

THE STOCKFISH AND SPINY LOBSTER FISHERIES OF SOUTH AFRICA

By Albert C. Jensen*

ABSTRACT

The stockfish (*Merluccius capensis*) is the most important species in the Republic of South Africa's trawl fishery. Recent annual stockfish landings were on the order of 169 million pounds. The fish are caught by large otter trawlers with the bulk of the landings going to the fresh fish market. When the stockfish are dressed at sea, the entrails are saved for the oil and meal plants ashore and the heads are saved for bait in the spiny lobster fishery. During the unloading operations, great care is exercised to insure the highest quality product possible.

The fishery for the South African spiny or rock lobster (*Jasus lalandii*) is carried out with two-man dinghies tended by wooden-hulled vessels 50 to 60 feet long. The lobsters are caught in a conical, twine pot baited with stockfish heads, fish frames, or whole fish. Only the meaty tails of the spiny lobster are used. Over 90 percent of South Africa's production of 7 million pounds of spiny lobster tails is exported to the United States.

INTRODUCTION

During October-December 1961, I was an observer for the U. S. Bureau of Commercial Fisheries aboard a U. S. Navy ship operating off the West Coast of Africa. As part of the cruise the ship visited several coastal cities including Capetown, Republic of South Africa. Thus, I was able to observe the shoreside operations of two of South Africa's most important marine fisheries.

STOCKFISH FISHERY

The otter-trawl fleet of the Republic of South Africa includes about 62 vessels, slightly more than half of which are based at Capetown. Although some 14 species of bony fishes are



Fig. 1 - A large otter trawler at the dock in Capetown, Republic of South Africa. The vessel is typical of the fleet that fishes for stockfish.

included in the catches of the trawlers, the principal effort is directed toward the stockfish (*Merluccius capensis*). Recent annual stockfish landings were in excess of 169 million pounds. In second place for the landings by the trawlers was the maasbanker (*Trachurus trachurus*) with nearly 7 million pounds, and in third place was kingklip (*Genypterus capensis*) with slightly less than 3 million pounds.

The stockfish closely resembles whiting or silver hake (*Merluccius bilinearis*), except that most of the fish I saw unloaded were larger than the usual commercial sizes of whiting in the United States. Many stockfish seemed to be between 80 and 85 centimeters (31.5-33.5 inches) long with the heads on. Kingklip resembles a red hake (*Urophycis*

*Fishery Research Biologist, Biological Laboratory, U. S. Bureau of Commercial Fisheries, Woods Hole, Mass.

chuss) both in shape and color, but grows to larger size; some of the kingclip I examined ranged from 30 to 80 centimeters (11.8-31.5 inches) in length. It is eagerly sought for the fresh-fish trade and commands a good price in the market.

FISHING VESSELS: The vessels I saw at Capetown were large, steel-hulled, about 150 feet long and resembled the large otter trawlers that fish out of Boston. They are powered by coal-fired reciprocating steam engines (since coal is relatively cheap in South Africa), although recently some thought has been given toward introducing Diesel-powered trawlers. The vessels have the conventional arrangements of winches, etc., but with gallows frames on the starboard side only. The crew numbers between 20 and 25 men, including 12 deckhands (fishermen), captain, mate, boatswain, one or more fishermen apprentices, cook and engine-room personnel.

FISHING OPERATIONS: The Continental Shelf around South Africa is quite narrow, thus relatively little time is spent steaming to and from the grounds located about 50 miles offshore, in about 300 fathoms. The vessels spend $5\frac{1}{2}$ days at sea, and fish during daylight hours only since the stockfish are off the bottom at night and thus unavailable to otter-trawl gear. About 60 to 70 metric tons of fish constitutes a good trip.

