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**Traditional devices and gear
for collecting fry of "sugpo"
giant tiger prawn, Penaeus monodon
in the Philippines**

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INTRODUCTION

Annual Philippine production of prawns and shrimps is 16,100 metric tons valued at about P700 million (US \$ 87 million) (Anonymous, 1978). Among these, the giant tiger prawn, *Penaeus monodon* locally called “sugpo” or “lukong” plays a commercially important role as an export item. The production of the giant tiger prawn is estimated to be 2,000 tons annually half of which comes from brackishwater fishponds (Nukiyama, Pers. Com.). Because of its high commercial value, the demand for fry (seed or seedling) collected from the wild has been great. This is one reason hatcheries using artificial seed production techniques are increasing in number in this country. Hatcheries could help meet the increased demand.

As far as the author is aware, the different devices and gears used for catching sugpo fry as well as bangos (milkfish) fry in the Philippines are fragmentarily reported (Delmendo and Rabanal, 1973; Anonymous, 1976; Anonymous, 1978) and no illustrations are available except for the fry lure “panugpo” (Umali, 1950).

This technical report deals with the description and illustrations of devices and gears which have been traditionally used in the rural areas of the Philippines for collecting sugpo (*P. monodon*) fry.

DISCUSSION

The devices and gears could be classified into two types, stationary and mobile, based on the construction as well as the collecting or catching method.

The former consists of fry lure, fry filter net, set fry trap; the latter includes scoop net, fry scare line, fry seine, triangular net, and fry bulldozer.

I. Stationary device and gear

1. Fry lure (Fig. 1)

Local name: *Bongbong, bungot-bungot, habong, pagungpong or palipi.*

Fry lures are simple devices made of bunches of *Paspalum vaginatum*, a brackishwater grass, dried twigs, or split coconut peduncle. These are set in the shallow portion of mangrove canals or brackishwater rivers where the lures are protected from strong tidal currents or waves. Each lure is tied to a long line of rattan string supported with bamboo or wood, or hung on wooden poles at intervals of 1.5 to 2 m. Sometimes the grass bunches are directly planted in the shallow area of the brackishwater bodies. Fry collectors visit the fry lures during low tide, mostly in the early morning, and place a dipping scoop net beneath each lure. They shake it vigorously to remove the clinging fry into the dip net. These actions are accomplished by the collectors from a wooden dug-out, locally called "banca" or directly from the water.

The fry lure as a catching device derives its effectivity from the clinging habit of sugpo fry.

