pass over the net. When the tide recedes, the fishes are trapped with water in the nets. They are of two kinds: **Khalpatta Jal** and **Bag net**

- **(a) Khalpatta Jal:** This type of net is largely used in Sundarbans, Chilika lake, in the lower reaches of Ganga and Palluvala of Kerala. They are widely used to catch a variety of clupeid fishes and carps. The net is fixed by two bamboo poles. The water is enclosed in a vertically disposed net and the fish is entrapped in the meshes of the net.

- **(b) Bag net:** It is a triangular conical bag net with a tapering apex and a rectangular mouth, but without wings. The two ends of the mouth are tied with floats. The size of the mouth increases from the bag portion towards the outer flank. This bag net is popular in South India but with different names, e.g. Viaga valai in Andhra Pradesh (bag net with long tapering flanks), 'thuri valai' in Madras coast and boat seines in Kerala coast. With the help of the above sort of bag net, small fishes like clupeids, feather backs, etc., are caught from the Ganga basin rivers.

BAGNET



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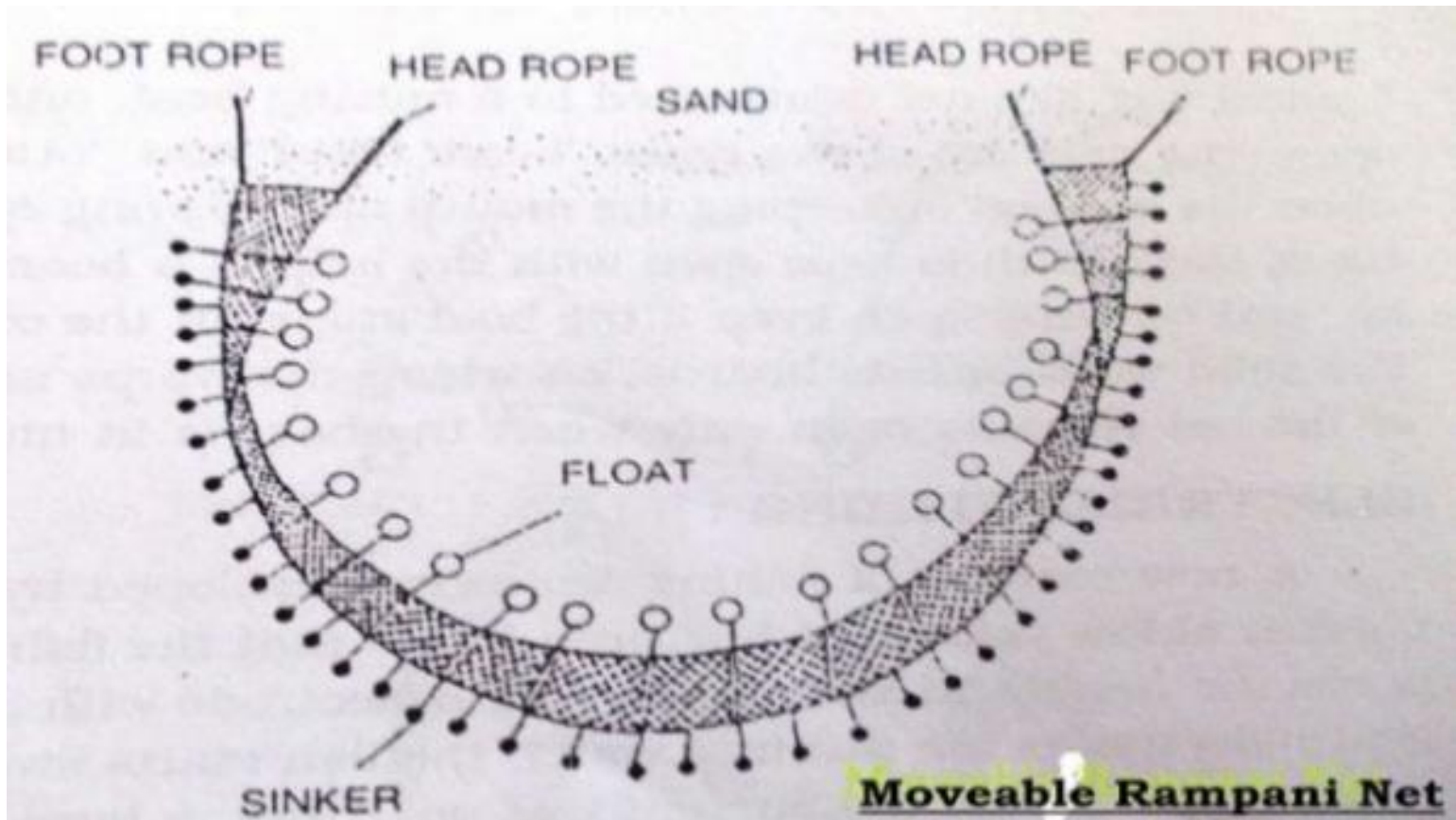
Set Bag Nets

2. Drag net (Shore seines)

A dragnet consists of a pocket net, wing net, ropes, sinkers and floats. The nets are generally made of cotton or nylon with cotton ropes. Depending on the area of fishing and the type of the fish to be caught, their lengths, depths and mesh sizes may vary from place to place. It has got different names in different places of the country, such as 'Ber Jal' in Orissa, 'Maha Jal' and 'Kona Jal' in Bihar and Bengal. The 'Ber Jal' of Orissa and 'Alvi' of Andhra Pradesh are almost the same

Shore seines or Rampani net

- Rampani nets are a wall of net divided into three layers.
- An inner fine-meshed net is sandwiched between two outer, larger meshed nets.
- Rampani Net are also two types -:
 - 1) Fixed Rampani Bag Net
 - 2) Moveable Rampani Net



3. Gill net and Drift net

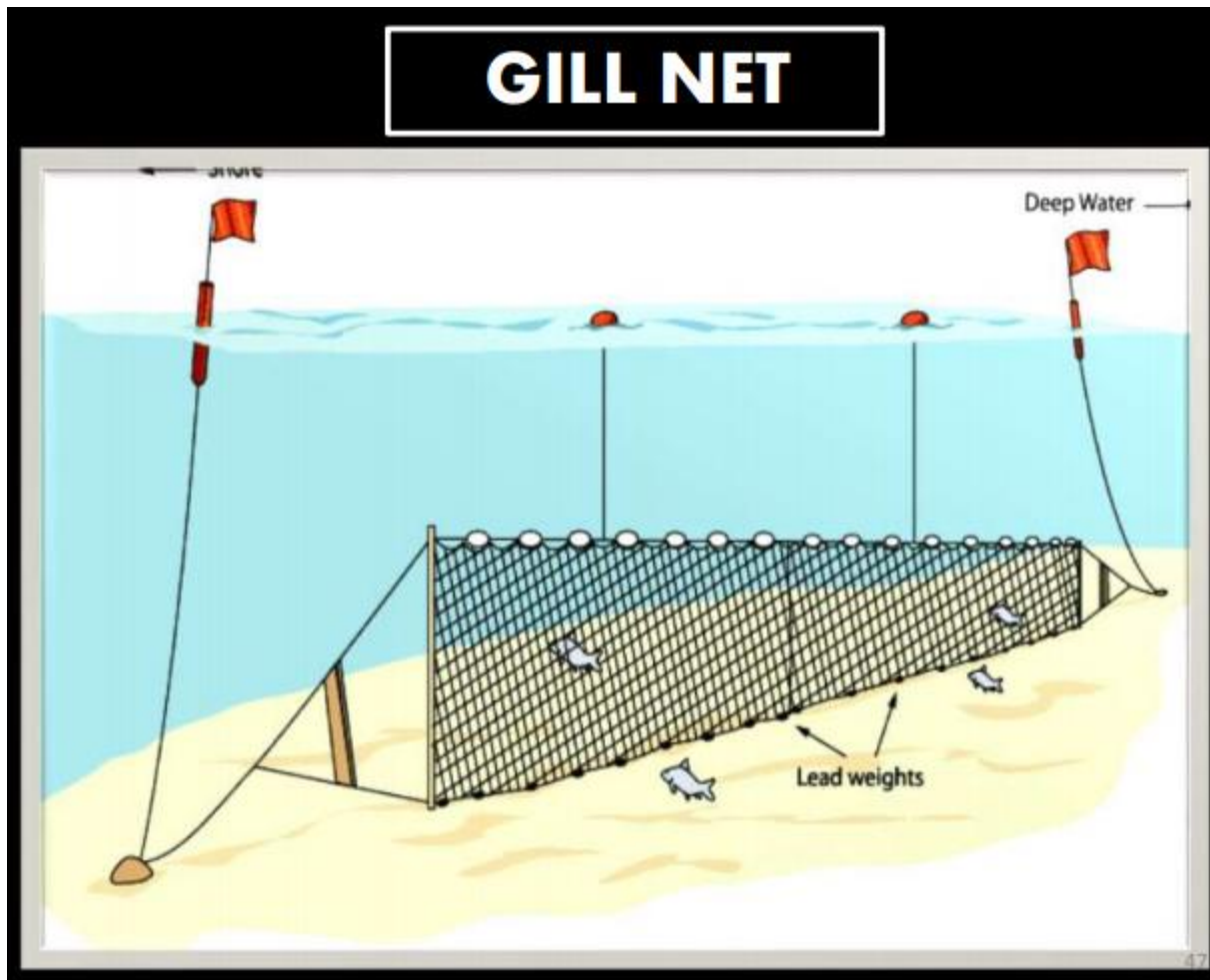
Gill nets are wall-like nets with floats attached to the head line rope and sinkers fixed, to the foot line rope. The mesh size varies with the size of the fish species to be caught. The net is set in transverse direction of the moving fish or fish shoal so that when the fish tries to cross the net wall, the head portion along the gill line gets entrapped. When the fish struggles to escape, it gets stuck up behind the opercle.