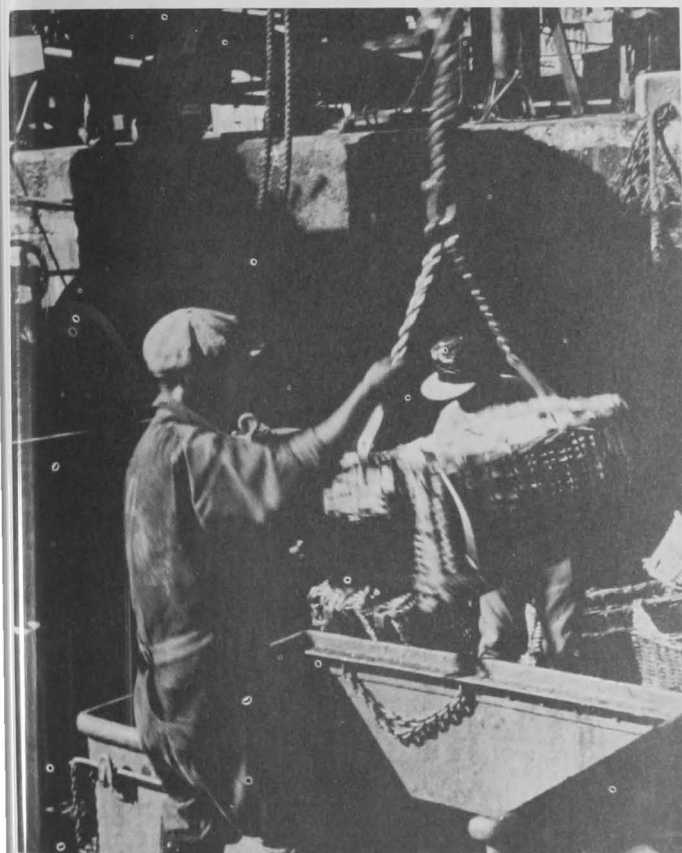


Fig. 2 - Unloading the catch of stockfish and other species. The wicker baskets are filled with fish by the hold-man and hoisted to the deck.



Fig. 3 - The filled baskets of stockfish and other species caught by the trawlers are placed on a mechanical conveyor that raises them to the pier where the fish are sorted and boxed.

The fishing operations are carried out generally about the same as they are aboard United States trawlers. The fish are gutted, beheaded, washed, and put below in the hold in pens with liberal quantities of ice. The stockfish heads also are iced below, while the liver and entrails are saved for the meal and oil plants ashore. Fish ovaries in a ripening condition ("spawn") are saved for the food market, and any octopus or squid are saved for the fish-bait market. (Incidentally, a favorite mug-up treat for the crew is a dish of boiled stockfish tongues.)

UNLOADING AND PROCESSING: The day I visited the fish pier six trawlers were tied up, some ready to unload. In a good day, 200 tons of fish will be taken out, but the biggest

day is on Sunday when about 400 tons are unloaded. The unloading process is quite interesting, particularly to someone who has witnessed the treatment, including pitchforks, that is accorded fish at our New England fish piers.

Aboard the vessel, the hold-man shovels the fish from the pens into wicker baskets about 3 feet long, 1½ feet wide, and 1 foot deep. The shovel used is very much like the perforated ice shovel used aboard our trawlers. Great care is exercised in removing the fish from the pens. Any bruised or damaged fish are rejected by the fresh-fish market, and must go to be

