These are fish commonly caught in most parts of the Pacific. They include species of bream, snapper, cod, crevalley, and barracuda. Right: The author, with an excellent catch of table fish taken by speargun.

Amateur Fishing
In The Pacific Islands

To the Pacific islander, fishing traditionally plays a dual role; it is at once a pastime and a useful way of getting food. In this article, modern tackle and ways of fishing suited to the islands are reviewed by a leading Fiji angler.

By ROB WRIGHT*

PROFESSOR J. L. B. Smith in his comprehensive book *Sea Fishes of South Africa* writes: "Human nature is always attracted to the unknown, and there is little joy to the true angler in fishing where he knows he can catch something of known size, for it ceases to be a sport and does not thrill. There is nothing like that about fishing in our seas. The angler never really knows whether he will sit with untouched bait, just feed small bait-snatchers, catch 'pan-fish', or the big one of his dreams, or whether blistered hands and broken tackle will end the thrill of a rush from some unknown monster. The angler is in many ways a fortunate man, for, though it is not generally realised, angling is virtually the only method whereby men in numbers may legitimately satisfy the primitive urge to secure meat by direct action."

This theory should be as good as any. It certainly applies to the Pacific. To catch fish of a reasonable size does give a grand thrill, but there is probably a more practical explanation for today's amateur angler. He catches fish for his table, and his activities with tackle are part of a snowballing rebellion against the ever-increasing high market prices for fish and fish products.

In the last ten or twelve years, angling or fishing—call it what you will—has gained more adherents the world over than any other form of sport adopted by mankind. And it is easy to see why this recreation is so popular. It may be followed by almost anyone—almost anywhere. Millions find in fishing the refreshment and escape from the pressure of everyday life; the true fisherman finds a stimulus in pitting himself against his opponent—the fish. The occasional angler finds reward in a good fish meal.

In the islands of the South Pacific, fishing has played a dual role for a long time. In an environment lacking in many of the amenities of larger countries, fishing has been both a pastime and a source of food. Indeed, in many of the islands and atolls closer to the equator, fish are taken as part of daily subsistence.

Basic Equipment For Fishing

Up to a decade or so ago the basic tackle requirements for fishing comprised a cord line, a piece of wire, and hooks. For the more adventuresome and active men—fishing has gained in numbers, and a pair of small gogles.

Today, only a few years after the advent of nylon, comparatively few fishermen use cord line; while the man with the spear either uses a type of underwater catapult or a similar device which is mechanically powered. In addition there are simple, inexpensive

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By far the most popular method of fishing is, and has been, hand-lining. The first consideration is the line. Nylon has proved to be outstanding in this field; it has great power and elasticity, and is available in all sizes and breaking strains—from two pounds to eight or nine hundred pounds, and it can be bought in any desired length, and in almost any colour.

Selecting Lines And Hooks

When selecting a line the main considerations are the location for fishing and the probable size of fish to be caught. It is obvious that if the intention is to fish shallow water from the shore or beach, or from a jetty, there is no use in buying a heavy line. On the other hand there is little point in procuring light line to fish reef passages, or deep rough water.

In Fiji, the average line used for lagoon, bay, or reef passage, would range between 60-100 pounds breaking strain, with a length of not less than 200 yards. This line would be suitable for catching Spanish mackerel, rock-cod and grouper, jack crevally, red emperor, tuna, bonito, wrasse, and barracuda, and many other species which may attain the sizes and weights up to the breaking strain of the line.

The fisherman therefore must buy line to fit the occasion and the place.

Hooks are the second most important part of an angler's equipment. To the newcomer, hook sizes are at first confusing. If we commence in the middle of the scale with size 1—which may perhaps be recommended for sea bream—then the smaller sizes will go 2, 3, 4, etc., while the larger sizes will have a stroke and an “O” after the size. For example, if the size smaller than one is 2, then the larger size would be 1/0, 2/0, etc.

In addition, there are various types of hooks, such as the Kirby, French Snack, Suicide, King, etc. An average
hook for a 60-70 lb. line would be a 6/0 in either a Kirby or Suicide. Some fishermen prefer a special long shank, which is about an inch longer.

**Knots For Nylon Lines**
Knots in nylon line differ considerably from knots in other types of lines. An inefficient knot in nylon may pull out or may weaken the line to a point where it breaks before the full strain is taken. It is therefore recommended that fishermen should study diagrams and put in some practice in tying knots before actually fishing.

For fishing in the tropics where barracuda, wrasse, and other sharp-toothed fish are encountered, a wire trace is highly desirable. This may vary in length from six inches to three feet.

With regard to location, in Fiji, fishing in the vicinity of reef passages is by far the most popular. Also, as fish feed mostly at night, nocturnal angling has been found to yield far better results than during daylight hours. An hour before slack water, and two or three hours with the rising tide, is perhaps the best time.