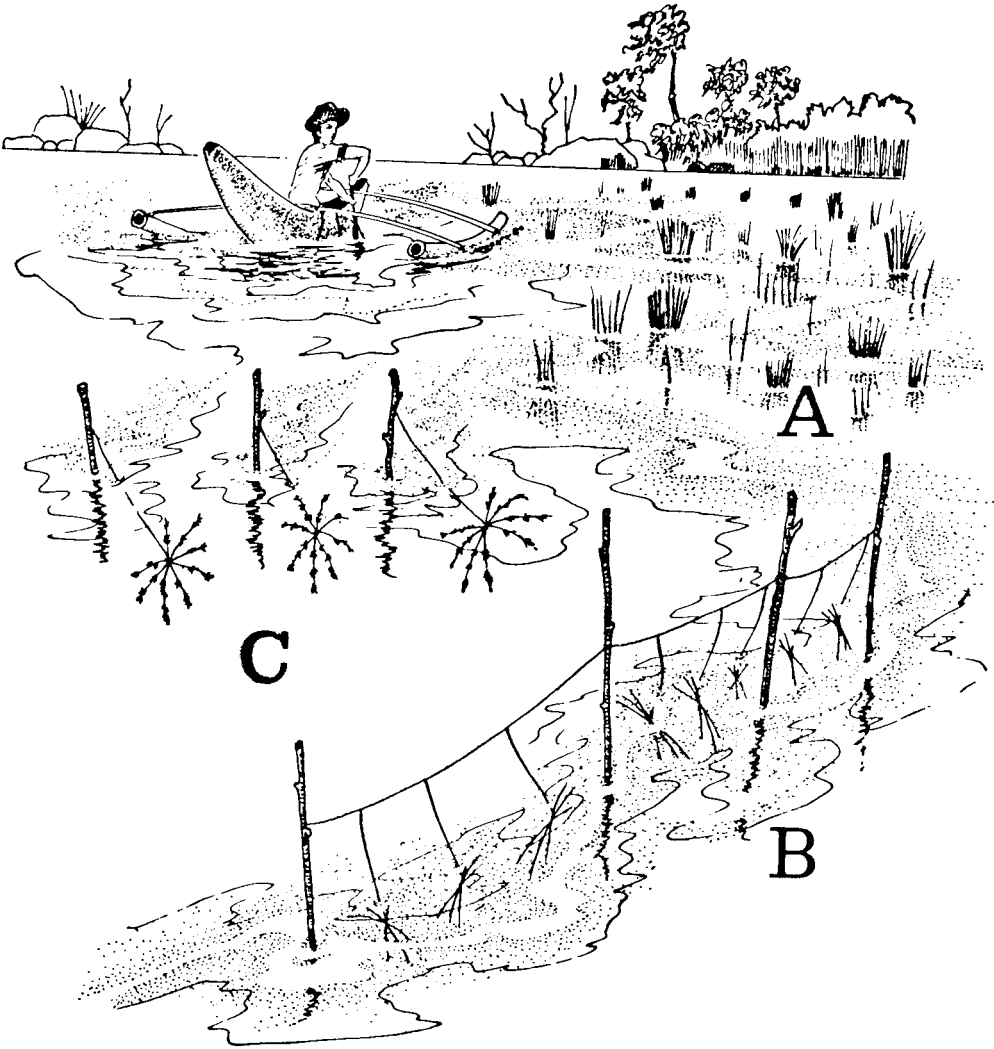


Fig. 1. Three kinds of fry lures. A, grass planted at mangrove area; B, lure made of grass connected with independent wooden pole; C, lure made of twig tied to vine string.

2. Fry filter net (Fig.2)

Local name: *Tangab*

The fry filter net consists of a guide and main nets, made of synthetic materials, and two pieces of bamboo, wooden or iron sticks.

The gear is usually located in water up to 2 m deep against the current, or slightly oblique to the shoreline when a moderately strong current is generated by offshore wind. The gear remains stationary but the fry are carried along with the wind-blown current into the net.

From time to time, an operator removes the contents of the codend (catching portion of the gear) which contains not only the sugpo fry but also other penaeid fry and many other living organisms. He brings them to shore and sorts out the desired fry. His collection usually amounts to more than 200 sugpo fry per hour, particularly during the moonsoon season.

This gear is adaptable to the migrating nature of the sugpo fry. It takes advantage of the fry being transported by the wind-blown current approaching the shore waters particularly when the water is turbid.

