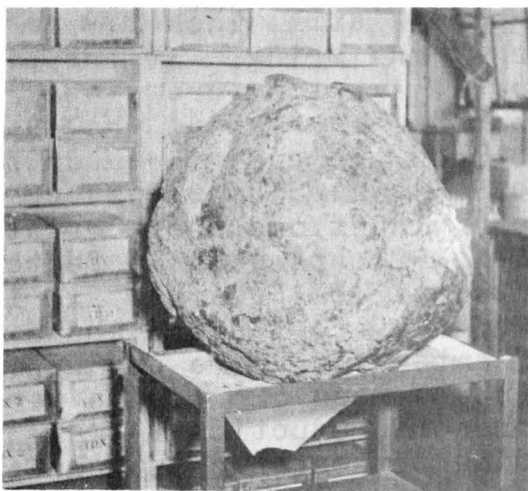


## A M B E R G R I S

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The largest piece of commercially acceptable ambergris ever brought into the New York City market arrived during 1956. It weighed 151 pounds 8 ounces and was valued at about \$20,000.

Courtesy of J. Manheimer Co.

# AMBERGRIS

## CONTENTS

	<u>Page</u>
Source . . . . .	1
Description . . . . .	2
Use . . . . .	2
Identification . . . . .	3
Synthetic substitute . . . . .	3
Bibliography . . . . .	4

Ambergris, a substance produced by sperm whales, is not only rare but extremely valuable. Winning at the gaming tables of Las Vegas and Monte Carlo is more likely than finding ambergris.

Even so, people still look for ambergris because of the quick riches it may bring. It has often been sold for about \$10 an ounce. Whaling crews aboard factoryships watch for it when butchering a sperm whale. Sailors and passengers on ships scan the seas for a drifting hunk. Others search the beaches for lumps cast up by the waves. Perhaps they stubbornly continue their quest because of the luck of the British floating whale factory Southern Harvester in the Antarctic on December 21, 1953 (Clarke, 1954). On cutting up a 49-foot sperm whale the crew found a 926-pound mass of ambergris, more than 5 feet long (fig. 1). From this 926-pound mass 626 pounds were sold. Evaporation accounted for some reduction in weight, and parts of the lump, including the outer crust, had to be discarded, because they were valueless. Broken into small parcels, the remaining mass brought about \$7,840. The price varied from \$2.24 to \$56 per pound, depending on quality.

## SOURCE

Though people of the past fancied many origins of ambergris, its only source is the intestine of sperm whales (Physeter catodon) (fig. 2). This square-headed,