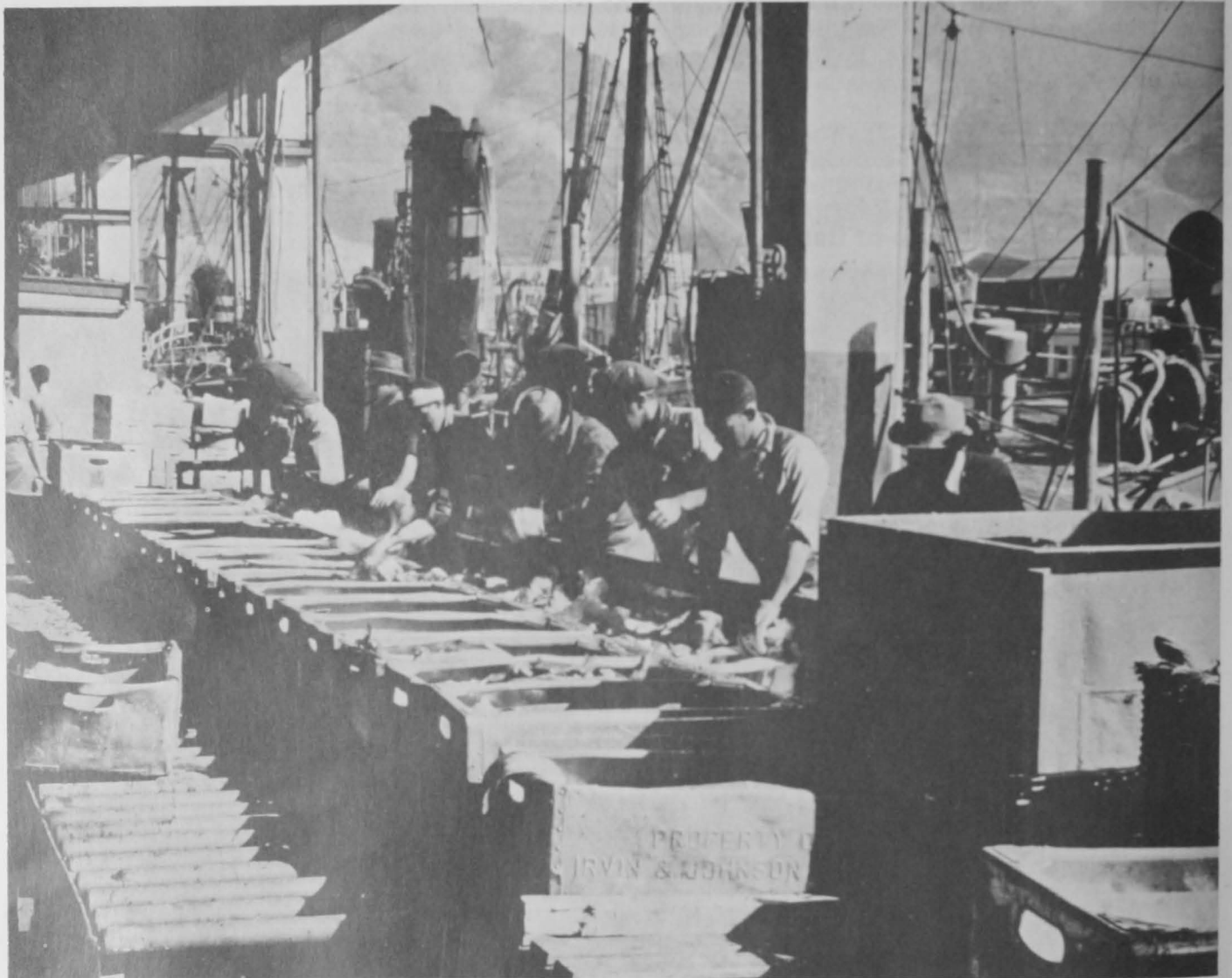


Fig. 4 - Sorting the stockfish and other species caught by the trawlers. The fish move on a conveyor belt and the men separate them by species. Any damaged fish are removed, the rest are packed in aluminum kits and shipped by truck or rail to market.

salted and dried, or smoked. Ice is put in the wicker baskets to insure the continued freshness of the fish during the unloading operations. This is especially important with the stockfish which, like our whiting, tends to soften in a comparatively short time.

The filled wicker baskets are hoisted out of the hold to the deck where they are placed on a conveyer belt that raises them to the fish pier. At the top of the conveyer a worker dumps the basket into a hopper that separates the fish and ice. The ice drops into a separate trough while the fish move onto a horizontal conveyer belt that passes in front of a line of men. The men sort out the species and also reject any damaged fish. The fish are then placed in aluminum fish boxes, each holding about 100 pounds, with plenty of ice. The boxes go immedi-

ately into waiting refrigerated trucks or railroad cars and are transported directly to retail markets in Capetown and other parts of South Africa. In season, spawn is cello-wrapped for the retail markets. Throughout all of the fish handling operations the emphasis is on securing the highest quality product possible.



Fig. 5 - Piles of stockfish heads. The heads are packed in aluminum kits and taken to one of three markets. Some are smoked and sold for human food in other parts of Africa, some are used for bait in the spiny lobster fishery, and the rest go for reduction.



Fig. 6 - Boxes of stockfish heads ready to be loaded aboard a spiny lobster vessel for bait.

are sold to the spiny lobster fishery for bait; the larger heads are smoked and sold as food in other African nations. Ghana, for example, is an important customer for smoked stockfish heads, and they are also popular in the interior sections of Africa. Any heads not used in either of these outlets go to the meal plant. Some of the slightly bruised or damaged stockfish are smoked and sold in the retail markets as "haddock." Stockfish (not suitable for the fresh fish or the haddock trade), maasbanker, and pilchards are salted and dried, and shipped as "minefish" to feed the workers in the South African gold and diamond mines.

SPINY LOBSTER FISHERY

The fishery for "kreef"^{1/} or spiny lobster (*Jasus lalandii*) began on a limited scale in South Africa before the beginning of the 20th Century but was not established on a sound economic basis until after World War II. Today, the annual production of frozen spiny lobster tails is about 7 million pounds.



Fig. 7 - Part of the Capetown fleet engaged in the South African spiny or rock lobster fishery.



Fig. 8 - A spiny lobster vessel with a few crew members relaxing around one of the dinghies used to tend the lobster pots. The pots, with their buoy lines and the strings of cork floats that form the buoys, are draped over the boom.

^{1/}Afrikaans word for crayfish.

VESSELS AND FISHING OPERATIONS: The spiny lobster fleet that fishes out of Capetown is composed of wooden vessels, 50 to 60 feet long, that resemble New England draggers in profile. Each vessel carries 4 to 6 wooden dinghies and a crew of 12 to 16 men. They fish days only, 30 to 40 miles offshore in about 15 fathoms. Some of the vessels stay out overnight, fish the morning of the second day, and return to unload their catch in the afternoon.