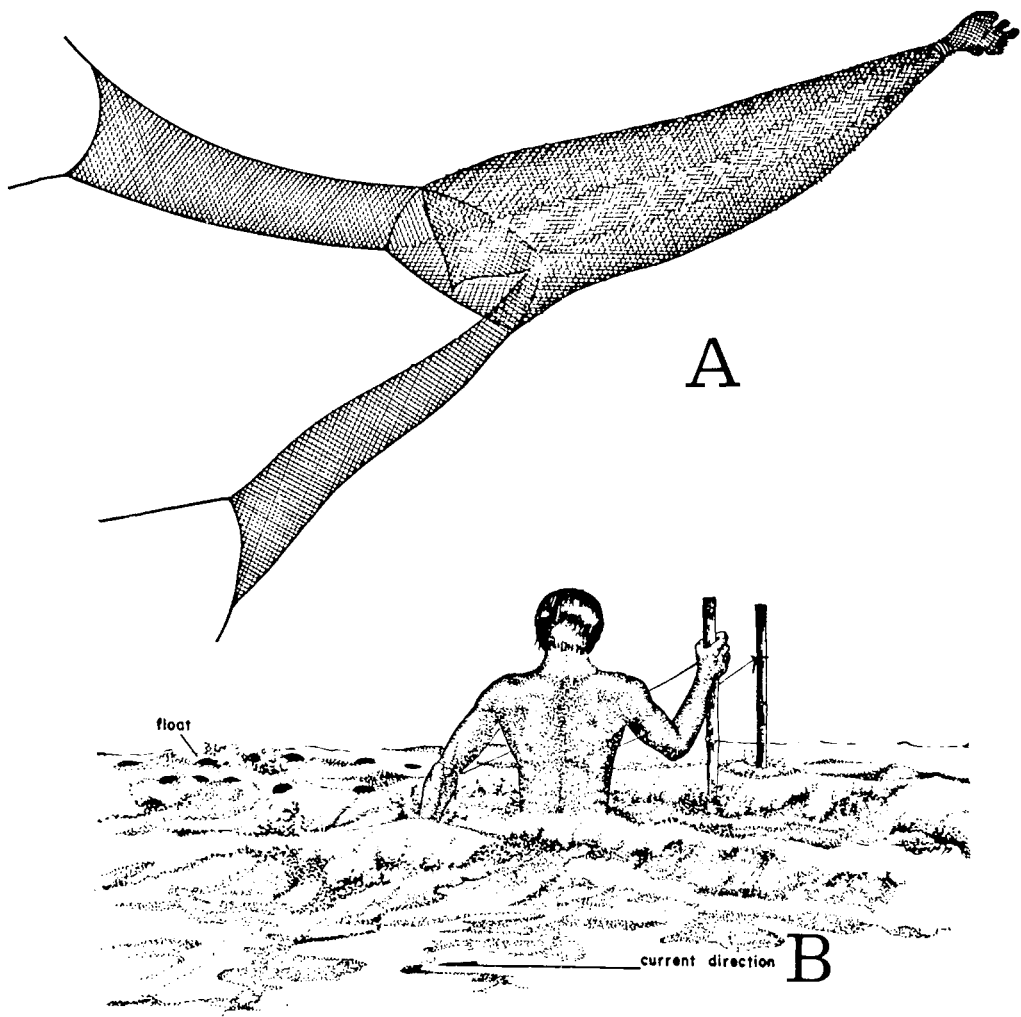


Fig. 2. Fry filter net. A, The net; B, operational view.

3. Set fry trap (Fig. 3)

Local name: *Saplod*

This stationary gear consists of a long bamboo raft, paired guiding parts and synthetic nets with 0.9 mm mesh size.

The bamboo acts as supporter and buoy. The guiding parts are made of synthetic nets, bamboo splits or nipa leaves to guide or scare the incoming fry. Net is attached to the proximal portion of the bamboo frame to concentrate the fry.