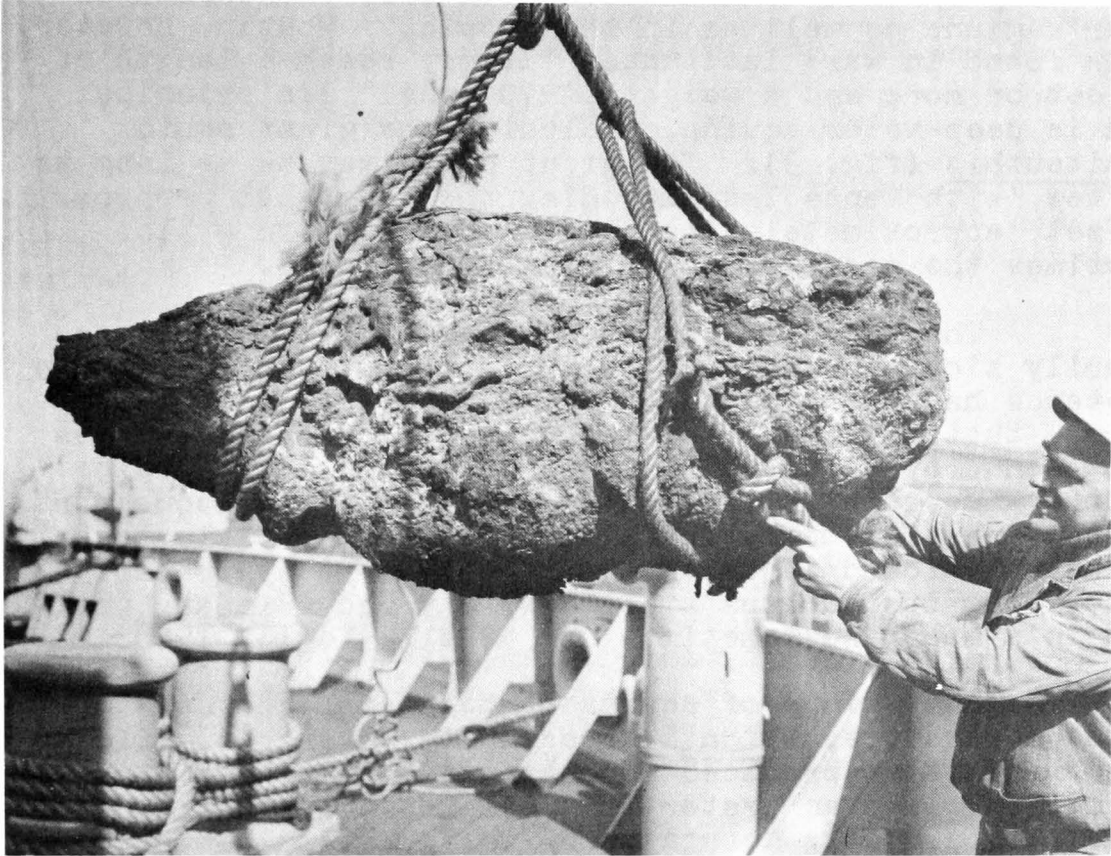


Figure 1.--Ambergris weighing 926 pounds taken from a sperm whale in the Antarctic on December 21, 1953.  
Courtesy of Chr. Salvesen and Co., Ltd.

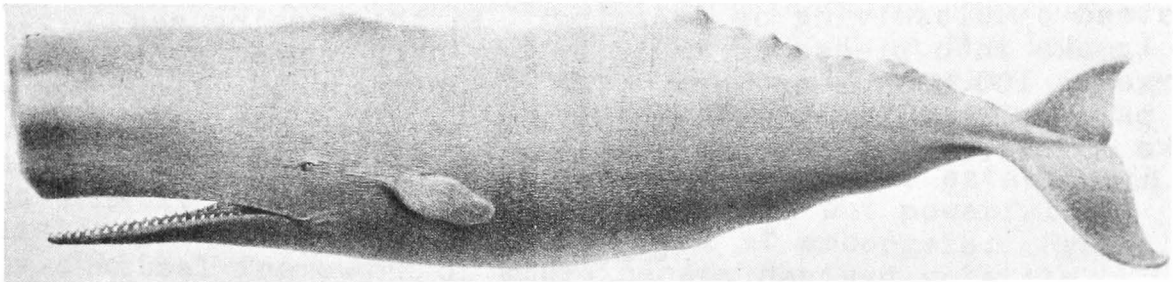


Figure 2.--Sperm whale (Physeter catodon).

formidably toothed mammal occurs all over the world, in polar regions as well as in the tropics. Mostly, however, it is found in warm latitudes. It may reach a length of 60 feet or more and a weight of 70 tons. Its principal food is deep-water squids, including the giant squid Architeuthis (fig. 3). The giant squid may be as long as 30 feet, with tentacles extending the length to perhaps 50 feet, approximately the length of the sperm whale. Sometimes the giant squid weighs 1,000 pounds.

The whale which produces ambergris is not necessarily sick, as was once thought, because this valuable substance has been found in healthy whales. Another theory, that only male sperm whales yield ambergris, has also been proven false. Why and how a few sperm whales produce ambergris are unknown. Squids may play some part in its formation because their sharp, indigestible beaks are usually found in the lumps. However, they probably do not form its nucleus since they may occur in any position in a mass and sometimes not at all (Idyll, 1958).

Some kinds of squids contain ambreine, a sterol, or its derivative, which is present in ambergris. Did a sperm whale that produced ambergris eat only that kind of squid? Or, like an oyster which coats an irritant to render it harmless, does a sperm whale form ambergris to protect its intestine? Or does ambergris result from unusual digestive processes in a sperm whale? There are no answers to these questions now.

#### DESCRIPTION

The mass of ambergris that the whale expels is usually dark, almost black, has the consistency of pitch, but is not sticky. Its odor is foul. But water, sun, air, and time change this floating substance. It hardens instead of dissolving or decaying. In the tossing sea, it breaks into pieces as small as one-half ounce or as large as 100 pounds or more. The color gradually lightens to pale golden, sometimes chalky white, often variegated like marble. The odor becomes less offensive.

#### USE

Ambergris (from the French "ambre gris" for gray amber) was used long ago for many fantastic purposes.

An outstanding use was as a medicine. It was thought to be a remedy for hydrophobia, epilepsy, typhoid fever, asthma, and various nervous diseases. It was said to be able also to dispel evil spirits and ghosts and to lengthen human life. The Orientals used it in gracious living; they added it to fine tobaccos, liquers, and coffee.

Today it is used only in fine perfumes. It not only traps and holds the fragrances of flowers, but adds a faint, agreeable, and lingering "earthy" odor, "a touch of velvet."

#### IDENTIFICATION

You need not wonder long if your find is ambergris, because you can quickly find out. A simple method is to heat a wire or a needle for 15 seconds in a flame and press it into the sample to a depth of one-eighth inch. If it is genuine ambergris, a dark brown to black, opaque, resinous liquid will form around the wire and appear to boil. Withdraw the wire and immediately touch it with your finger. Warm ambergris will leave tacky, pitch-like strings adhering to the skin. When cold, these strings are shiny and resemble dark brown or black enamel.

If you feel that, after using this test, you are still not certain whether a substance is ambergris, send it to a biological or a technological laboratory of the Bureau of Commercial Fisheries of the United States Fish and Wildlife Service in your area. A technician will be able to test it for you. Other laboratories may also render similar service.