Because of this entrapping at the gill line, the net has been assigned the name of gill net.

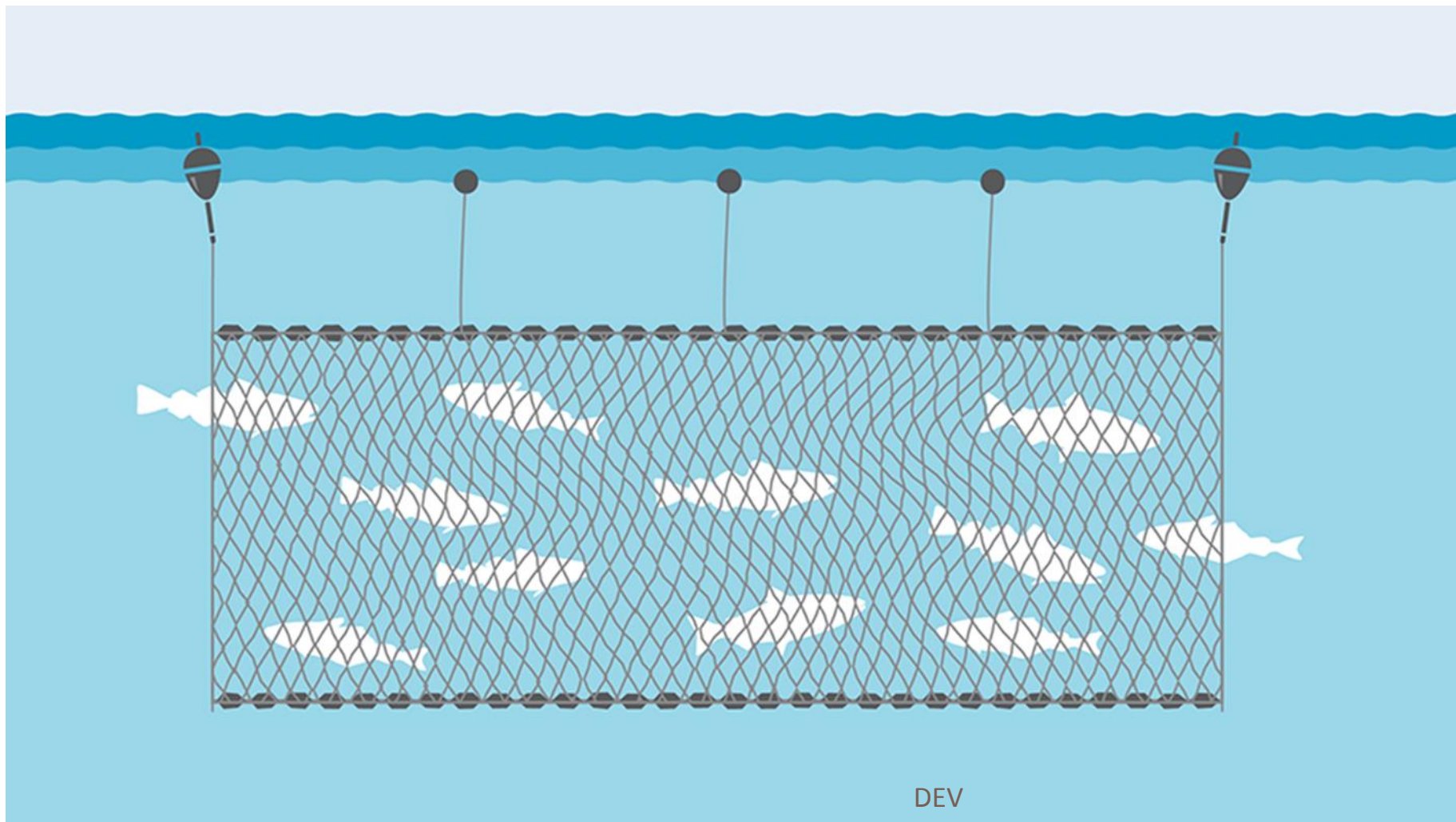
They are also called drift nets as they drift vertically with the help of floats and sinkers. On the basis of setting, gill nets are of floating types, anchored type and staked type. Among drift nets, Chhandi jal is more popular.

- Three types of gill nets are in common use. They are
 - i. **Surface gill net:** This gill net is generally meant for entrapping surface feeders among carps. Two types of surface gill nets are in use – one is the set type and the other is the drift type. The fishes caught are generally surface feeders such as some major carps.
 - ii. **Column gill net:** The basic form of this net resembles the surface gill net. The length of the float rope is however, kept such that the net remains suspended in mid column of water. This net is operational in deep water. The catches are generally major carps.
 - iii. **Bottom gill net:** The material used and mesh work design is the same as mentioned before for surface gill net, As the net is to be set at the bottom of water, additional sinker weights are attached to the foot rope and the marker buoys or floats, kept hanging on the surface of water are given increased length of the rope.