Most favoured depth is anywhere between thirty to sixty fathoms, so naturally a lead sinker is required. It is a matter of personal taste whether the fisherman attaches his hook(s) below or above the sinker, though the latter method is preferable when fishing over a coral bottom, as the hook is less apt to be snagged.

**Bait To Use**
Bait can be anything from sardines to mullet, mackerel or small barracouda. A Coleman or similar high-powered light is invariably used in the launch or boat, and is positioned so that its rays shine all around. The theory is that this attracts bait fish, which in turn bring predators.

Many of the seasoned fishermen in local waters take small scoop nets with them. When bait fish are attracted to the light, these are scooped up, placed alive on a small hook with light line, and lowered for mackerel. The mackerel in turn are placed alive, either on triple-gang hooks or a brace of singles with a heavy line, and this invariably is a certain lure for surface-feeding fish such as Spanish mackerel, jack crevally, barracouda, and tuna.

Many of the local fishermen also have the habit of using three lines at the one time; a light line for mackerel, a heavy line for bottom fishing for fish such as red emperor, grouper, salmon cod, wrasse, etc., and a third heavy line for surface-feeding fish.

Hand-lining does produce good results, and it is the cheapest form of fishing.

**Gear For Trolling**
With many miles of reefs, bays, and lagoons in the islands, trolling is another form of fishing which finds favour, particularly with anglers who are not patient enough for still fishing. Here again, hand-lines may be resorted to, or else a trolling rod and reel are used.

For the latter, a medium-action rod in either cane or fibreglass and about six to seven feet in length is ideal. A modern multiplying reel with star drag and a capacity of 400-500 yards of 30-pound line should be used in conjunction with this rod. To complete this outfit, a rod butt-rest of leather or fabric is essential. This is used to rest the butt of the rod while the fish is being played. For heavier fishing, special gear should be used.

Terminal gear—that is, trace, swivel, and lure—is an important part in trolling. A good brand of stainless steel trace wire is very necessary. The length may vary with individual requirements, but about five feet is the average. To one end of this is attached a swivel, and the other end is made fast to the lure. As the first six feet of line takes the brunt of the fight, and may come into contact with the fish itself, it is recommended that this be doubled for this length. As with still-fishing, knots play an important part.
If nylon is being used, care should be exercised.

If such small fish as mullet, small barracuda, or school mackerel are available, they are admirable trolling baits. Slice down from the top of the fish and remove the backbone from behind the gills to the tail. Insert the hook(s)—they may be used in tandem—then close and sew up the cut. If the bait fish is large, a strip taken from the belly or from a fillet is useful. Make sure the bait does not spin when placed in the water, and troll at a slow speed of between three-five knots.

There are innumerable artificial lures, spinners, spoons, and jigs to choose from. The three most popular in Fiji waters are the Gibbs, Glendon-Stewart, and the feather jig. In bright weather the feather is best, while on dull days a spinner or spoon produces results.

An inexpensive and very efficient lure used in Fiji is made from the stem of the Crinium asiaticum, a variety which grows profusely throughout the group. It has long yellow-green leaves, and the botanical name is Crinium asiaticum. The stem consists of a series of delicate cream-coloured membranes, and this is the part used for the making of the lure.

The stem is severed above the root and cut off just below the leaves. After running a knife very lightly down the stem, the first layer can be peeled off very easily. This is then cut to shape and bound to a lead head similar to that of a feather jig. It should have the general appearance of a squid. It is an unfailing fish-getter, but a new one has to be made after each strike.

Open water close to the reef, in passages, and in the deep water around the perimeter of lagoons and bays is ideal trolling country. When running close to the reef keep a tight drag on the reel, or a firm grip on the handleline. It is in such places that rock-cod and similar fish are encountered and, if given their head, if only for a few seconds, they will dive for the coral, with the subsequent loss of a lure.

If trolling artificials, a higher speed than for fresh bait is required—perhaps six or seven knots. This is certainly the case when skipjack, bonito, or yellow-fin tuna are encountered, for they seem to strike better at a fast-trolled lure. With these fish, a feather or a viaviva is a must, as they rarely strike at spoons or spinners.

A variation of surface trolling is the use of a paravane. A short length of line with either artificial or fresh bait is attached to the paravane, which is then lowered to the required depth. The paravane keeps the lure down deep. This method has been found to produce better results than with surface fishing.

**Selecting A Spin-Fishing Outfit**

For the potential angler who, because of the nature of his work, or for other reasons, cannot take the time to troll or still-fish, there is a medium by which he can enjoy the sport and at the same time bring home "pan-fish" for the table. This method is known as spin-fishing or, as some people call it, "thread-line" fishing. It involves an outlay on a spinning reel and rod, but if care is taken this outfit will give many years of good service and untold pleasure and will provide many fish for the table.

