

# ARTICLES

## THE SUN-DRIED-SHRIMP INDUSTRY OF MEXICO'S NORTH CENTRAL GULF

By Travis D. Love\*

Sun-dried salted shrimp are little known to the U.S.A. outside New Orleans and Cameron, La. Much of the production is exported to the Orient. In 1965, production in the Louisiana area was 275,000 pounds; 407,000 pounds were imported from Nicaragua and other Central American countries, presumably for reexport to the Orient. Thus, sun-dried salted shrimp are a sizable segment of shrimp products produced in the Americas.

Chinese immigrants started the industry around 1880. Two large expansions occurred--one in 1908, resulting from better marketing; another in the 1920s, when the otter trawl and gasoline-powered craft were introduced. Processing equipment and methods are simple but effective. BCF statistics show that industry production rose to 4 million pounds in 1935. Production declined in recent years because of increased canning and freezing operations.

The Pascagoula Technology Laboratory of the BCF was asked for information on a production process for sun-dried shrimp that might be useful in the A.I.D. assistance program for underdeveloped countries.

### HISTORICAL

The sun-dried-shrimp industry began in Louisiana just after the Civil War.<sup>1/</sup> In 1880, land patents were given to Chinese immigrants living on several islands in Barataria Bay. The Chinese reportedly lived on these islands prior to 1880 and sun dried shrimp. On January 13, 1885, the U. S. Patent Office issued Patent Number 310-811 to Yee Foo for a process to sun dry shrimp. Actually, the Chinese have used this method for preserving shrimp and other animal foods for centuries.

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<sup>1/</sup>Part of this section was obtained from an article in the "Houma Courier" of Houma, La., August 12, 1966, which credited Emile LaPeyere and Leopold Blum.

Bob Collins Sr., one of the oldest living fishermen on Grand Isle, states that the earliest drying platforms were at Manila Village, Bassa Bassa, and Bayou Brouilleau. Later, Filipinos arrived and assisted the Chinese in catching and drying shrimp. The first man to dry shrimp on a large scale was Ting-Ting. The Fisher family of Lafitte was one of the first native producers. Their platforms in Terrebonne Parish were operated by Chinese managers.

### Industry Spurred After 1906

Until 1906, sun-dried shrimp had either been exported to the Orient or consumed locally. There were no other means of preserving shrimp in those remote areas. In 1906, a grocery dealer, Leopold Blum, bartered for and distributed dried shrimp. He formed a partnership with Shelley Bergereon to trade in dried shrimp, raw furs, and farm produce. Several other local firms were formed. During the next 20 years, there was a tremendous increase in the production of dried shrimp.

In the early 1920s, beach seines for catching shrimp gave way to the otter trawl. Used auto motors provided a cheap source of power for the small shallow-draft craft. In 1922, Fred Chauvin and Shelley Bergereon were awarded a patent for a rotating-drum shell remover for dried shrimp. Another large production increase followed until, in 1935, the peak of 4 million pounds was reached. Since a 210-pound barrel of raw shrimp yields only 26 to 30 pounds of dried shrimp (13-14 percent), this peak production represented about 30 million pounds of raw whole shrimp.

During the early 1930s, the canning plants and fresh iced-shrimp trade began taking

more of the more desirable larger shrimp. So the dried-shrimp industry began to use smaller shrimp and seabobs, both difficult to peel by hand while raw. In 1948, the Peeler's machine was invented--which could easily peel very small shrimp for canning, and the price of small shrimp and seabobs increased tremendously. The introduction of chemicals to control "blackening" in canned seabobs increased the price of seabobs.

Leopold Blum, still active, reports that his firm handled about 250,000 pounds of dried shrimp in 1965, and that the heavy use of small shrimp for canning and breeding has forced up the wholesale price of dried shrimp to \$2.50 per pound. There are 15 to 20 drying platforms operating intermittently. About 300 small butterfly-net skiffs deliver small shrimp and seabobs to these drying platforms when the price is lower. At times, these small skiffs catch larger shrimp and deliver them to other markets at a higher price.

#### BOATS AND GEAR

Shrimp for sun drying were caught by hand-pulled beach seines and casting nets until the early 1930s. At this time, the otter trawls and the gasoline-powered craft (fig. 1) made possible a great increase in the shrimp catch per fisherman. As boats increased in power, they ranged farther into the Gulf for shrimp (fig. 2). Some present-day Florida-type trawlers have diesel motors up to 300 hp. and pull two large trawls (fig. 3).