The set fry trap is located at the mouth of a brackish river and set with a bamboo pole or an anchor.

Facing downstream, the raft is usually operated during flood tide for the purpose of collecting the migrating fry with an incoming tidal current. A big fry raft is sometimes furnished with a nipa hut which serves as a resting place for the operator.

At night the operator uses a kerosene lamp for illumination and for attracting fry.

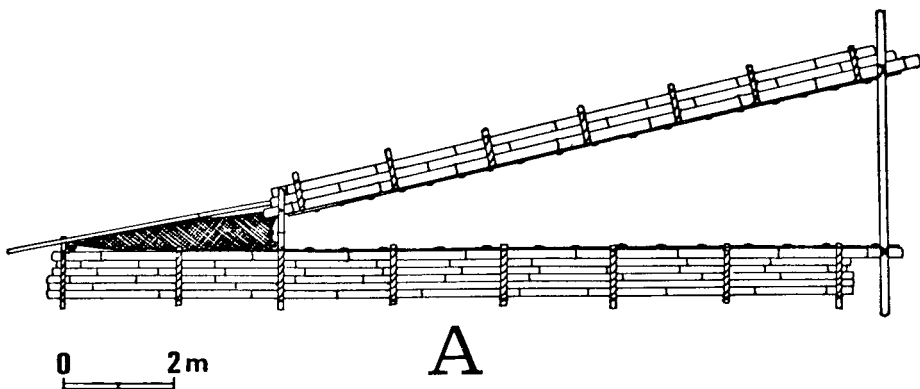
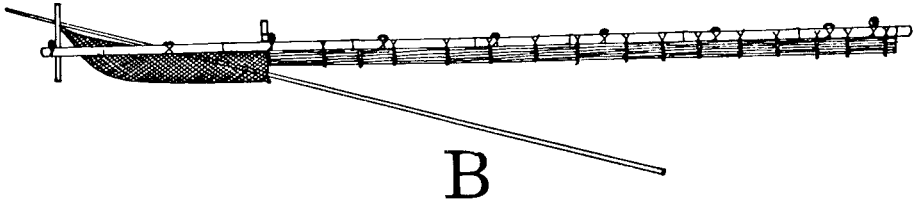
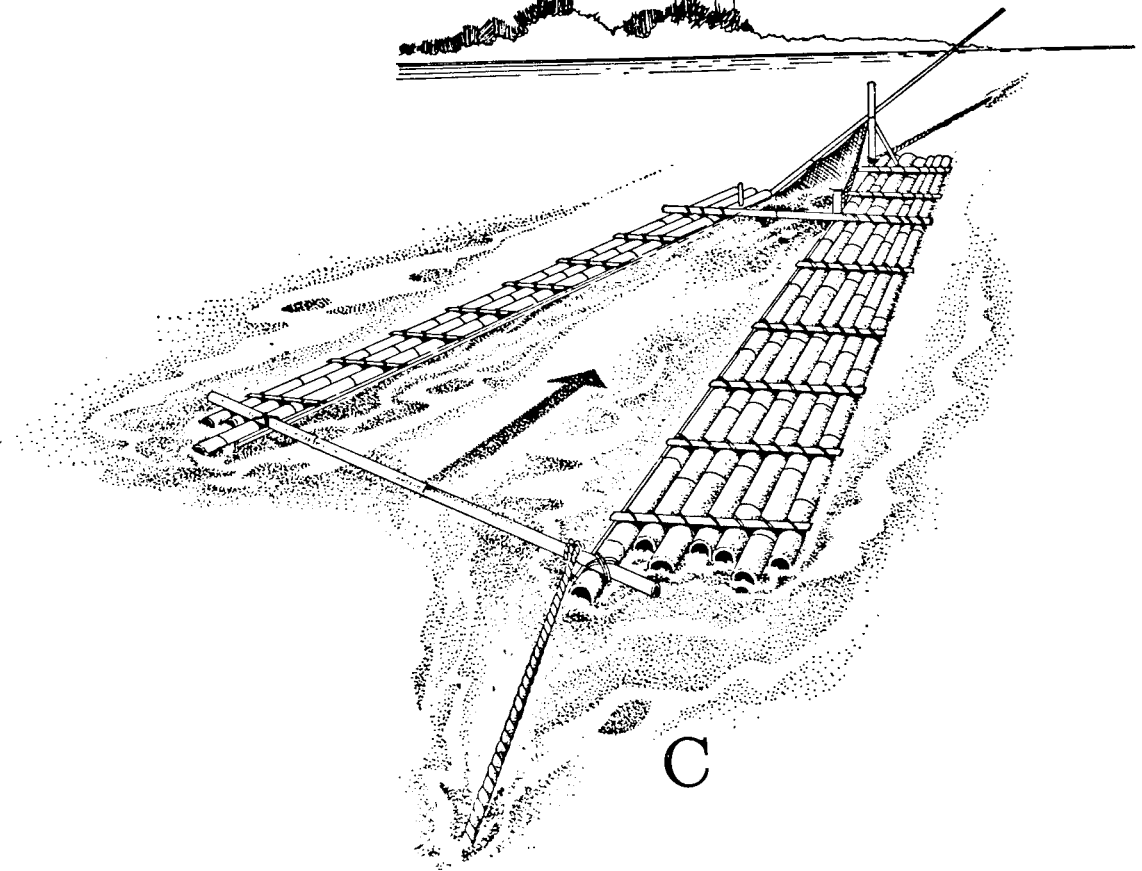