The reel has a fixed spool, and its axis is parallel to the rod. The simplicity of operation obviates the necessity of "know-how", and such things as backlash, over-running, "bird's-nests" and other hazards which are to be contended with in a conventional reel, are nonexistent with a spinning outfit.

The reel itself is attached beneath the rod handle and is generally operated by the left hand, leaving the right free to hold the rod and do the casting. Attached to the rim of the reel is a pick-up finger or bail.

When a cast is to be made, the bail is snapped back and the line taken on the forefinger to take the weight of the lure. The rod is moved backwards in a vertical arc and then snapped forward, the movement being arrested just beyond the vertical position. The effect of this whip-
A fine bag of yellowfin tuna caught while trolling in the Yasawas.

items of equipment necessary for the underwater fisherman.

Reef patches and crevices in the reef are ideal places for this sport. It is a wise precaution not to venture too far from the reef, which may be used as a haven in the event of a nosy shark or other large denizen appearing. When a fish is speared it should be taken immediately on to the reef or placed in a boat. This is a measure of self-preservation which should be followed at all times.

When stalking fish, do not make hurried motions; this frightens them. Do not get into a tide rip or surf combers. Above all, never attempt to spearfish in water that is murky and where visibility is limited.

Done properly, spearfishing is an exciting and productive way of taking fish.

Rhinozeros Beetle Control

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natural controlling agents in India, Ceylon, Burma, East Africa and Madagascar. In 1955, the programme was expanded to include a survey of infectious diseases attacking the beetle.

The initial survey carried out in South-East Asia for insect enemies of the rhinozeros beetle did not prove rewarding, and in 1957 it was decided to concentrate efforts along these lines in the island of Madagascar, where there are known to be some fifteen or more species of rhinozeros beetles.

A five-months' survey by the Commission's Technical Officer (Pests and Diseases) carried out in Madagascar during 1957 indicated that in the forest regions of the island, the native home of some of the various species of rhinozeros beetles, there were many natural controlling factors. However, due to the inter-play of the many species of predators as well as rhinozeros beetles the important ones were difficult to ascertain. It was therefore proposed that at least a year's study be made of the general ecology of the beetles in order to determine the major controlling factors of their populations.

During the survey a promising predator (Scarites madagascariensis) of Oryctes grub was found, and it was decided that this predator might be of use in helping to control the pest in certain environments in the South Pacific. Collections were made and three consignments of this insect were sent to Fiji and Wallis Island for liberation in the field.

In January 1958, the Institut de Recherche Scientifique de Madagascar undertook an intensive study of the ecology and controlling factors of the rhinozeros beetles in Madagascar under a South Pacific Commission grant.

In the meantime, the survey of the diseases attacking rhinozeros beetles which had been carried out since 1955 by Dr. Paul Surany under a grant to the South Pacific Commission from the Rockefeller Foundation (USA), indicated that there were some types of diseases which played an important, and, perhaps, a primary role in checking the populations of this pest in South-East Asia and Africa. Unfortunately, many of these occurred in combination with each other, a fact which makes their determination extremely difficult and their importance in the final death of the beetles very hard to follow.

In 1958 it was decided that this initial survey had shown such promise of possible means of control of rhinozeros beetles that additional work on the most promising of the diseases discovered was definitely warranted. Following application from the South Pacific Commission to the Rockefeller Foundation for additional funds to carry out this research, the Foundation generously granted the necessary funds to enable an extensive study to be carried out on the identity and mechanism of transmission of these pathogenic organisms.

The following is a list of the various biological control agents which have been discovered and tried in various countries for the control of rhinozeros beetles.

CONTROL OF—

ORYCTES RHINOCEROS

AGENT

Scolia oryctophaga (parasitic wasp).

Metarrhizium anisopliae (parasitic fungus).

Carabus sp. (predatory beetle).

Catacaspis fascialis (predatory beetle).

Elis romandi (parasitic wasp).

Scolia ruficornis (parasitic wasp).

Pachlytaerus eburnus (predatory beetle).

Leironota (predatory beetle).

Pachlytaerus chinesis (predatory beetle).

Leironota colombiana (predatory beetle).

Leironota quadridentata (predatory beetle).

Scarites madagascariensis (predatory beetle).

Pyrophorus pellucens (predatory beetle).

Mecodema spinifer (predatory beetle).

Agrypnus fuscipes (predatory beetle).

Alaus speciosus (predatory beetle).

Plaesius javanicus (predatory beetle).

Scolia parietalis pliebeja (parasitic wasp).

Nematode: Rhabditis (Rhabditis) near Mutaem—Ceylon.


ORYCTES TARANDUS

Scolia oryctophaga (parasitic wasp).

REFERENCES


