

OCEANOGRAPHY

Ice Patrol Season Begins With 4 U. S. Vessels on Duty

Patrol Is Handicapped by War Because They Cannot Base in Canada and Because They Lack Cooperation

THE 1940 ice patrol season is beginning in the North Atlantic, with four U. S. Coast Guard cutters on duty. The Chelan, Cayuga and Ponchartrain will ply the steamer tracks, looking for icebergs and other menaces to navigation, while the General Greene will gather oceanographic and other scientific data.

Because of the European war, difficulties have been multiplied for the Ice Patrol. In normal times, its vessels base at St. John's, Newfoundland, thus saving a great deal of time and fuel in getting to and from their stations at sea. However, because the Chelan, Cayuga and Ponchartrain are armed, it has been considered best for them to keep away from ports of belligerent powers, and they will base in Boston and New York. Only the General Greene, whose exceedingly light armament "doesn't count," will continue to use the Newfoundland port.

Even more serious will be the absence of cooperation by freight and passenger vessels. In peace time, any ship that sights an iceberg radios its location at once to the Ice Patrol vessel on duty, which collates all such information and sends out general ice broadcasts for the benefit of all shipping. Now, however, all shipping of belligerent powers, and most neutral vessels as well, are keeping a strict radio silence lest they betray their position to prowling Nazi submarines. So the Ice Patrol will have to find all its own icebergs.

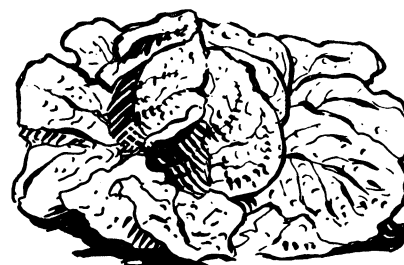
The radio silence will help in just one

respect. Ordinarily it is necessary to request all shipping to suspend radio sending while the ice broadcasts are on the air. Now they have the whole air to themselves without asking for it. Only, they probably won't have much to put on the air.

From such meager information as it has been possible to obtain so far, it appears that the 1940 ice season is starting in more or less normal fashion. Very little ice has been reported. Last spring was one of the heaviest ice years of record; the Ice Patrol had to go on duty nearly a month early. It is fervently hoped that 1940 will be a low ice year, because with cooperation from shipping wiped out by the war, and convoys taking unorthodox tracks to keep away from possible submarines, the menace from any given iceberg will be increased many fold.

In addition to the ice broadcasts, the vessels of the Ice Patrol also send frequent weather reports to the U. S. Weather Bureau. This part of their activity is not particularly relished by the British Admiralty, because Britain is doing its best to maintain a "weather blockade" of Germany, and of course Nazi antennae can also pick up these North Atlantic weather reports. However, since the information is particularly desired in this country for its usefulness to the navigation of the clipper planes, the messages will continue to be sent, regardless of objections.

Science News Letter, March 9, 1940



Strong as Water

WATER, shapeless water, plays an important role in maintaining shape in plants.

An unwilted, healthy leaf or green shoot is crammed almost to bursting with water, which keeps each tiny, individual cell distended and rigid with internal pressure, just as a football or a rubber tire is kept distended by the internal pressure of the air in it.

In plants or parts of plants that contain little of wood and much of pulpy tissue, it is this water-pressure that serves almost exclusively to keep up the shape. Some very juicy leaves, like those of fresh lettuce or nasturtium, can have water wrung out of them by simply squeezing in the hands; and in some fruits the pressure of the contained juice is so great that it will flow of itself if the skin is broken.

When such a plant or plant part loses water by evaporation and wilts, the effect is very similar to that of a slow leak in a rubber tire. The first visible effect is a slight drooping and loss of stiffness, followed by an apparently total collapse.

But even when a leaf or stem is wholly wilted there is still water in it, just as there is still air in a flat tire. Limp as it is, it is still moist, and while wilting may come in only a few hours, final drying to a crisp, completely withered condition usually takes days. The less water there is left, the harder it seems to be to get rid of it.

Even after the plant material may seem to be quite dry, there is still water left, which sticks tenaciously, and cannot be gotten rid of except by heating in an oven. Well-cured hay, a thing on whose dryness proverbs have been built, will lose about forty per cent of its weight

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SCIENCE NEWS

in water if kept in a slow oven for several days.