Fig. 3. Set fry trap. A, Top view;



B



C

B, Side view; C, Operational view.

II. Mobile device and gear

1. Scoop net (Fig. 4)

Local name: *Dusdus, salap or sicut-sicut*

The scoop net is a simple device with various types found in different regions, and is made mostly of locally available materials. During low tide, children and women visit mangrove areas and mouths of brackishwater rivers. At the shallow portions, they scoop the fry which are clinging to roots of nipa, mangrove trees, and any other organic objects suitable for resting or hiding.

This collecting method is resorted to probably because of the clinging habit of prawn fry and their relative inactivity during daytime when it is at low tide.

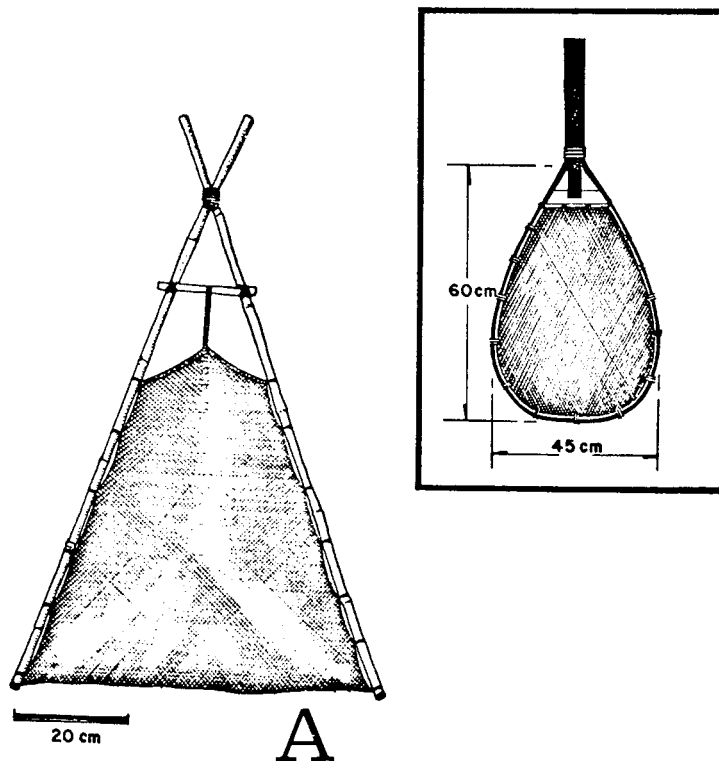
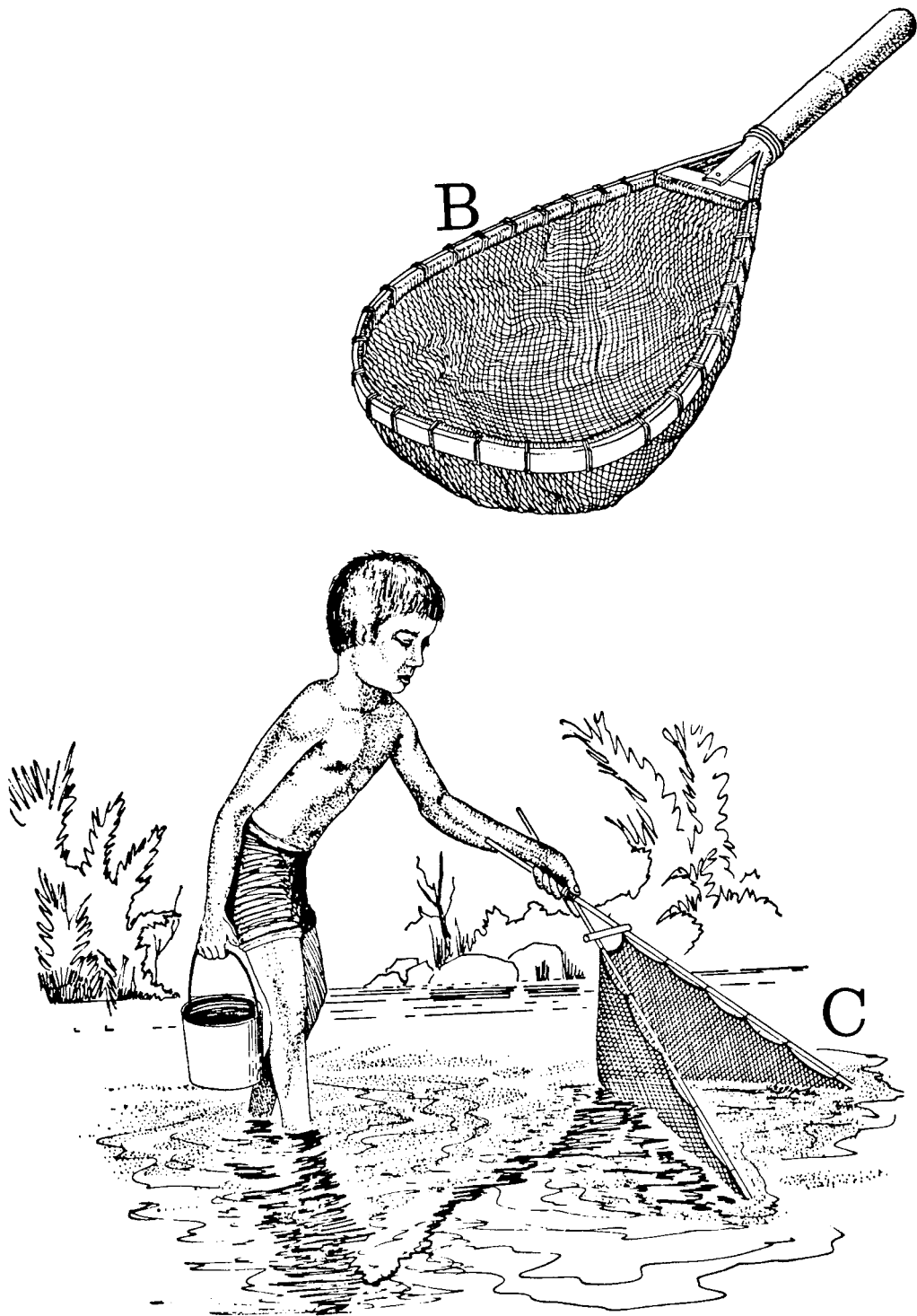


Fig. 4. Two kinds of scoop net. A, Triangular type



B, Oval type; C, Operational view.

2. Fry scare line (Fig. 5)
Local name: *Surambaw*

The fry scare line is a simple device consisting of one piece of a long scare line which carries streamers of coconut leaves of about 30 cm long. The line is from 30 to 50 m long and is moved by two men wading along a sandy shore.

After covering a certain distance (usually 200 m long) forming an arc, they meet to form a circle with the line. They gradually make the circle smaller for easier harvesting of the fry with a scoop net.

The catching effectivity of the contrivance probably stems from the clinging habit of the prawn and/or from their being afraid of the line, in addition to their swimming activity near the water surface.