GILL NET

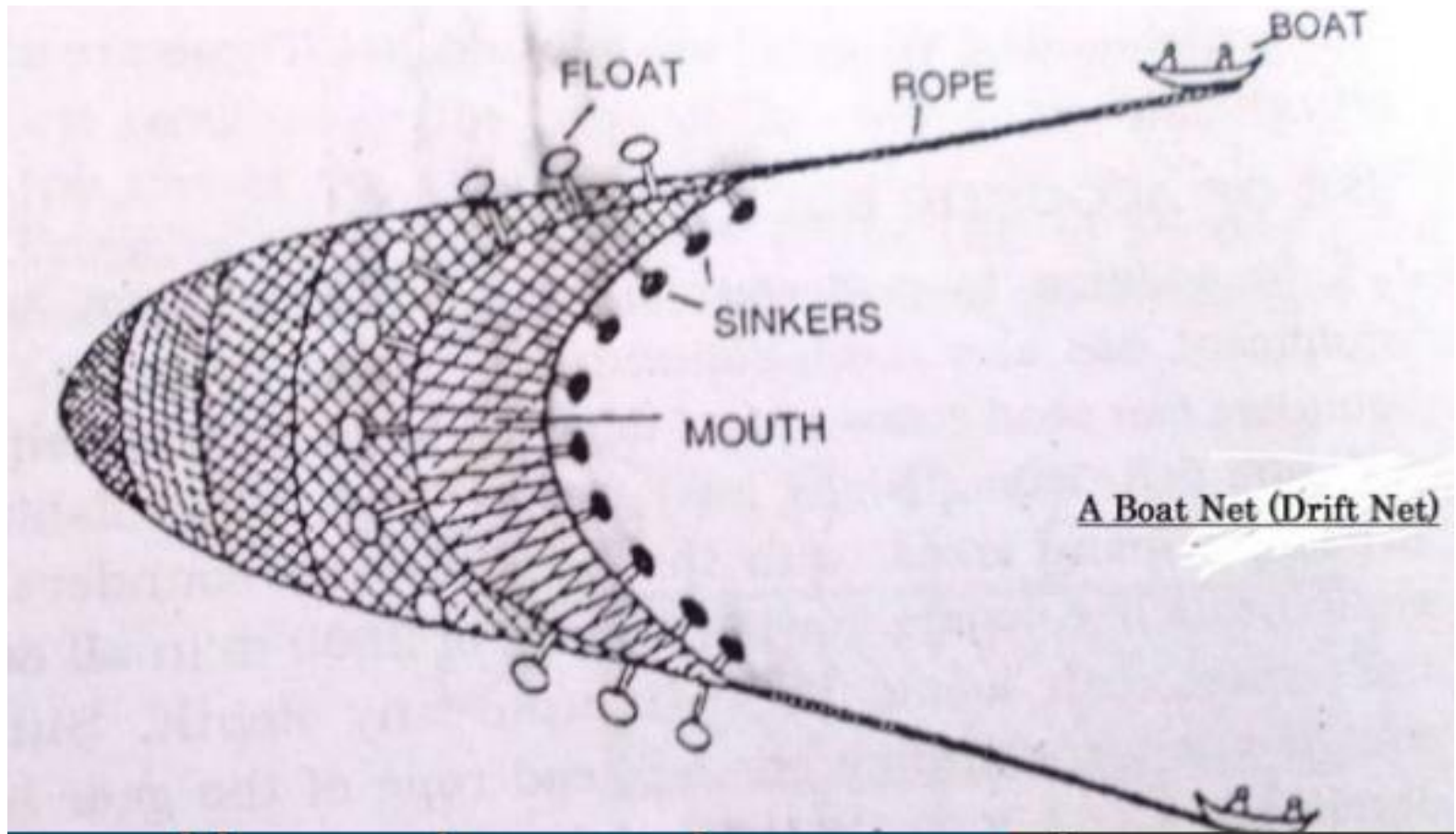


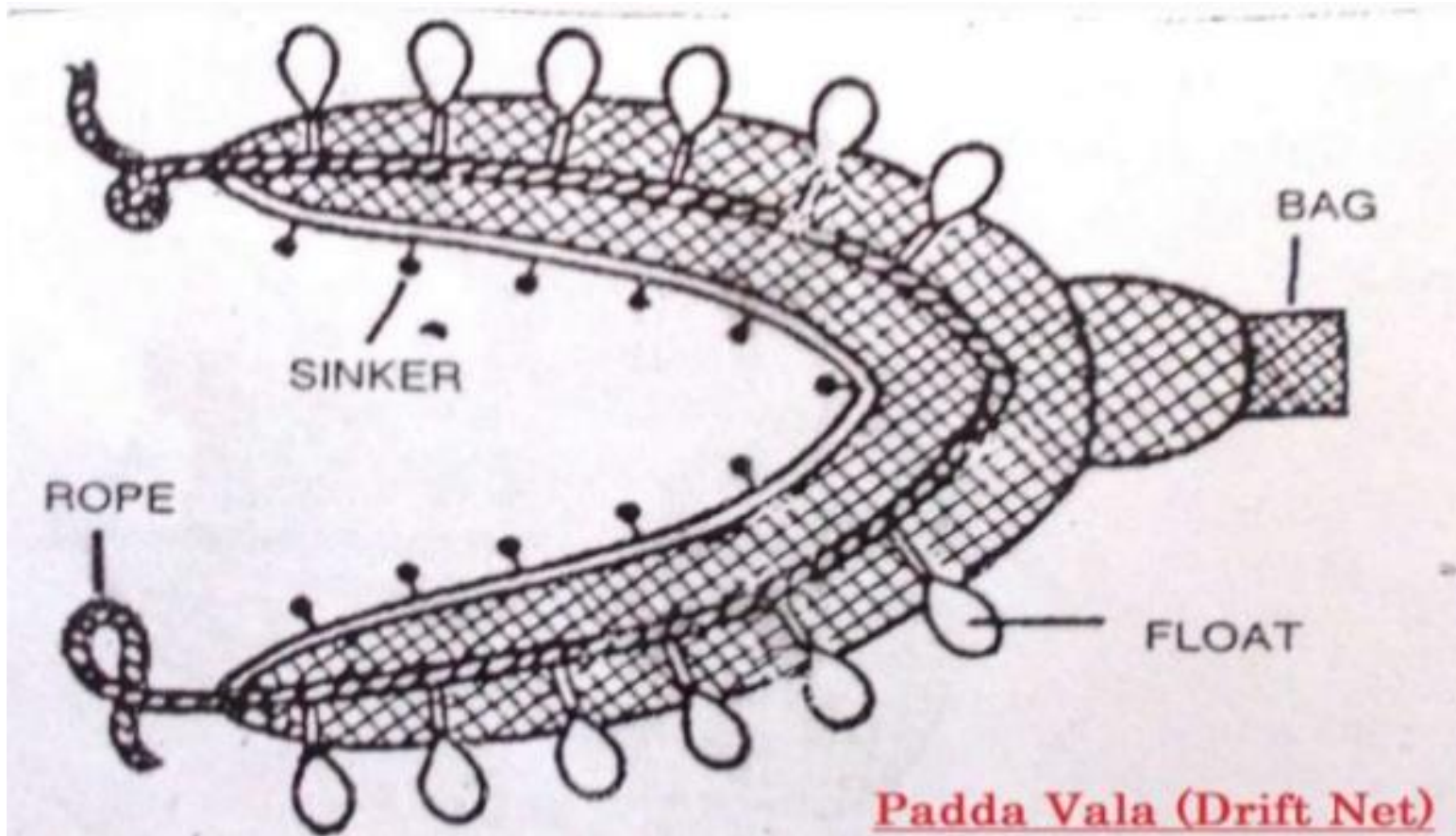
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DRIFT NET

- Large floating nets
- Unbreakable and invisible to most sea species
- likely to entangle large pelagic species : dolphins, whales, sharks, turtles, and rays.
- Driftnets have earned the nickname “walls of death”.
- These nets which are not anchored.

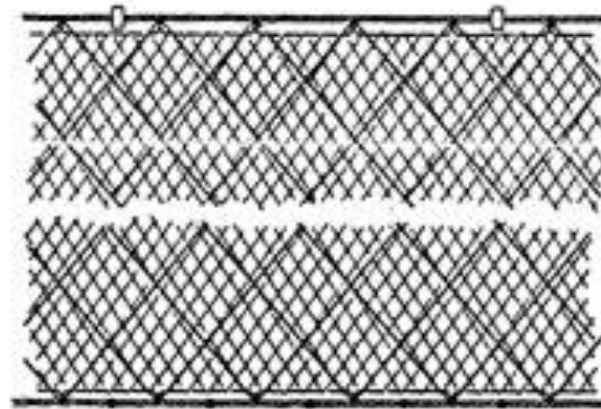
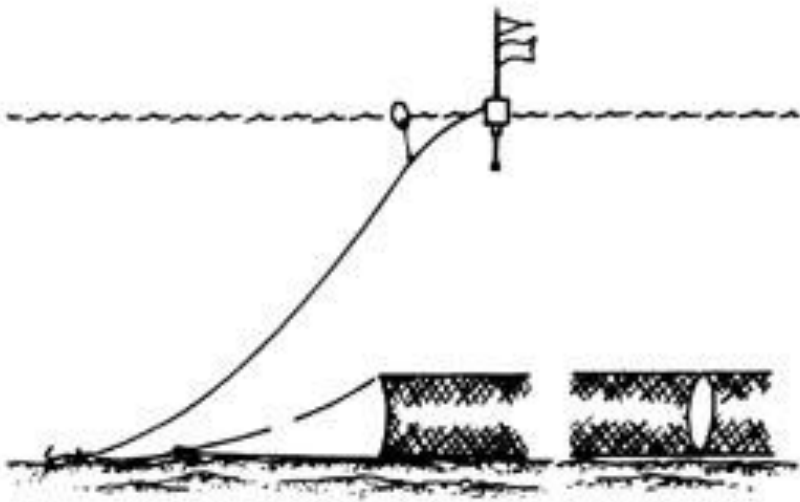




4. Trammel net

This net is a modified form of gill net, comprising three layers of gill nets. The inner or middle net possesses a small mesh but larger depth. It is held between 2 outer nets with a large mesh but smaller depth. Because of this peculiar set up of three nets, fishes of various sizes are generally caught by this modified form of gill net.