#### SYNTHETIC SUBSTITUTE

The once firm position of ambergris in the perfume market no longer exists, for this longtime chemical puzzler has now been synthesized or produced in the laboratory. Research on ambergris synthesis was carried out at the same time by Professor L. Ruzicka and his team in Zurich, Switzerland, and by Dr. E. Lederer and his collaborators in Paris, France. These researchers established the constitution of ambreine, an odorless but powerful fixative, which represents 30 percent of ambergris. From the chemical framework of ambreine are derived volatile,

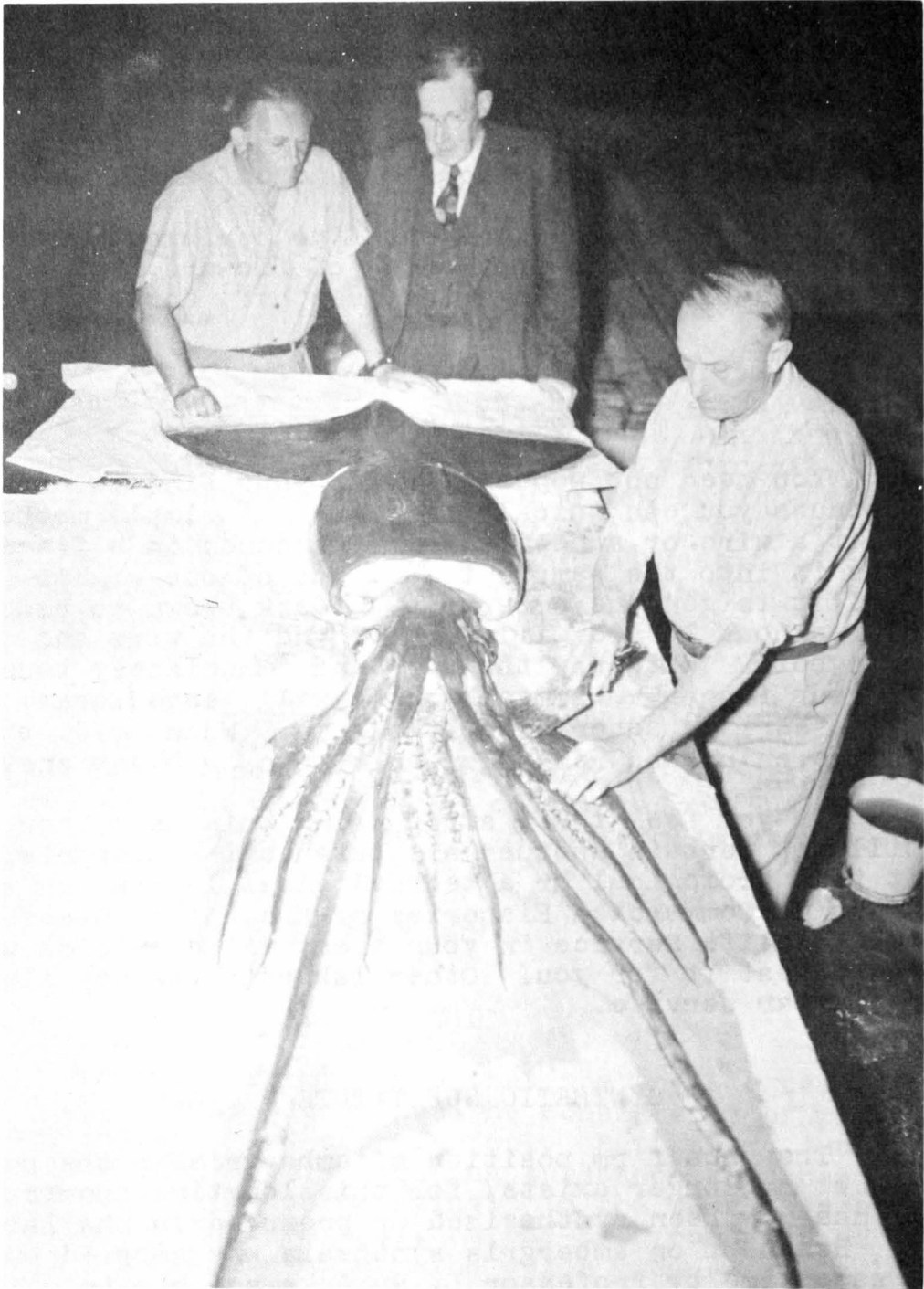


Figure 3.--A giant squid (Architeuthis) taken in the Humboldt Current off the Pacific coast of South America by American Museum of Natural History expedition, headed by Michael Lerner (left). The squid moves through the sea, driving itself along by jets of water ejected with great speed and force. Courtesy of Michael Lerner.

odoriferous, essential constituents. In natural ambergris, it is believed that the gradual decomposition of ambreine under the influence of external agents constantly forms these substances.

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