THE VALUABLE SHARK

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FROM time to time there is a scare at the English seaside resorts owing to the presence of sharks amongst bathers. Often the scare is ill founded, the supposed sharks being porpoises at their gambols. But that sharks do invade the cooler waters round Great Britain there can be no question, since from time to time they are captured in nets set for quite other fish. As a rule, the sharks caught round the British coast are small, and would not prove a very great danger to bathers. The bold man-eating shark is an entirely different fellow, and he haunts, for the most part, tropic seas.

Sharks have been well called the "scavengers of the sea," and there are parts of the world where they are considered an acquisition rather than the reverse. On the whole, however, this sea monster has been considered a creature for destruction at all costs, and only recently has it been possible to combine destruction with profit. The shark has, in fact, become valuable. Weight for weight, certain kinds are as valuable as whales, and whales are valuable indeed, especially now that they are on the way to rapid extermination. It has been a pastime for hundreds of years to fish the shark from the deck of a ship, using a line baited with pork. Nearly always it may be discerned following a vessel; sometimes there would be several, and these would offer an exciting sport to the passengers and crew. But in this there was no thought of gain, rather the lure of fishing for so large a "bite", and the ridding of the sea of one of its most terrible inhabitants.

Sharks are divided into several families or classes; thus there are tiger, whaler, white and grey nurse sharks—all of them the enemy of man, counting him the choicest meal that comes their way. There is a legend that one having tasted human flesh becomes a hanger-on of ships, what time he is not waiting near the shore to snap up an unwary bather. Again, the old salt will tell the tale—amongst many—of how a shark will follow a ship for hundreds of miles in which a corpse is carried, having an unerring instinct in this respect. As they follow any ship, we can dismiss this ancient legend of the sea. The real reason they follow a ship is to pick up the garbage which is periodically shot over the side. In the case of a big liner a good deal of food is wasted by passengers, and this

must necessarily go over the side to the waiting monsters. Will the shark become as rare as the whale? That is a question which is being asked, now that he is being turned to commercial uses.

On the Australian coast a flourishing shark-catching industry is already established, and its success will be emulated by other concerns in various parts of the world, first where the shark is known to make his headquarters, followed in due course by expeditions to find him in less frequented seas. The fishers have already brought their campaign against this sea scavenger to a highly organized business. It begins with the provision of very strong and rather curiously fashioned nets. These are carried out to a suitable fishing ground where the sharks have been seen recently, and there dropped overboard. By means of lead sinkers and buoys these nets are left suspended in deep or shallow water, according to the site of the fishing ground. On the whole, it is better to set them in the shallower waters. In any case, they will be used as near the coast as possible. From acute observation the shark fishermen have learned that their prey likes to cruise inshore, following more or less regular tracks, ever on the look out for a victim, human or animal; failing these, anything eatable will be snatched up. Constant change in the location of the nets is necessary, though it is usual to set them for several nights in one place if the yield is good.

The nets are so arranged that they are fairly loose, in order that the shark swimming leisurely may push his snout into one of the meshes. Suddenly he finds that he cannot proceed, but obstinately he determines that he must; he does not want to turn back. Sometimes he tries to bite his way through the obstruction, which —by the way—is made from very strong thread-cotton. The chances are that he gets his teeth fastened in a mesh. This exasperates him exceedingly, and he begins to struggle in earnest. Suddenly he finds his fins entangled, and though he struggles unremittingly, his case is desperate indeed. Seldom can he win free; often he merely exhausts himself in an ineffectual struggle. There he lies, but he will put up a great fight before the end comes for him.

Relatively small boats with Diesel engines are used for visiting the nets, and this is done each morning quite early, before dawn, in fact. Off the Australian coast daylight comes with a wind as a rule, and the wind makes a choppy sea. The calmer the water, the better for the shark hunter. Naturally enough there is considerable difficulty in landing these huge monsters, especially when the smallness of the boat is considered, and the entanglement of the shark within the net makes the job a ticklish one.

The boat puts out to sea, and the lookout spots the first series of buoys which mark the beginning of the net. A termination of the net will be marked by two others, perhaps a thousand feet away. The end buoy is reached, and the boat now works slowly along the net, each section of which is hauled up and examined before being allowed to fall back into position. Suddenly there is a stir as one section comes up. There is a mass of grey or white seen, and now by the side of the boat is a terrible fellow who seems to appreciate what is in store for him. Though a prisoner, he is game to the last. A stout hook is forced into his jaws, and a derrick brings him near enough to the fisherman who deals him a hefty blow with a club on the back of the head. Even then he does not always succumb, and to make sure that he will not give trouble when dragged aboard he is often shot with a revolver. In some cases the revolver only is used; in others the shark is dead when raised, since it is possible for him to strangle himself in his struggles in the enveloping net. More often than not there will be no fight, exhaustion point having been reached, but the possibility of a fish "shamming death" must be considered.

The results of a single week's fishing by a couple of boats equalled 15 tons of sharks in bulk, and the greatest number ever captured in a single net was a shoal of 32, many of them quite small. The biggest shark captured by these crews weighed 1,000 lbs., and had a length of 13 feet. He was of the tiger class. Whaler and white sharks were also captured, approximately of the same length as the tiger, but they were considerably lighter, the heaviest being the whaler. The grey nurse sharks are decidedly smaller, the biggest recorded at this section of the fishing grounds being 8 feet long and weighing 370 lbs.