The "butterfly" net was invented to meet the present-day necessity for smaller and

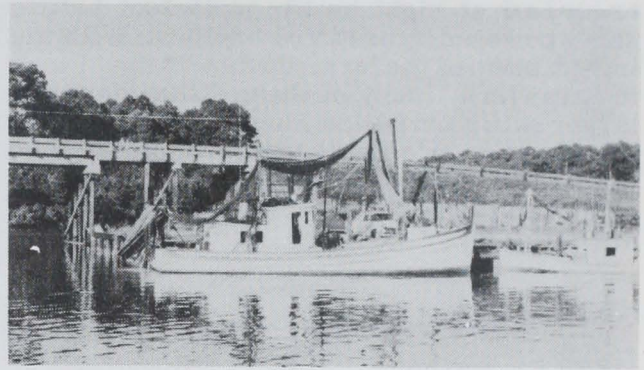


Fig. 2 - Single-rigged Biloxi-type trawler.

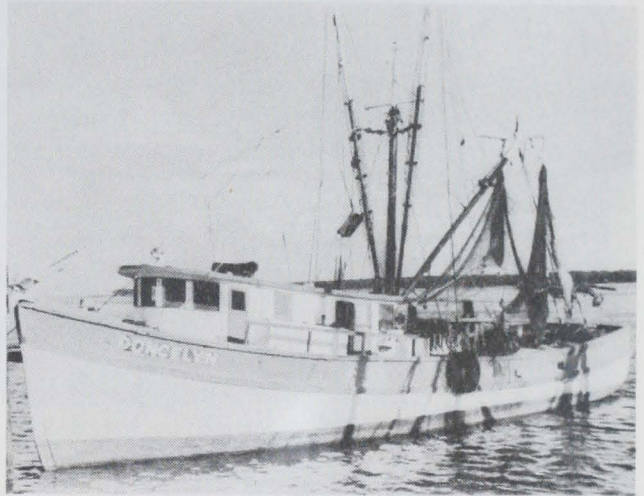


Fig. 3 - Double-rigged Florida-type trawler.

cheaper shrimp in the sun-drying industry. It is square, about 10 by 12 feet, made of iron pipe fitted to a small-mesh bag about 15 feet long. Wing nets extend the width as needed to trawl from shore-to-shore in small bays. These butterfly nets (fig. 4) are

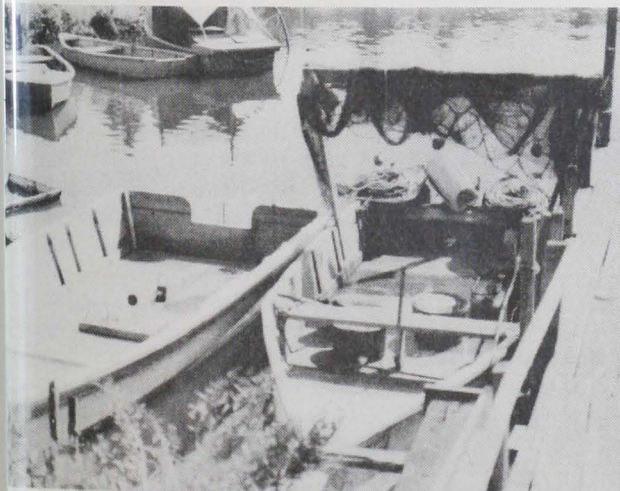


Fig. 1 - Lafitte skiff and otter trawl.

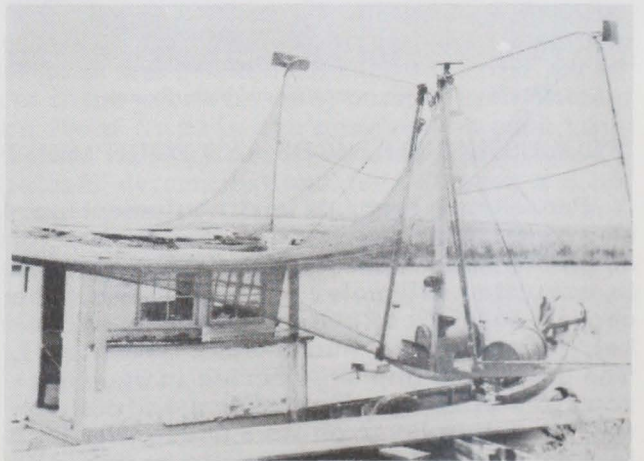


Fig. 4 - Lafitte skiff and butterfly nets.

trawled at night by 18- to 25-foot Lafitte skiffs powered by used V-8 engines. With the introduction of the large double-rigged Florida trawlers, many of these fishermen built larger skiffs and pulled double-rigged butterfly nets (fig. 5). These butterfly nets are so efficient that they are replacing otter trawls on the smaller Biloxi-type trawler in this area (fig. 6).