It has been observed that small fishes are gilled in the fine mesh working of inner nets, but larger fishes, while swimming, strike against the outer nets. Consequently they get entangled in the pockets formed by the inner net as extrusion. In large tanks and reservoirs of many places, this net is operational to catch fishes of various sizes



Trammel net

Target Species Demersal species, fish and crustaceans

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5. Cast net

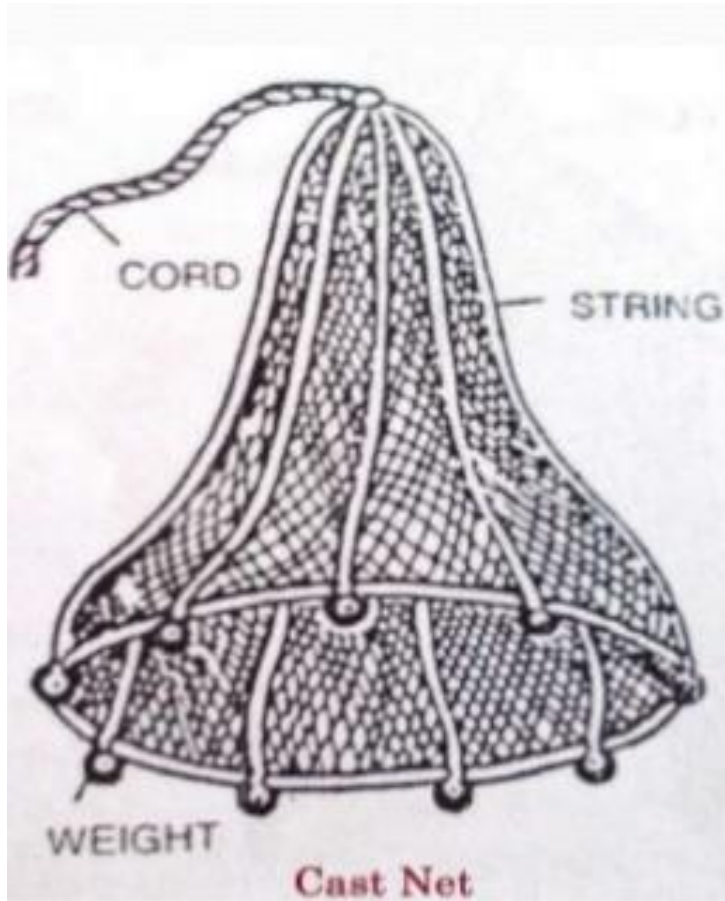
They are well adapted for the capture of small shoaling fishes. This net is commonly used in shallow waters. This is a circular-mouthed or umbrella shaped conical net with about 2.5 cm mesh size. A strong cord or warp is attached to the apex of the cone or umbrella and a number of lead or iron cylindrical sinkers are fixed all along the circular periphery.

The net is cast into the water from the margin of the tank or pond or from a boat or stakes made of bamboo or wood in such a way that a group of fishes get covered over by the net and, thus, entrapped. The hand rope is carefully pulled to close the spread skirt. The overall result of operation is such that the fishes are caught in the pocket of the net. Its operation is always in shallow water areas devoid of weeds and submerged obstructions of any sort.

CAST NET



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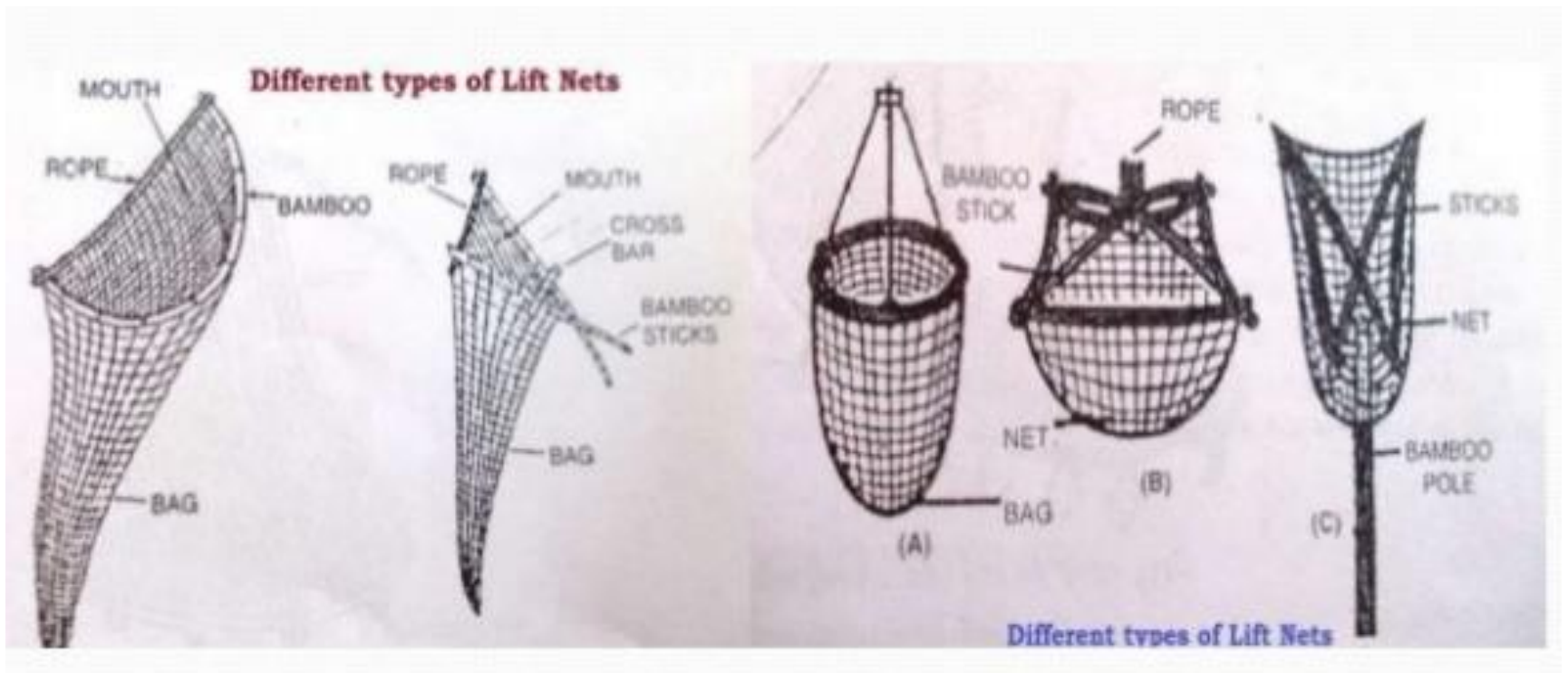


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6. Dip net or Lift net

Several kinds of dip nets are in use for catching small sized fishes. They are triangular, rectangular or square in shape and are made up of bamboo frame along which the net is laced skillfully. Some bait such as the ball of wheat flour or cockroach or earthworm is often put on the net or somehow kept suspended over the net to attract fishes.

Small sized nets are provided with handle and are generally operated by hand from some boat or raft, but for the operation of larger ones a long bamboo pole, which is kept fixed to the centre of the dip net, is used like a lever. There are four types of dip nets which are in common use in the rural areas: Triangular dip net (also called 'Bhesal jal'), Kharra jal (another form of triangular dip net), Hela jal (another triangular net), Khorsula jal (rectangular dip net)



CHINESE DIP NET



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7. Purse Net

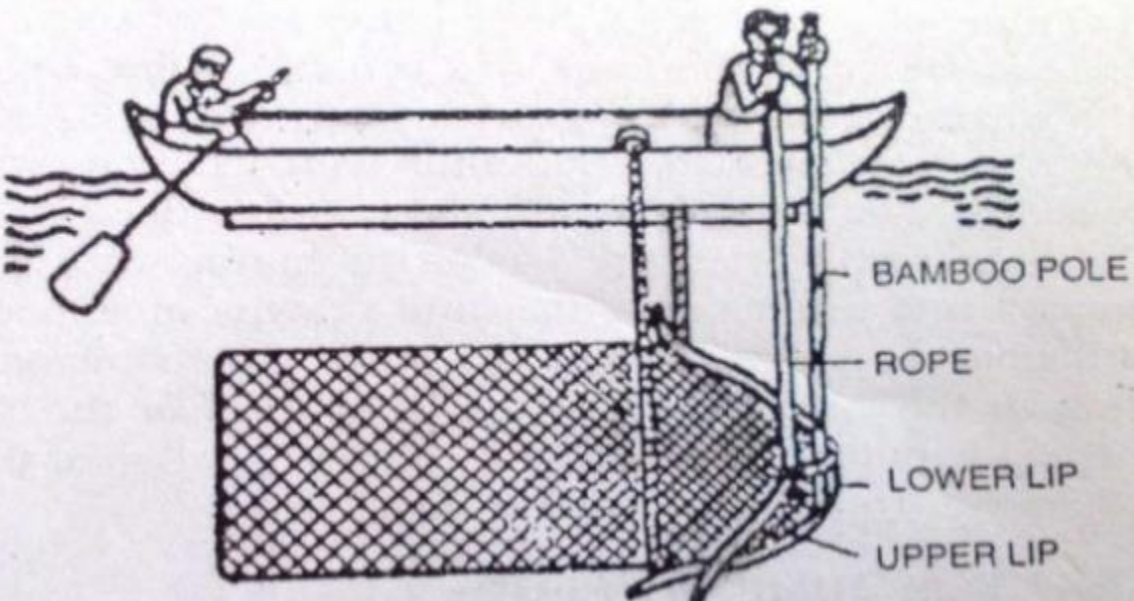
This is purse shaped net, operational from a boat. It is generally used in Ganga river system for catching Hilsa fish.