There are the Port Jackson and carpet sharks; these are often in the nets, but they are small and of no real value. Still another is the wobbegong attaining a length of 5 feet; with the carpet shark the wobbegong is useful only for its skin, but the larger variety have a much higher commercial value, since there is practically no waste. As in the whaling industry, the parts of the carcase which would have been thrown back to the sea are now utilised. But unlike the whale-flesh, that of the shark is in great demand for food, whilst the residue of the whale is converted into a good fertiliser. Shark flesh is dried and exported to Africa and Malaya, where there is an increasing demand for what is considered a rare dainty. The flesh of most of the species of shark is very good indeed, only the tiger shark producing a coarse, gristly meat. Its flesh is sliced off in strips about a foot long, and after being left in brine to cure,

the portions are dried to extract every particle of moisture and then packed for export. The fins are the greatest edible delicacy imaginable—to some people—and these are largely in the East. It takes a large number of sharks, however, to produce a pound of dried fin. Thus, if we took a ton of sharks, we should get only about 20 lbs. of dried fin. The original bulk would be much larger, but the drying out has to be done so thoroughly that the reduction indicated is inevitable. Some of the fin is used for making glue, but most of it will form the basis of gelatine or a rich soup.

The cutting up of the sharks is an interesting process to watch. They are taken by the boats to the landing stage, hoisted ashore, and at once the cutting up goes forward. The skin is taken off after the removal of the fins. Skinning is done in a very ingenious way. A start is nade near the head, and on either side the loose flesh is fixed into a clamp. The carcase is now lowered to another platform, then it is pulled upwards again by means of winches. As it rises steadily, the skinning process becomes practically automatic. The skin is now trimmed, any adhering portions of flesh being cut away. Afterwards the skin is soaked for some time in brine, and then goes on to the tanner, where it becomes the leather with which ladies are now so familiar, and for which there is an increasing demand.

A ton of shark will give approximately 90 square feet of leather. The skin of a shark is covered by minute but rather rough denticles, and these must be removed unless the leather is to be used for such ornamental things as caskets, etc. Even the denticles have their use, for they serve the cabinet-maker in smoothing his timber. There still remains the liver, which is possibly the most valuable of all the products obtained from the shark; indeed, in various quarters of the globe the fish has been hunted solely for the oil obtained from the liver. But this is a wasteful proceeding, and the tendency now is to make full use of every part of the body.

The liver of the shark is exceptionally large; thus a 12 foot fish of the tiger class will possess a liver weighing 200 lbs.; and this, after boiling in the special steam-jacketed kettle, will produce no less than 18 gallons of rich oil. Great care is necessary in extracting the oil, especially when the catch comprises several different types of shark. Experience shows that not only does the tiger shark yield the largest amount of oil from its liver, but it is of better quality than that obtained from the other varieties. The liver will yield most oil if allowed to remain for a time after the fish has been killed; on the other hand, the quality of the oil deteriorates rapidly when the process is delayed, and it becomes unfit

for medicinal uses. It has been suggested that shark's oil may oust cod liver from its well established position for the combatting of chest troubles and feeding children. This is rather doubtful, but without question shark liver oil is rich indeed in the vitamins known as A and D. At present the oil has commercial rather than medicinal uses. For soap making, leather currying and the tempering of steel it is very serviceable, and every barrel that can be sent to Britain can be used.

Shark catching from a fixed base is unlikely to be successful if tried on a large scale. But there is no reason why the plan followed so successfully in modern whaling should not be adopted. Here there are specially built steamers of small tonnage which work from what is called a factory ship. The latter is often an old liner fitted with boilers and lifting gear; often too, the stern is cut away to make a slope up which the huge carcases are hauled for cutting up.

Such a plan, if adopted for the capture of sharks, would almost certainly be successful. The question that first needs answering, however, is—"Are there enough sharks to warrant such a large enterprise?" It is a question that experts find difficult to answer, simply because no one has given the time to the necessary study of the habits of this useful, but dangerous fish. It is known already that the shark is nomadic, and that he likes to travel with companions. He has a great cruising range, and it is these factors which make a permanent shore establishment in any given spot hardly worth while.

Something of the habits of the shark is known already by more or less casual observation. Thus it was discovered that the reason they went, by shoals, in a northerly direction from Australia at certain seasons lay altogether in the fact that mullet and salmon went north too. The sharks followed their prey, and woe to the succulent fish when they caught them up, for the scavenger of the sea has also a tenderness for fine flavoured salmon.

It might be considered a paying enterprise to send out properly organized expeditions to hunt them down at the expense of the countries whose seaboards are visited by sharks. We know that the depredations of sharks and other large fish are to be reckoned with, since they destroy millions of edible fish in the course of a year. Fishing grounds are ruined in the northern seas by dog fish; in the southern areas the damage done is probably larger, so that on this score alone the thinning out of the sharks is warranted; if that thinning can be accomplished profitably, so much the better. One authority has gone so far as to suggest that the shark should

be bred for the value he yields, mentioning that the mouth of a lagoon could be closed and the enclosed space serve for a breeding place. The same authority omits to mention how these voracious creatures are to be fed! A cynic reading this suggested that a good way of disposing of the sewage and offal of the large Australian cities would be to keep sharks at the outfall positions, taking care, of course, that they were not allowed to stray too far!