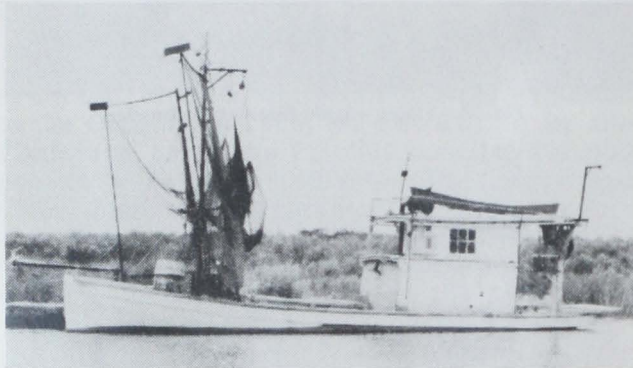


Fig. 5 - Lafitte skiff and double-rigged butterfly nets.

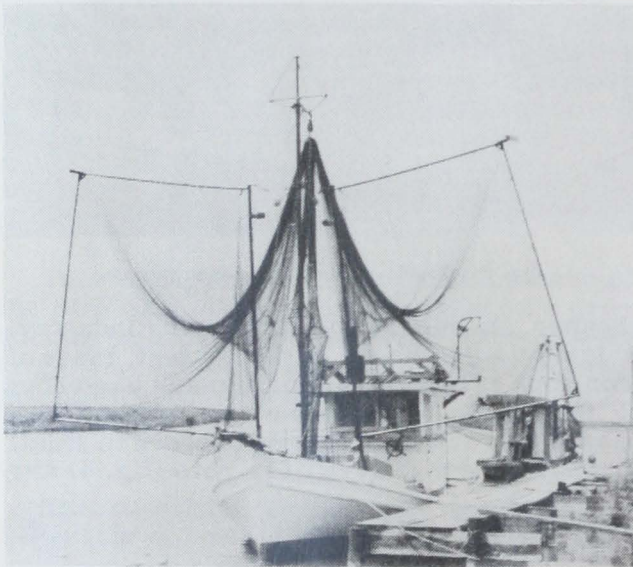


Fig. 6 - Biloxi-type trawler and butterfly nets.

#### PROCESSING METHODS AND EQUIPMENT

Processing methods and equipment have changed very little since the inception of shrimp drying. Whole raw shrimp are cooked in saturated salt water for 30 minutes. The cooker consists of a steel-mesh hinged basket, which lowers into a steel tank (fig. 7). The cooked shrimp are carried in wheelbarrows to a crude wooden platform and distributed in a thin layer on its surface (fig. 8); 2 to 3 days of hot dry weather are required to

sundry the shrimp. Properly dried and handled, they have a shelf life of up to 1 year. It is necessary to sweep the shrimp into piles and cover them with tarpaulins at night as a protection from the heavy coastal dew-fall (fig. 9). The shrimp, while drying, must be protected in the same manner from rainfall.

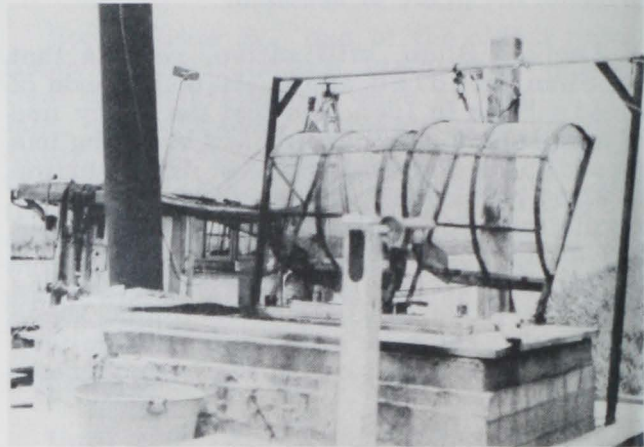


Fig. 7 - Cooking tank and basket.



Fig. 8 - Wooden drying platform.



Fig. 9 - Wooden drying platform with covering tarpaulin.