Two types of purse nets are in use: (a) Kharki jal and (b) Shangla jal.

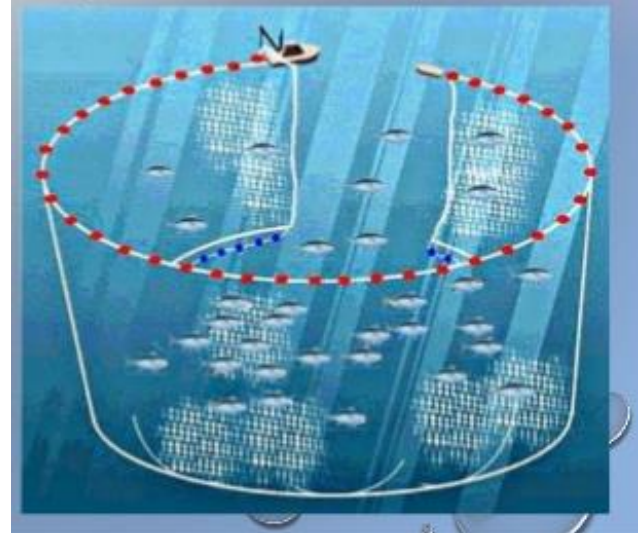
8. Bag set net

The bag set net has appearance of a conical type of net and is provided with wing or is without wings. The size of the mesh varies as per expectation of kind of fish species to be caught. The length of the net is variable between 5 m to 10 m. The cod end of the net is kept closed by a knot, but when entrapped fish are to be taken out, the pocket is unfastened by loosening the knot. Before operation two strong bamboo poles or wooden stakes are fixed erect by exerting pressure against the soft bottom of the river or tank or reservoir

Kharki Jal (Purse Net)



SHANGLA JAL
(Purse Net)



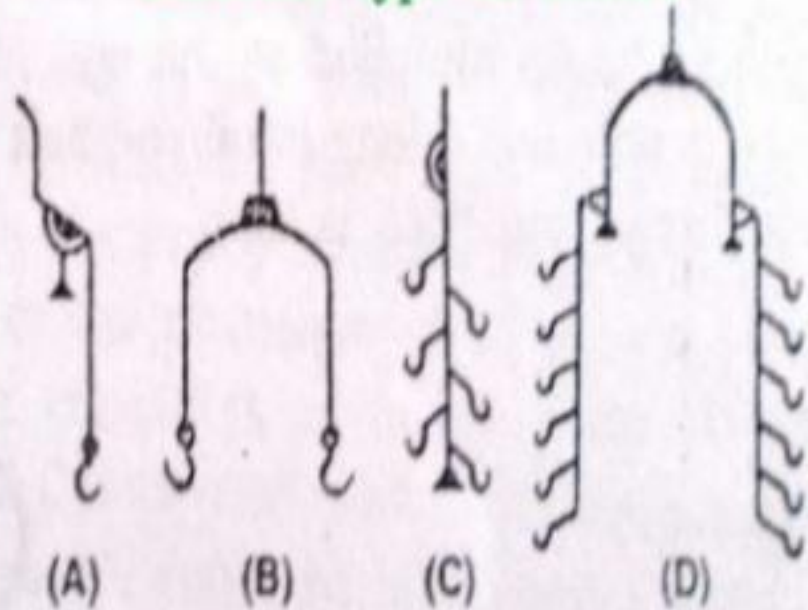
9. Hooks and lines: Among some other devices of minor grade for catching fishes, more popular are (i) pole and line and (ii) hook and long line, (iii) hand line which are used generally in ponds, tanks, rivers and reservoirs.

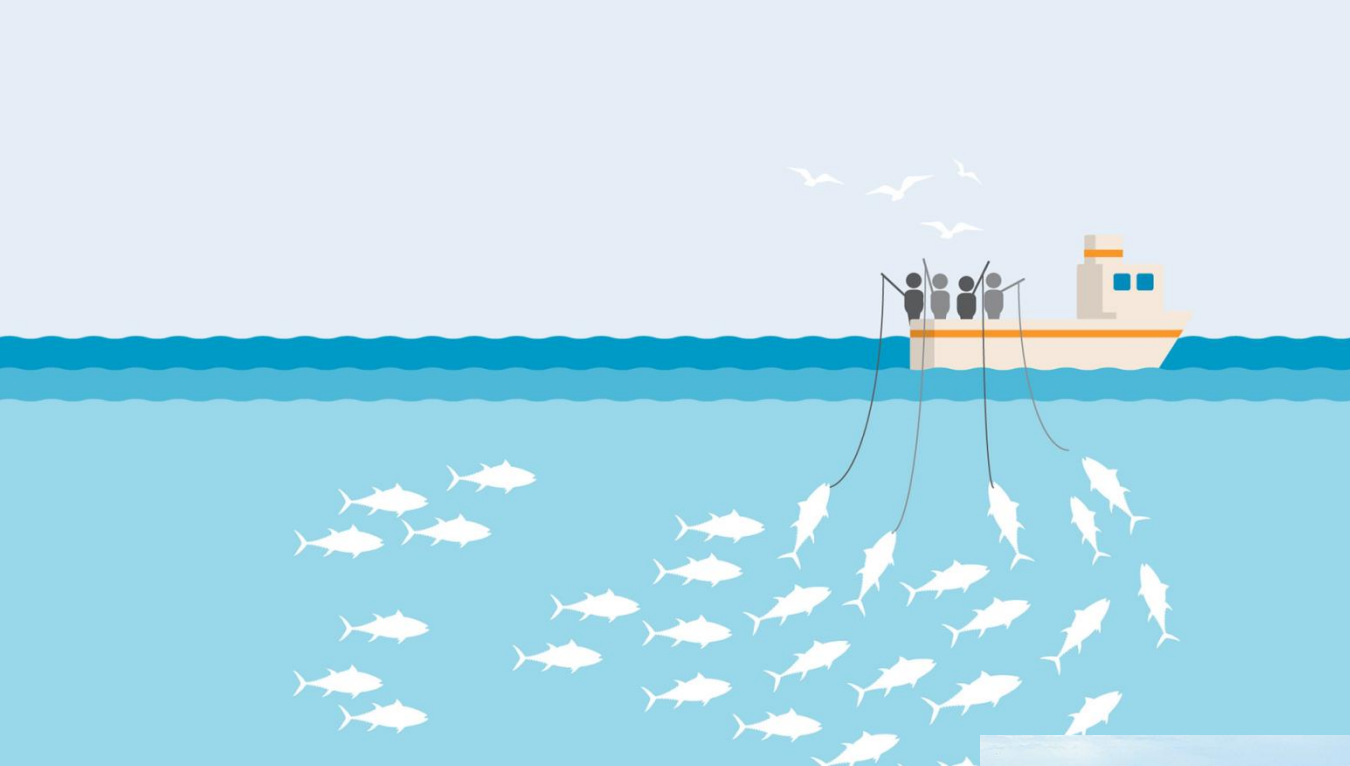
i. Pole and Line: This simple gear consists of a pole, a line and hook. A suitable bait (e.g. generally the earthworm piece) is fixed to the hook, and the line with hook is dropped at a distance in front, after selecting a prospective fishing site. Fish gets lured in water and bites the bait. Instantly, the indicator vertical float gets drowned and the pole holder pulls the pole by a swing action on the pole.