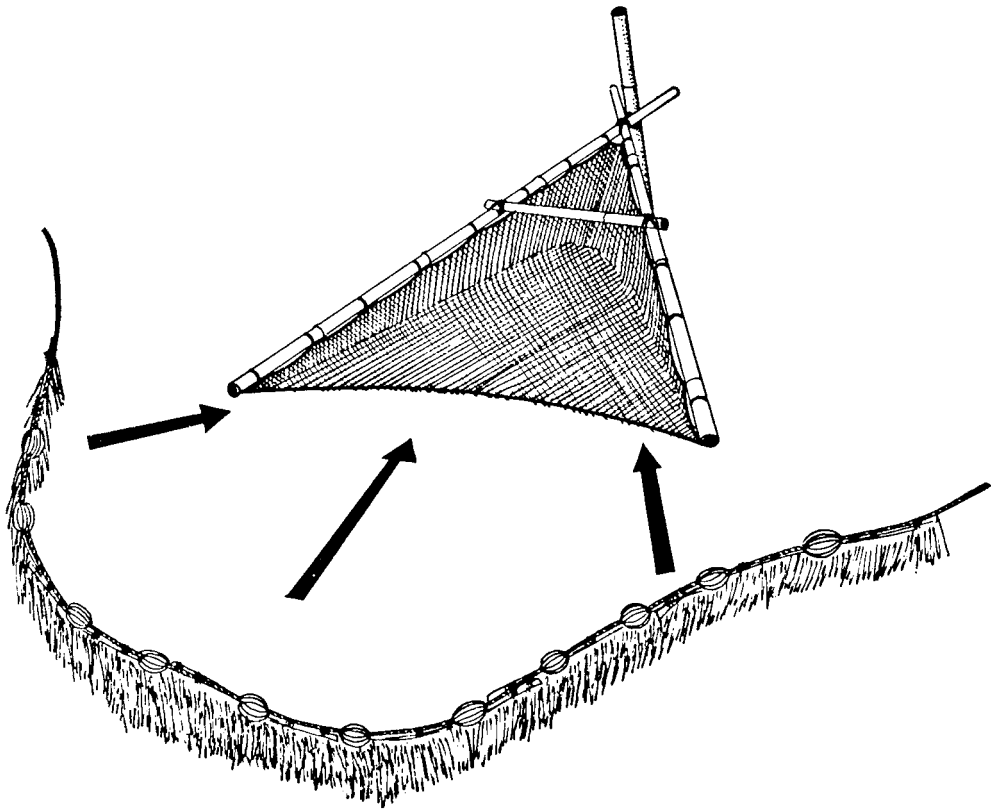


Fig. 5. Fry scare line and the scoop net.

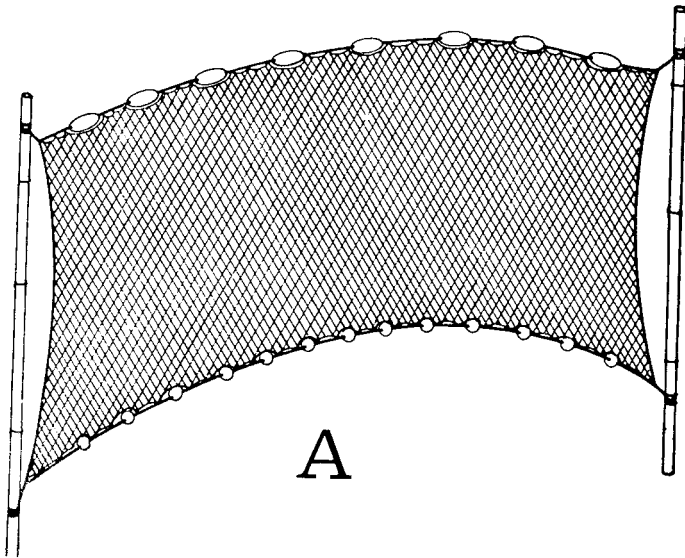
3. Fry seine (Fig. 6)

Local name: *Sabay, sagap, sayod or sicut-sicut*

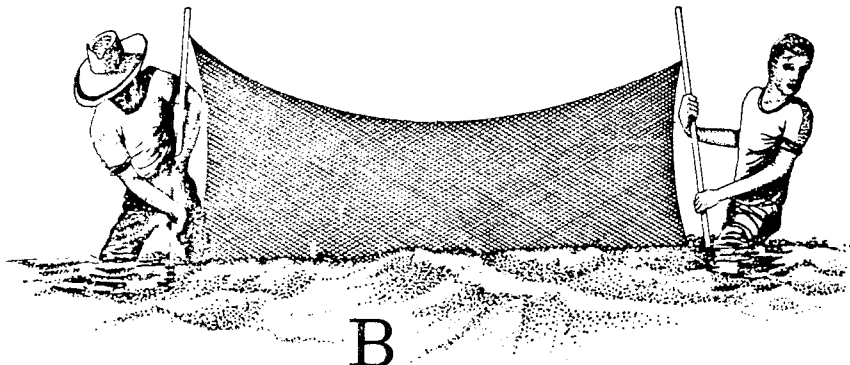
The fry seine is a kind of a small hand net, 3 to 6 m long and 1 m wide. Several variations are found in different places.

The net is made of finely woven cloth locally called "sinamay." The upper and lower edges are attached to a stout abaca rope for holding. In general it does not have weights or floats, so that either cord may serve as the bottom line. However, a modified type is furnished with lead weights on one side and sponge floats on the other.