It is apparent, then, that the role of water in maintaining the shape of plants

is a very important one, and that the grip a plant has on its water content is correspondingly great.

Science News Letter, March 9, 1940

MEDICINE

Chemical Control of Cancer Advanced By Experiments

A STEP toward the control of cancer by chemical treatment is announced by Dr. Leonell C. Strong, Yale University School of Medicine. (*American Journal of Cancer*, Feb.)

So far the results apply only to mice, but they indicate the possibility of success in chemical treatment of cancer in other species, because they show that the same chemicals can affect cancers, leaving adjacent normal cells untouched, regardless of the genetic origin of the mouse.

Growth of spontaneous cancers in six different strains of mice was slowed, and in some cases the cancers liquefied while in others they disappeared completely, when the two chemicals, methyl salicylate and heptyl aldehyde, were added to the animals' food.

This shows, Dr. Strong explains, that tissue specificity, a fundamental factor in cancer development, will not impede chemical control of the malignant dis-

ease if scientists can find a chemical that will check or reverse the malignant process. In other words, even though there is an intrinsic genetic factor which plays a part in predisposing an individual to cancer, the cancer can be controlled by chemical attack. The chemicals probably could not change the genetic factor predisposing to cancer, but by their effect on other fundamental aspects of the cancer, they could check the malignancy.

This work is the logical development of similar work on the use of true oil of Gaultheria and of heptyl aldehyde used alone, which has been reported by Dr. Strong, during the past several years.

Next step toward chemical control of cancer, Dr. Strong says, will be to find a combination of pure chemicals which have the maximum effect on cancers in laboratory animals. After that it may be time to talk about chemical control of human cancers.

Science News Letter, March 9, 1940

MEDICINE

Furfural, in Rice Wine, Causes Liver Cirrhosis

CIRRHOSIS of the liver, often attributed to habitual or excessive use of alcoholic drinks, can be caused by fur-

fural, ingredient of saké, the Japanese rice wine, Drs. Waro Nakahara and Kazuo Mori, of the Laboratories of the Japanese Foundation for Cancer Research in Tokyo, have found. (*Proceedings of Imperial Academy*, Oct. 1939)

Their discovery, made in feeding experiments with rats, was part of an attempt to learn whether peculiarity of food and drink is the cause of the wide prevalence of liver disease, including cancer of the liver, in the Far East.

Wood alcohol, ethyl alcohol, and the other constituents of saké were all tested but only the furfural produced significant liver damage in the rats. When they were kept on a diet containing only this substance and polished rice,

RADIO

Charles A. Breskin, publisher of "Modern Packaging," will tell about plastic "bottles" and other new kinds of packages about to go on the store shelves of the nation as guest speaker on "Adventures in Science" with Watson Davis, director of Science Service, over the coast to coast network of the Columbia Broadcasting System, Thursday, March 14, 4:15 p.m., EST, 3:15 CST, 2:15 MST, 1:15 PST.

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liver damage occurred in 38 out of 100 rats. During the first 37 days of the diet, 62 of the rats died without showing any significant change. At the end of 167 days of the diet all the other rats had died, most of them showing more or less definite cirrhotic changes in the liver.

Cirrhosis of the liver was also produced in guinea pigs and rabbits by furfural feeding. Further experiments on the production of liver cirrhosis by this chemical from rice wine are now under way, Drs. Nakahara and Mori reported to the Imperial Academy of Japan.

Furfural is found in whisky and brandy sold in the United States, but only in insignificant amounts, rarely exceeding two parts per 100,000 of the liquor, it was learned from the U. S. Bureau of Internal Revenue's alcohol tax chemical laboratory.

Any whisky that is kept for any time in barrels, especially charred barrels, such as used for aging American whisky, will contain small amounts of furfural. This chemical may also get into whisky or other liquor if it is distilled in a pot still, such as is used for Scotch or Irish whiskies or brandy.

The amount of furfural found in whiskies in this country is not considered enough to be harmful, and government scientists test for it only because it is an indication of the type of whisky and whether or not it was aged in wood.

Science News Letter, March 9, 1940

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