

ESSENTIAL OILS

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Essential, ethereal, or volatile oils are odoriferous substances of an oily character, occurring normally in plant tissues or produced incident to the life processes of plants. They give these plants their characteristic aromas. The oils are present, as a rule, in small amounts, and may be confined to special cells, glands, or ducts of the plant. In some instances they are limited to one particular structural element, while in others they are dispersed throughout the various parts, such as the bark, roots, leaves, flowers, or fruit.

In scented flowers, such as the rose, the oil is chiefly concentrated in the petals, whereas in spice-producing plants the concentration may occur in the leaves and bark, as in the case of cinnamon, or in the fruit, as in nutmeg. In some species of conifers the oil may be confined to the needles and twigs. The function of the oil in the life of the plant is uncertain. It may be merely an excretory by-product or it may be a secretion serving a specific purpose, such as attracting insects to the flower.

Most essential oils are insoluble in water, but they are freely soluble in alcohol and ether. They have an extensive range of uses, and have been employed since ancient times for cosmetic and ritual purposes, for incense, and for embalming. The invention of distillation, perhaps in ancient Egypt or in India, made possible the extraction of essential oils in the pure state. They are now commonly employed in the manufacture of perfumes, cosmetics, soaps, and drugs, and as flavoring agents.

Most of these essential oils may be liberated from plants without undergoing decomposition. The principal methods of extraction are by distillation; by extraction with volatile solvents, such as alcohol; by expression, either by hand or by machine; and by absorption in fat, known as the "enfleurage" process.

In Hall 28 of the Department of Botany there has recently been installed an extensive exhibit of essential oils, representing material obtained from plants growing in the United States, Central and South America, Europe, India, Ceylon, and other countries. The material for this collection was in large part contributed by Fritzsche Brothers of New York, American representatives of Schimmel and Company of Miltitz, Germany.

THE SARGASSUM-FISH

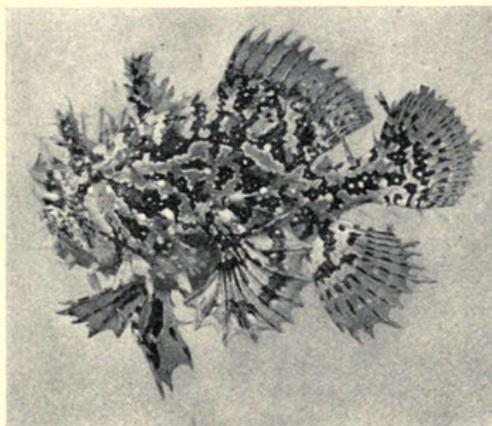
BY ALFRED C. WEED
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Many travelers have seen and wondered at the masses of sargassum or gulf weed floating in the ocean currents, but few of them have any idea of the multitude of small creatures that live in these masses and drift with them to all parts of the sea. Fish, crabs, snails, squids, and many other creatures climb through the weed or rest on the branches, while barnacles, sea plumes, and various other forms of life are attached to the stems or leaves and spend their lives traveling at the will of the winds and ocean currents.

One of the strangest of the creatures that live in these water plants is a small fish that is called sargassum-fish, mouse-fish or fishing frog. It belongs to the great group of angler-fishes, which have the side fins developed like and used as feet. Its ventral (leg) fins are under its throat, while its pectoral (arm) fins are back near its tail. These fins look almost like the feet of a frog and are as flexible and useful as

the hands of a monkey. The "wrist" joint, which is very short in an ordinary fish, is long and slender like an arm, and the fins wave around like the fans used by a dancer. The gill openings, instead of being in the usual place, are carried back under the skin behind the "arm."

The sargassum-fish swims only when necessary to cross some open space where it cannot go around. Most of the time it climbs around through the weeds, using its fins like hands. It grasps the stems and leaves as firmly as a man would a rope. It is constantly looking for something to eat, and when it sees a suspicious movement in the weeds it is ready to take the crab or other animal into its great mouth. All the creatures that live in the sargassum are colored like the plant and cannot be seen unless a false movement or the shine



Sargassum-fish

Reproduction of strange denizen of the sea, on exhibition in Albert W. Harris Hall.

of an eye betrays them. The sargassum-fish has a very large mouth and can readily swallow a crab or another fish as large as itself.