The fry seine is operated at the shore waters, waist deep, along the sandy beach by two wading men holding the opposite sides and dragging it slowly, sometimes bending their waists to accomplish slow careful movement. The upper border of the net is usually slightly above the water surface when in operation. Suggo fry generally inhabit the sandy shore and move slowly during the daytime, thus this device is suitable for capturing them.



A



B

Fig. 6. Fry seine. A, Frontal view; B, Operational view.

4. Triangular net (Fig. 7)

Local name: *Hudhud* or *sakag*

The triangular net consists of 2 pieces of bamboo poles with wooden or bamboo root shoes at each end, and a flattened conical bag made of fine-meshed (about 0.9 mm mesh size) sinamay, salap netting (cloth woven from the fiber of Manila hemp) or synthetic materials. The net is about 5.5 m long from the mouth to the codend with a local variation. The mouth is about 2.4 m wide. A wooden nail or peg serves as a pivot point for the poles at the crossing and allows them to be worked in a scissors-like manner, hence its other popular name, "scissors net."

The proximal portions from the pivot serve as handles for the operator. A modified type is equipped with a semi-circular wooden plate to support the operator. The distal end of each pole is equipped with a runner or shoe which is adz-shaped and made of curved wood or of the proximal portion of a big bamboo. It is about 30 cm long.

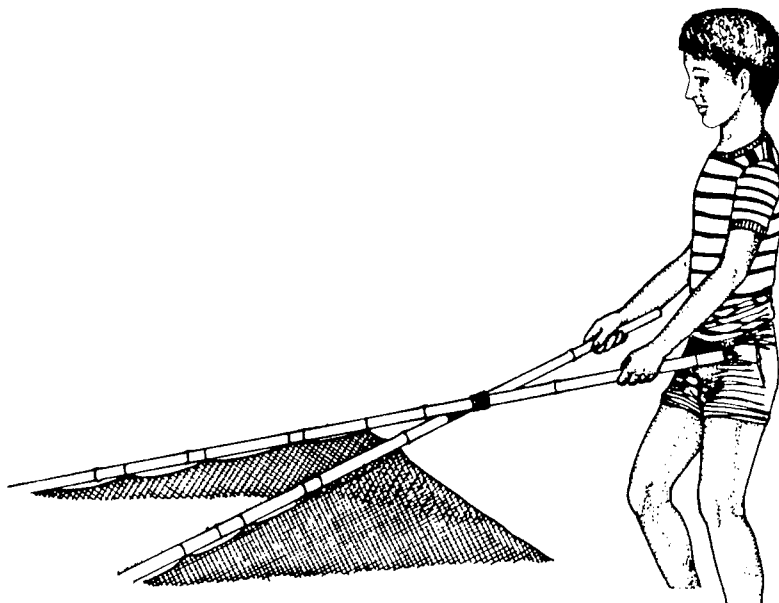


Fig. 7. Triangular net. Operational view.

5. Fry bulldozer (Fig. 8)

Local name: "*Baka-baka*" or *traveller*

The fry bulldozer (sometimes called fry dozer) consists of several pieces of bamboo poles serving as frames and floats, and sinamay or synthetic nettings with 4-5 stone or lead sinkers arranged at the frontal margin of the net to avoid up-welling of net. The fry bulldozer looks triangular or trapezoidal. In most cases the dimension is 210 cm wide in front, 76 cm wide at the rear, and 300 cm long. The bulldozer is a floating type and is pushed by one man wading parallel to the sandy shore during operation. Its construction and size vary from place to place.