After the shrimp are properly dried, the shells must be removed. For small amounts, the shrimp may be flailed with a bundle of branches or a large homemade "flyswatter". The loose hulls are removed by sifting or winnowing. These methods consist of either shaking the shrimp on hardware cloth or pouring them from a height during a brisk wind. A mechanical shell remover has been patented. It consists of a 4 by 10 foot cylindrical drum of hardware cloth rotated by a motor. Angle-iron flanges inside the drum

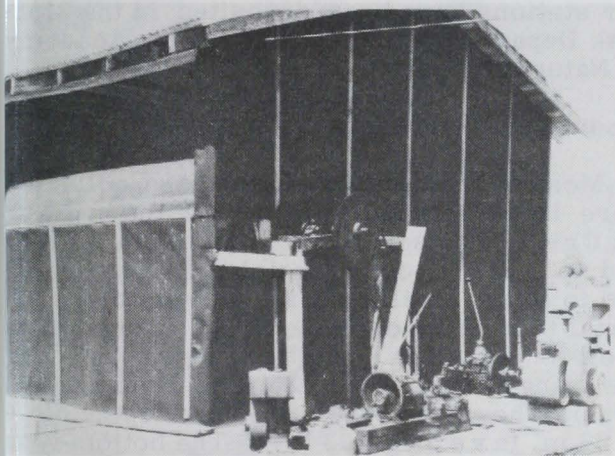
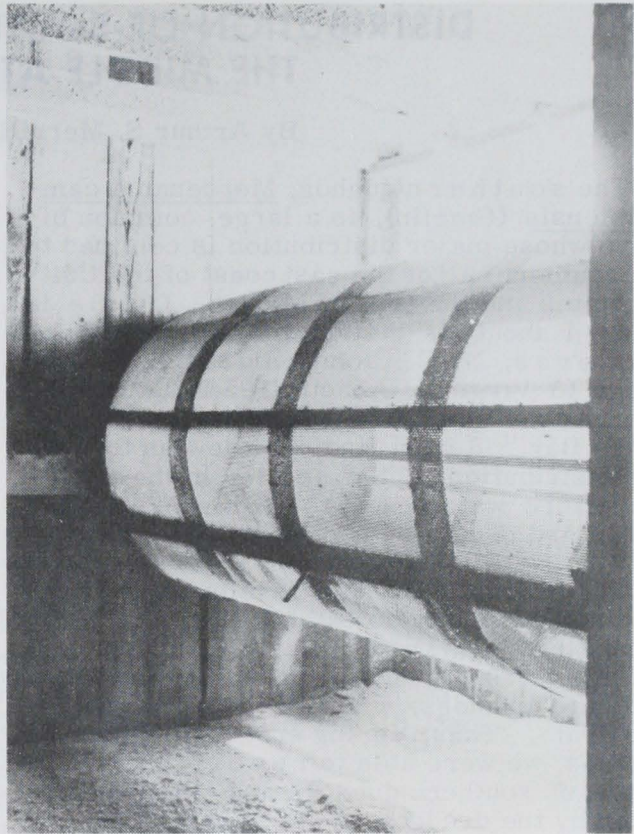


Fig. 10a and b - Mechanical shell remover.

pass the shrimp and cause their hulls to break off (fig. 10). A small amount of shell retained with the shrimp is acceptable in the industry.

Some sun-dried salted shrimp is hand cleaned of shell for use as hors d'oeuvres. Usually, it is packaged in small polyethylene bags and distributed to bars and taverns.

CHEMICAL COMPOSITION

A 210-pound barrel of small shrimp will yield 26 to 30 pounds of sun-dried salt shrimp. Recipes developed by the firm of Bergereon and Blum of Houma, Louisiana, require the reconstitution of the dried product in warm water prior to use in a shrimp dish. Considerable loss of protein is known to occur in small shrimp from cooking and from loss of drip prior to cooking. The composition values (table) reported are given for the

Proximate Composition of Dried Shrimp (Average of 2 Analyses)

Lot	Protein <sup>1/</sup>	Oil	Ash	Moisture
	. . . . . (Percent) . . . . .			
1	65.1	3.7	19.5	9.7
2	55.8	2.7	19.5	9.7
3	66.9	2.0	19.5	10.0

<sup>1/</sup>Extreme variations in protein may be due to presence of varying amounts of chitin from shell left on the shrimp.

commercial-dried product as taken from burlap bags in the warehouse. 100-gram portions were taken as samples from three lots in the warehouse; composition values are from duplicate analyses on each lot. Protein values are estimated from micro-Kjeldahl determinations for nitrogen X 6.25 (Association of Official Agricultural Chemists, 1965, "Official Methods of Analysis," 10th edition, Sec. 38.011; oil was determined as in Sec. 18.012; ash as in Sec. 29.012; and moisture as in Sec. 22.008).