When the eggs of the sargassum-fish are laid, they float on the surface of the water for a few days until they hatch. Then the tiny young fish swim around until they reach a mass of the weed where they can find food and shelter. In their bushy homes they are great travelers. In the Atlantic they have been seen on the shores of Norway, central Africa, Massachusetts, and southern Brazil. In the Pacific and Indian Oceans they are found on the shores of Africa, Australia, and Japan. The cold currents seem to keep them away from the west coast of America.

A celluloid model of the sargassum-fish has been prepared by Staff Taxidermist A. G. Rueckert from a specimen collected at Key West, Florida, by the John G. Shedd Aquarium and presented to Field Museum. It is now on exhibition in Albert W. Harris Hall (Hall 18).

New Books in Library

The Library of Field Museum calls attention to the following publications, recently added to its collections, which contain material of interest to general readers: Bolton, *Anza's California Expeditions* (five volumes); Bailey, *Phases in the Religion of Ancient Rome*; Russell, *Plant Nutrition and Crop Production*; and Nilsson, *Mycenaean Origin of Greek Mythology*. These, and other scientific works in the Library's collection of some 95,000 volumes, may be consulted by Members of the Museum and by the general public. The reading room is open from 9 A.M. to 4:30 P.M. from Monday to Friday, and from 9 A.M. to noon Saturday. It is closed on Sunday.

PRINCE M. U. M. SALIE PRESENTS GEMS FROM CEYLON

A valuable collection of precious stones of many varieties, brought from the island of Ceylon, which is known as the home of fine gems, has been presented to Field Museum by Prince M. U. M. Salie, well-known Ceylonese gem merchant. There are fifty-five stones in the collection, including a number of rare specimens. They will be distributed according to their classifications among the exhibits in H. N. Higginbotham Hall (Hall 31) at an early date.

Outstanding in beauty and interest in the collection are sapphires, star sapphires, rubies, a star ruby, aquamarines of remarkable fire and color, moonstones, and an Oriental amethyst sapphire. The collection covers the range of all the more important stones found in Ceylon, and embraces every hue from colorless through the whole spectrum from red to violet. In a number of cases there are several stones of one basic kind but differing in color, showing the variety of tints possible in high class gems of a single species.

Most fascinating and most sought after, in the experience of Prince Salie, are the star sapphires, for which Ceylon is particularly noted. These occur in various colors from light gray to deep blue and lavender. When found in deep red, which is rare, they are called star rubies and are of higher value. The star sapphire or ruby, when placed in the light, shows a luminous six-pointed star at every angle of vision. Among the star sapphires Prince Salie has presented to the Museum are a large one of sixty carats, and one of the rare star rubies.

Another unusual ruby included in the gift is one which combines the perfection of color of the Burmese type with the sparkling fire of the Ceylonese. The moonstones in the collection are remarkable for possessing a more pronounced moonlight sheen than is usually seen, and in the case of some upon which faces have been carved this produces a particularly striking effect.

Besides the gems mentioned above, Prince Salie's gift includes a "cat's-eye" (treasured by Indian rulers as a legendary jewel and often mounted in the crowns of princes and rajahs), pink star sapphires, brown, white, and blue zircons, spinel ruby, carved sapphire, carved ruby, cinnamon stones, water sapphires, fancy sapphire, parparagum, jargon, peridot, pink topaz, golden sapphires, and other stones.

Prince Salie's family for generations has been engaged in the mining, cutting, and merchandising of precious stones. He began his work in this field some forty years ago at the age of fourteen. He has a large and unusual exhibition of gems on view at A Century of Progress, in the General Exhibits Building, Pavilion 4, Second Floor. Many of the stones he has on display there have been awarded highest honors at other international fairs, including those of Christ Church, New Zealand, in 1906, Panama Pacific International Exposition in San Francisco in 1915, Panama California International Exposition in San Diego in 1916, and the Sesquicentennial Exposition in Philadelphia in 1926. Prince Salie's home is at Galle, Ceylon. He maintains permanent American headquarters at Miami Beach, Florida. In recognition of his gift, Prince Salie has been elected to the class of Museum membership designated as Contributors.

A group of Alaska water birds from the Pribilof Islands forms an attractive exhibit in the Department of Zoology.



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