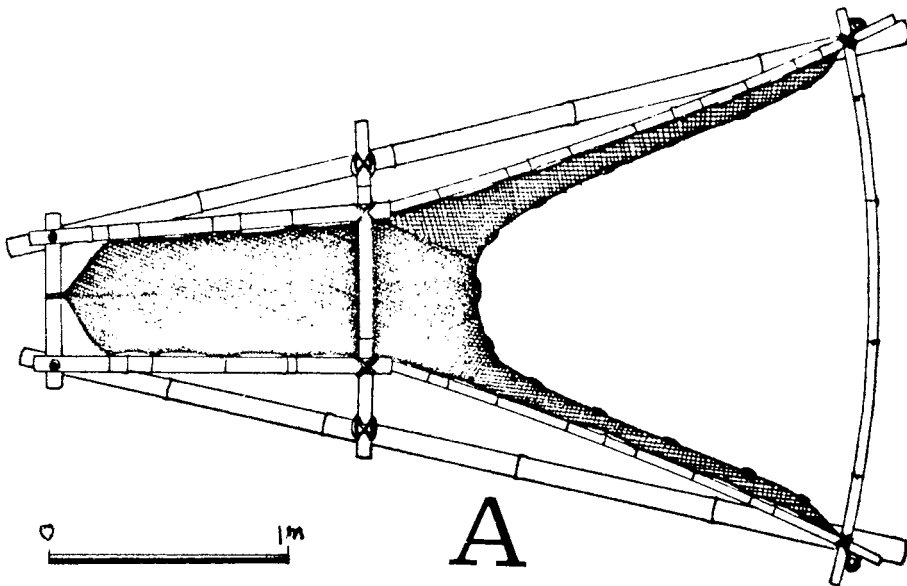
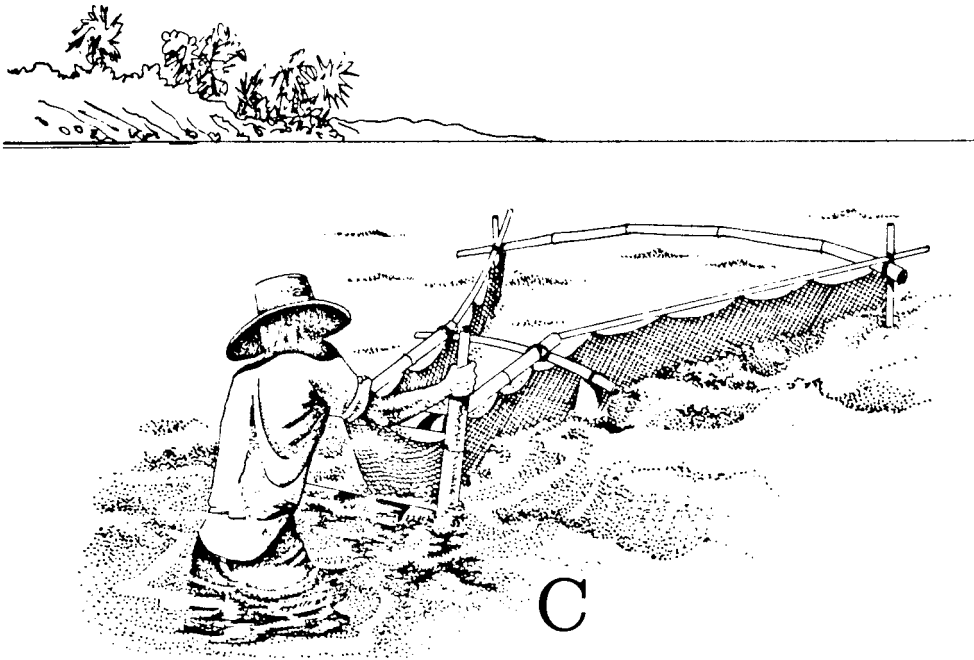
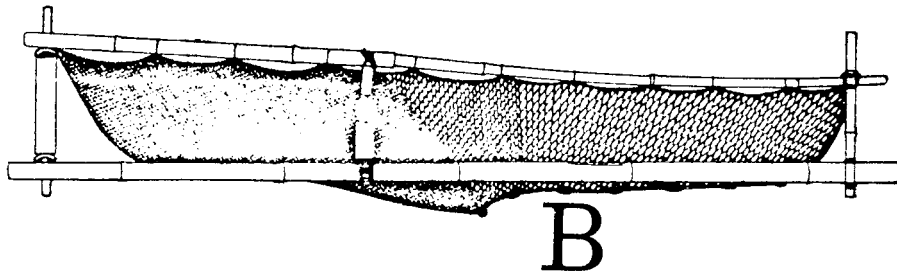


Fig. 8. Fry bulldozer. A, Top view



B, Side view; C, Operational view.

OBSERVATIONS AND RECOMMENDATIONS

During the study it was found that there are several variations of each collecting device or gear in different regions. The 8 devices or gear described and illustrated here are the principal types.

The Philippines consists of 3 main islands, viz. Luzon, Visayas, and Mindanao, and some 7,000 small islands of various land areas. This kind of geographical situation could produce isolation among rural people. In fact, many dialects are presently spoken in the Philippines, and one may note various kinds of culture from place to place. The same can be said of fishing gears as well as the methods of fish capture.

It is interesting to note that the devices and gears described and illustrated in this report, while they are mostly simple contrivances, are well adapted to the behavior of the sugpo fry as well as the locally different conditions of the waters.

It is worthy of further study to describe the variations of the devices and gears for catching not only fry but also adults. This kind of information should lead to the improvement of these devices or gears.

SUMMARY

Eight typical devices and gears for catching the wild fry of the giant tiger prawn, *Penaeus monodon*, locally called sugpo are described and illustrated.

There are three stationary ones viz. fry lure, fry filter net and set fry trap, and five mobile ones viz. scoop net, fry scare line, fry seine, triangular net, and fry bulldozer. These have been used traditionally in the Philippines. This design and manner of operation are adapted to the behaviors and habits of the sugpo fry such as clinging and incursion with the incoming tidal current in mangrove creeks or at the mouth of the brackish river.

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