Hook's & Line's



Different type of Hook's





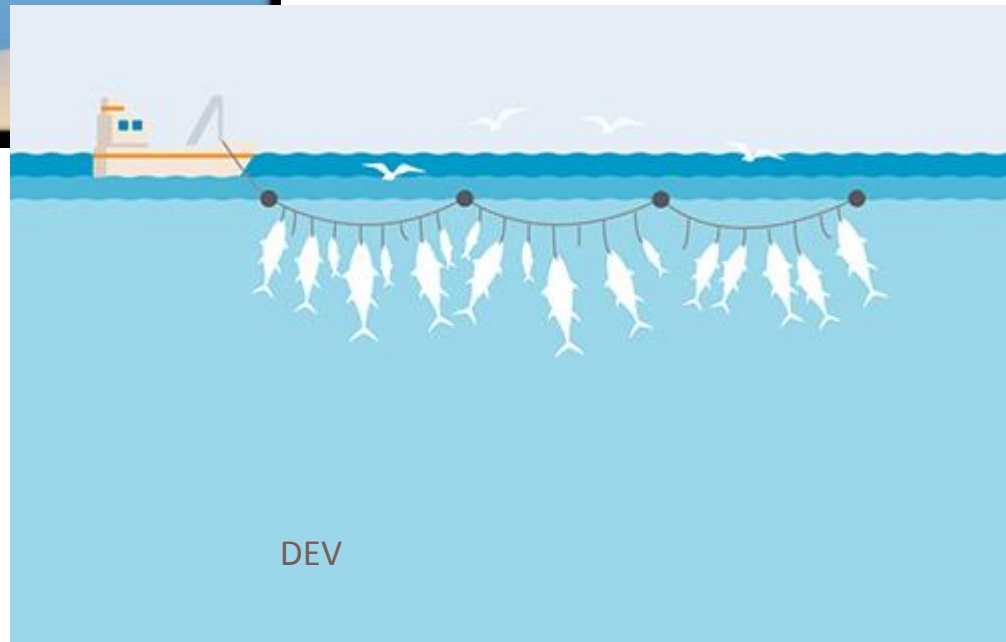
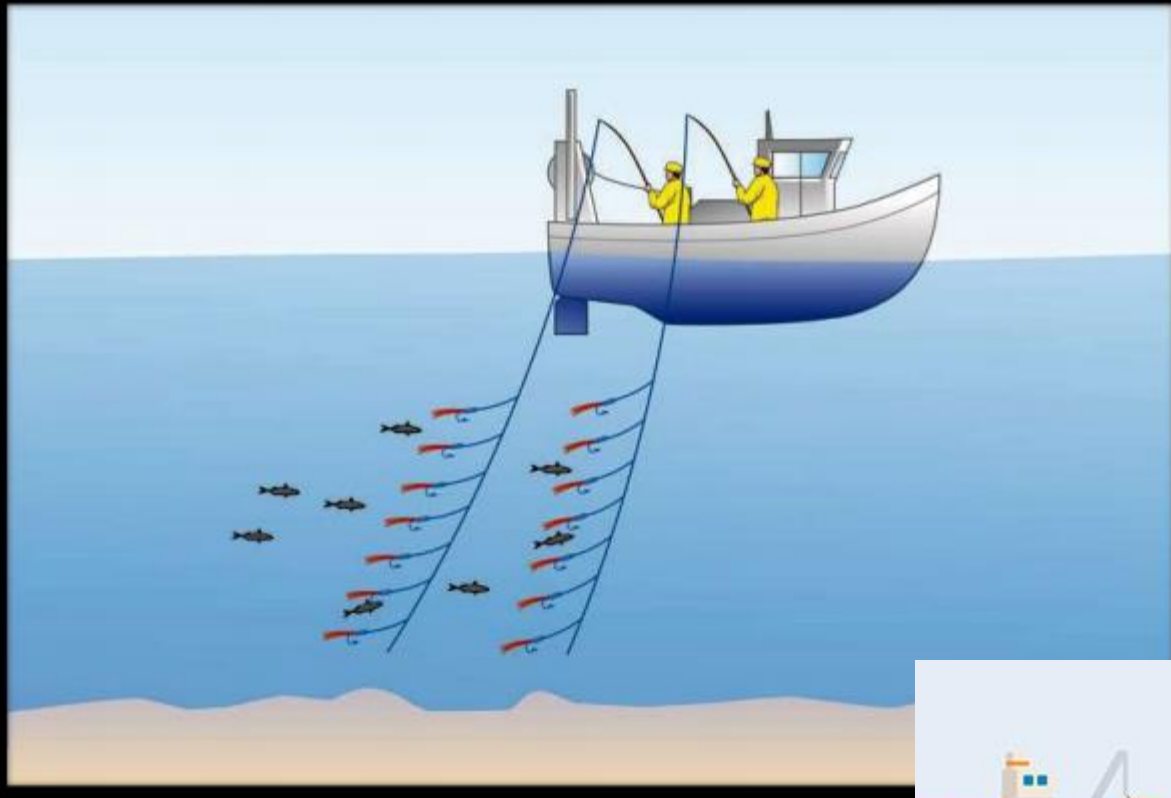
Pole and Line



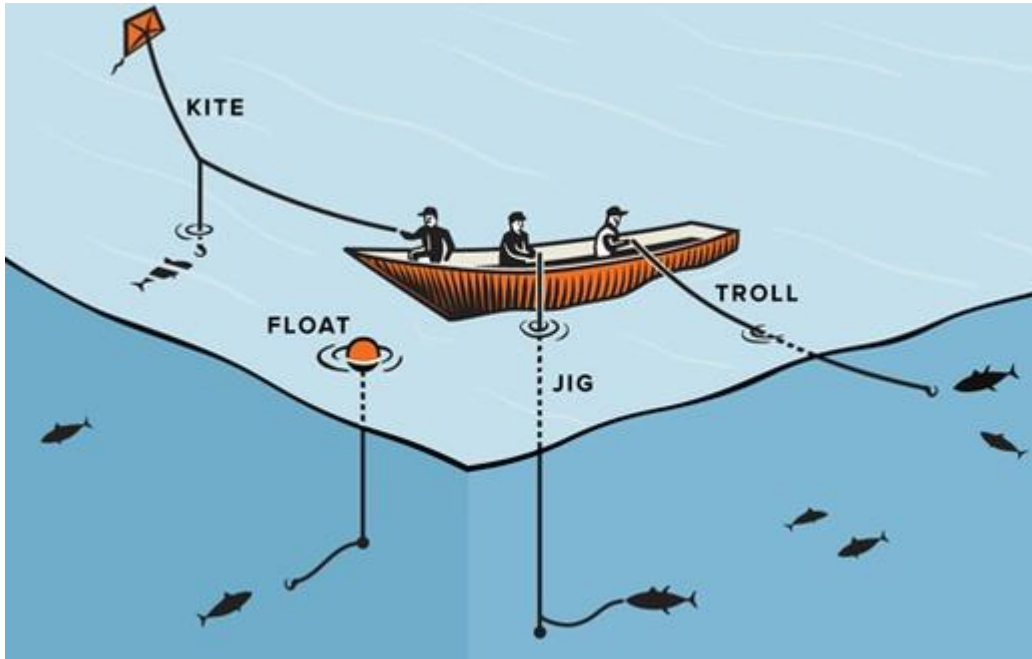
ii. Hook and long line: The gear consists of a long main line, shorter branch lines tied to the main line, hooks, buoyant or floats and sinkers. A suitable bait (earthworm piece, fish piece, wheat paste) is used depending upon the type of fish to be caught. The line is spread with the help of a boat taking care that the hooks are in proper position. Main catches are *Wallago*, *Mystus*, Murrels, major carps. However, cold water fishes (eg. Trouts) are the main catches in cold water lakes.

iii. Hand line: The polyamide monofilament lines have a terminal lead sinker and a hook. The length of the line varies according to the depth of the operating area and various size hooks are in use. Different types of baits are used according to the fish sought for.