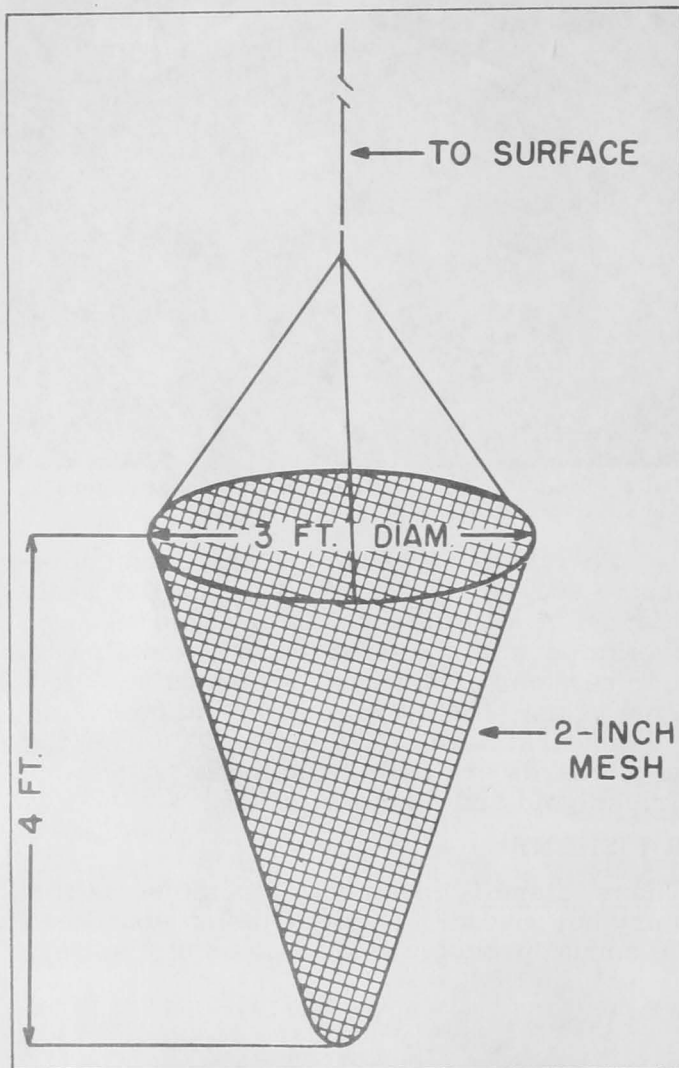


Fig. 9 - Diagram showing the shape and size of the spiny lobster pot used by the Capetown fleet.

The gear used is a conical, twine pot, to which is attached a length of buoy line and a marker buoy. When the boat reaches the fishing ground the dinghies, each manned by two men, are put over the side. Each dinghy fishes eight pots. The pots are baited with stockfish heads, pilchards, maasbankers, or fish frames, and set on the bottom. From time to time they are lifted and inspected, and any lobsters in the pots are removed and placed in a bag hung over the side of the dinghy.

UNLOADING AND PROCESSING: At the end of the fishing period the catch from each dinghy is placed on ice in the hold of the vessel; about 100 pounds of lobsters constitutes a

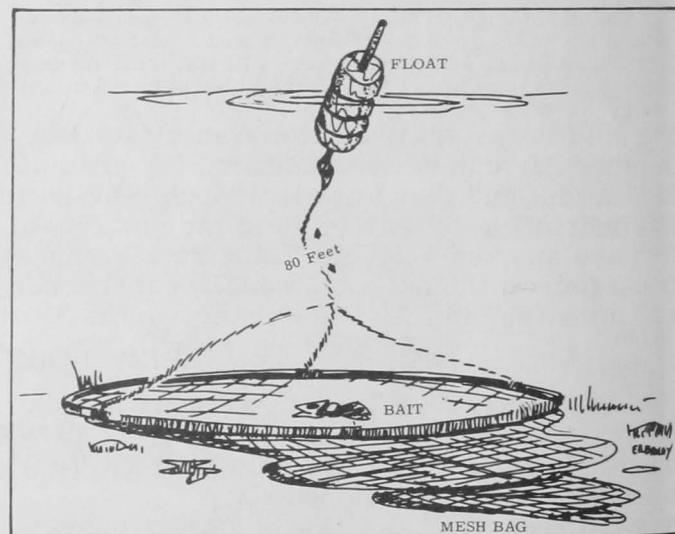


Fig. 10 - Sketch showing the way the pot rests on the bottom when it is fishing. Stockfish heads or other bait are tied to the mesh and the pot is raised periodically to remove any lobsters that may have entered.

fair trip. At the wharf, company-employed lumpers unload the trip of iced, but still living, lobsters. A man in the hold loads the lobsters into wicker baskets that are passed up by hand to the wharf and dumped into hand carts. At this point in the operation, inspectors hired by the fishing industry association check the lobsters for minimum size.

The filled carts are then wheeled into a long, open concrete shed where workers separate the tails from the body. The tails are graded by weight, packed in cartons holding about 20 pounds, and frozen, with the bulk of the production (more than 90 percent) going to the United States. The remainder of the lobster body goes to the meal plant.