HOOK AND LINE



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Hand line

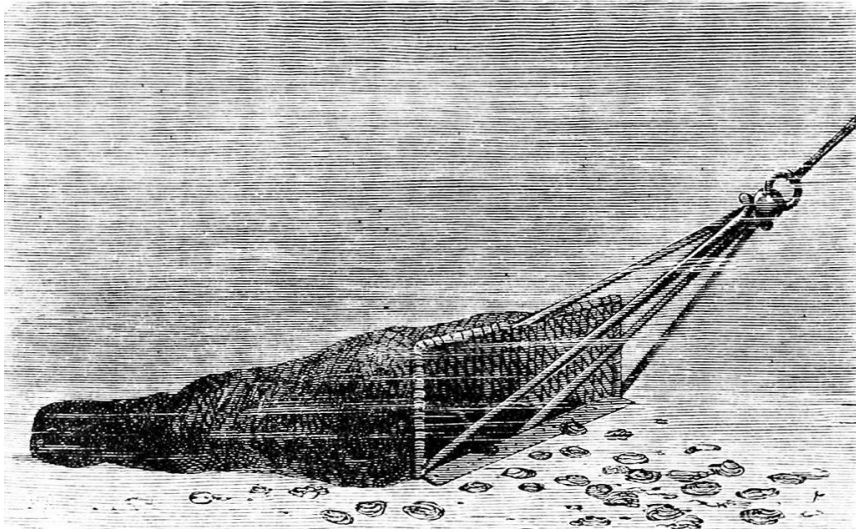


Bait and its types: It is a kind of 'lure', fixed on the hook, used for attracting the fish and then hooking it with the hook

- **Live bait:** It is a natural organism fastened to the hook. The most common baits are small sized fishes, worms, insects, crustaceans, molluscs, frog etc.
- **Paste bait:** Rice flour, Gram flour mixed with finely grated cheese, wheat flour added with a little honey, boiled rice mixed with mustard oil cake powder etc. are used to make the paste. Several fishes (mainly herbivores) are lured by 'paste baits'.
- **Gram bait:** Gram seeds are threaded on the hook (at least 3 on one hook) to bait Mahseers.
- **Artificial baits:** Certain kinds of artificial baits are used when others fail. They may be **spinning baits** (aluminium painted body revolving around a bead head), **plug baits** (an imitation of a living fish and made of plastic or wood and painted in different colours), and **artificial flies** (imitation of an aquatic insect).

10. Dredges

Dredges are dragged gear, with an oblong iron frame with an attached bag net, operated on the bottom usually for collecting shellfishes such as mussels, oysters, scallops, clams etc. They are of varying weight and size and are operated from boat or in shallow waters by hand.



11. Traps

They are stationary nets and fishes are directed towards an enclosure through guarded entrance. Various types of traps are used for catching aquatic organisms. The following types are used in inland waters.

- a. **Pots:** They are small traps designed to catch fish and shellfish. They are fabricated as small cages or baskets from locally available materials such as wood and wicker and also by using wire netting, metal rods, synthetic netting and reinforced plastic. Target organisms are enticed into the enclosure by bait or shelter spaces. They are provided with one or more entrances. The size, shape and position of the entrance are optimized for the target species.

b. Barriers (Barrage traps): Barriers like walls or dams made of stones, mud, netting or split bamboo pieces are used to trap fishes during low tides. In water where there are no currents, fences are provided to guide the fish into pockets. They are operated by small scale fishermen. Hilsa traps are operated below the confluence of Ganga and Yamuna.

c. Fish screens: Fish screens are of common use to enclose a selected water area of the river for fishing. Thin pieces of split bamboo are woven to form a sort of screen of generally 10 m length and 1 to 1.5 m height. Several such screens are joined together to surround a shallow tidal area at the time of high floods in the river. When the flood water recedes, several kinds of fish are left behind on the surrounded water area and these are easily collected by the lift net or properly handling a manuring net. Generally carps, catfishes, and murrels are thus collected.

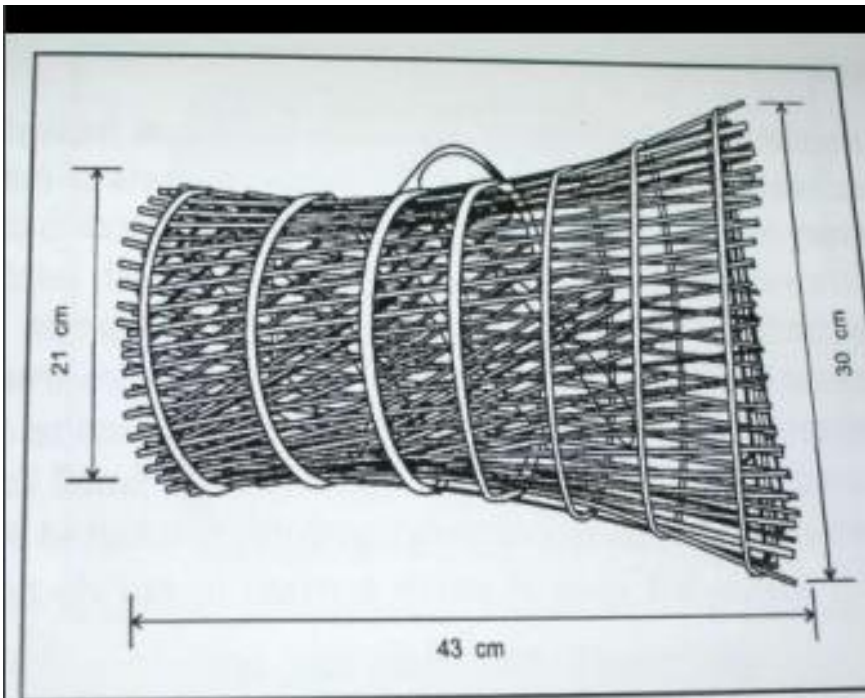


Fig. 13.3 Filter trap

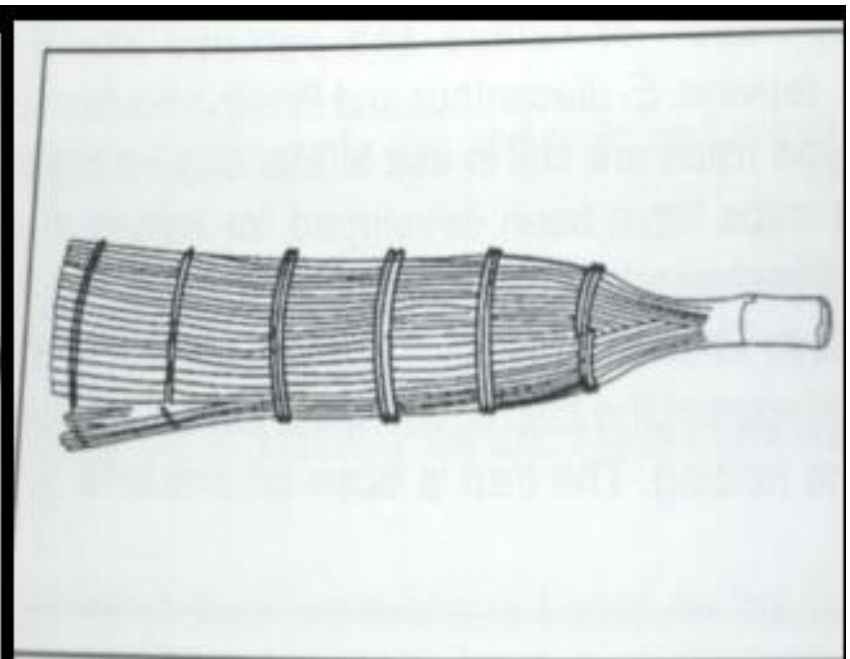


Fig. 13.2 Tubular trap

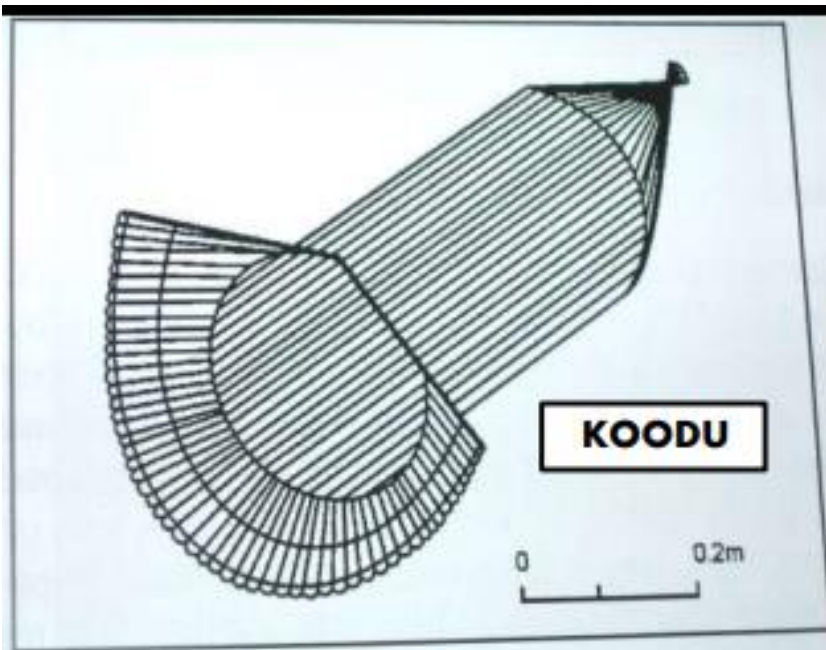


Fig. 13.4 Aproned filter trap

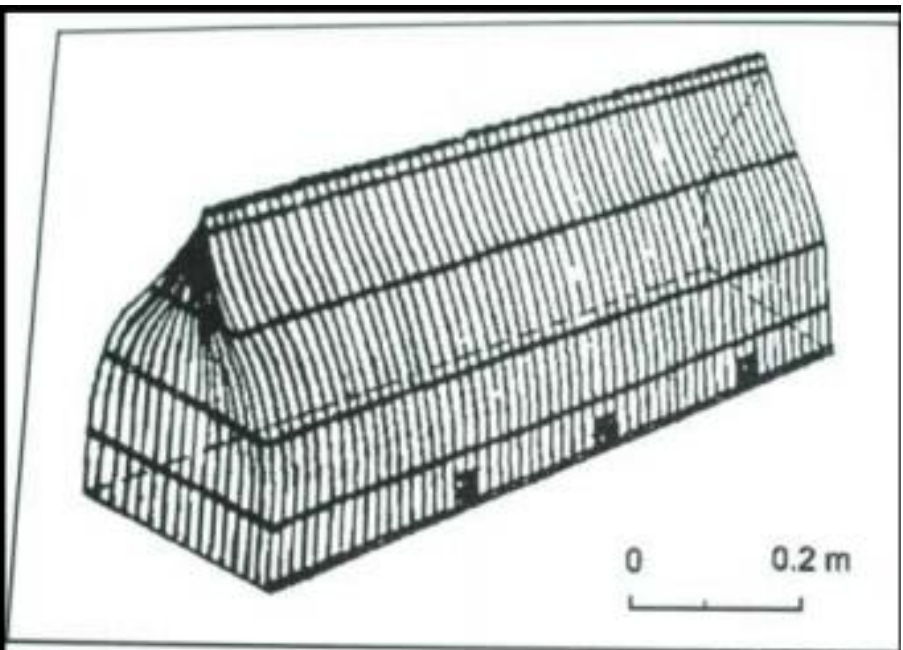


Fig. 13.5 Basket trap

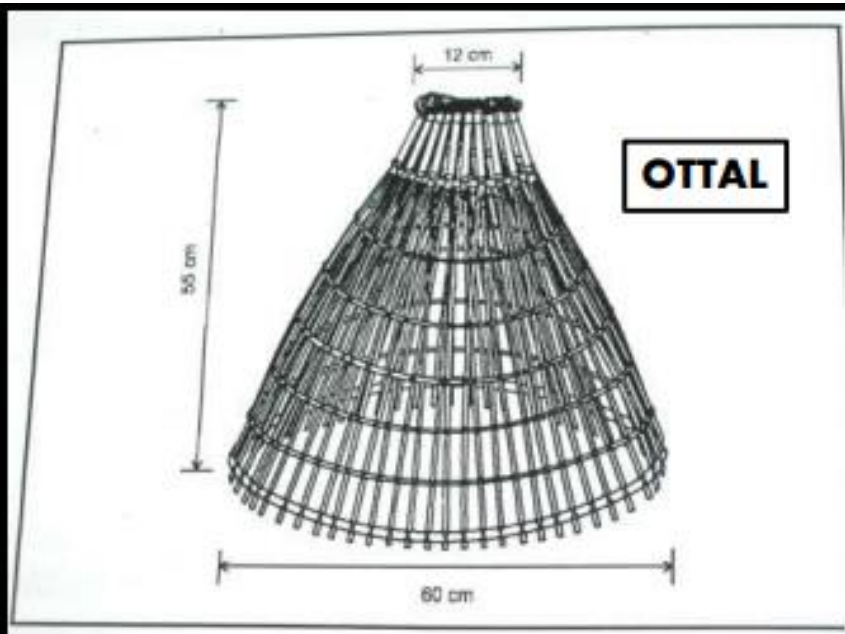


Fig. 13.10 Plunge basket

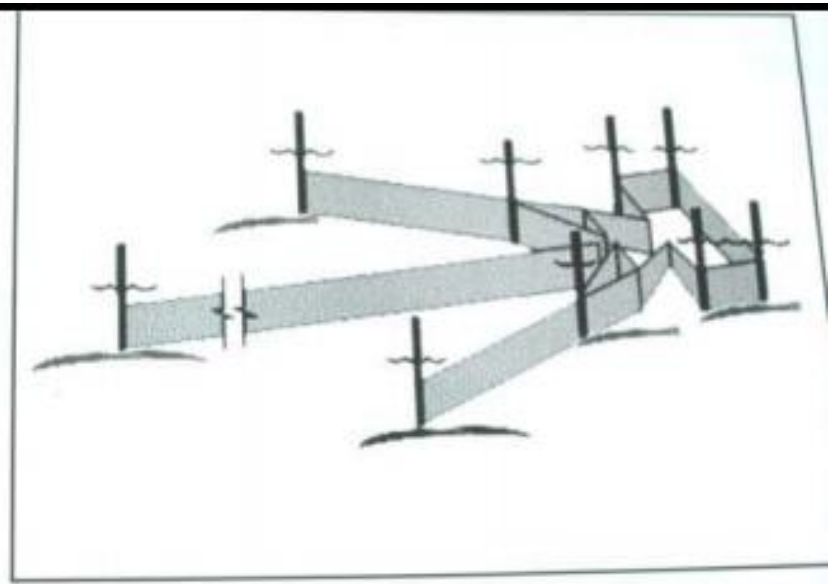
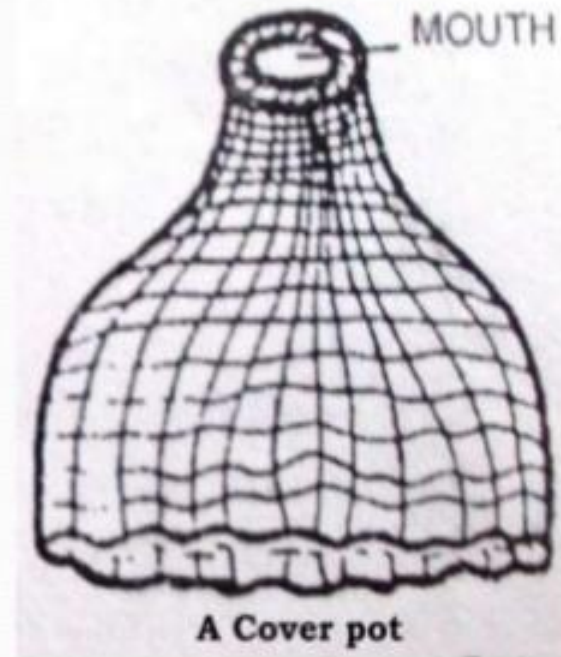
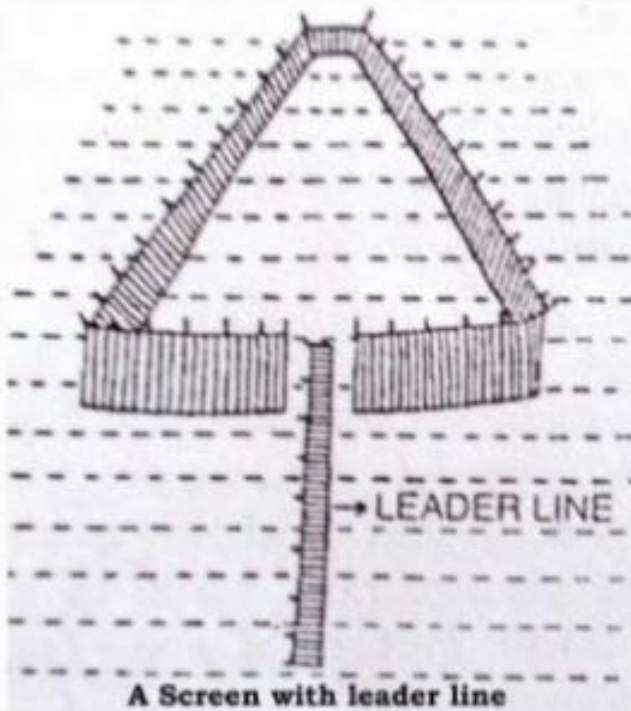


Fig. 13.11 Pound trap

Fish Screens



12. Fish Aggregation Device (FAD)

Fish Aggregation Device (FAD) is a man-made object that is used to attract fishes. It consists of buoys or floats tethered to the floor of the water body with concrete blocks. FAD's attract fish for numerous reasons that vary by species. Submerged bundles of twigs or branches of trees make attractive hiding places for fishes. The fishermen can catch the aggregated fishes easily by using small scoop net. This method is practiced in certain downstream areas of the river.

