

GENERAL SCIENCE

Closer to Foundation

➤ A DISTINGUISHED but highly informal club of scientists may have held its final meetings in Washington. At any rate, the "members" hope so.

They are the scientists who have been testifying before Congress on the need for a national science foundation. Since the end of the war, a parade of the nation's great in science and education has told committees of the House and Senate that they wanted the foundation.

A subcommittee of the House Interstate and Foreign Commerce Committee has been listening to testimony on the foundation. Among the science leaders who urged passage of a bill to set up the foundation is Dr. Karl T. Compton, chairman of the Research and Development Board of the National Military Establishment.

Back in 1945, he first told a Senate hearing that he was in "wholehearted support of the basic objectives" of the foundation.

Nearly all the witnesses who appeared at the hearings had, like Dr. Compton, appeared one or more times previously in the past four years to call for establishment of the foundation.

Virtually all the "big names" of American science, technology and education have told one or the other committees of Con-

gress since the war that they want to see the foundation start operating.

Most of them have had some suggestion to make about the organization of the foundation or its functions. But they have all told Congress that they want a foundation. In the last two years, they have added, the sooner the better.

The foundation would organize civilian, peacetime federal support of science under a new agency. The Senate this year passed a bill to start the foundation for the fourth time. Two previous bills died in the House, while President Truman killed one by a pocket veto.

Complicating matters for the House subcommittee which has been hearing the latest testimony of science leaders are eight bills—the one which passed the Senate and seven which have been introduced in the House.

However, most of the House bills differ only in detail with the Senate version. For this reason, plus administration support, scientists are hopeful that the foundation may be set up this year.

If and when it is, it will be a victory—after nearly four years—for a distinguished group of "lobbyists."

Science News Letter, April 16, 1949

ZOOLOGY

Color Change in Oysters

➤ RED oysters, instead of the usual pearl-gray ones, are not necessarily a cause for alarm. Such a color change occurred in oysters harvested from Maurice River Cove in New Jersey early last November. They looked as if they had been saturated with weak beet juice.

Buyers immediately began to shy away from these off-color oysters, and the New Jersey sea food industry might have suffered considerable financial loss, but scientific investigations proved that these red oysters were entirely wholesome despite their new color.

Dr. Thurlow C. Nelson, biologist at the Oyster Research Laboratory of the New Jersey Agricultural Experiment Station, looked into the records of the Fish and Wildlife Service and found that in 1931 there was an outbreak of red oysters in Chesapeake Bay, and that similar occurrences had been reported from Puget Sound, Washington. This was the first record, however, of the appearance of this condition in New Jersey, where the oyster has been studied for over 40 years.

In each case the outbreak of red colored oysters had been preceded by an extended period of unusual warmth in the fall. During this warm spell certain one-celled marine animals known as dinoflagellates

became very numerous. The oysters sucked them in for food as they do other one-celled organisms.

Dr. Nelson predicted that the red-color of oysters would disappear when cooler weather arrived. He was right. On Nov. 16, when the water temperature dropped to 50 degrees Fahrenheit, the dinoflagellates disappeared, and there were no more red oysters.

"The red color," he explained, "is caused by the red or orange-yellow pigments found in many plants. Known as carotene pigments, they are widely distributed in the food we eat; one of these pigments in carrots is the forerunner of vitamin A—so important in preventing night blindness."

To discover the exact nature of the red coloring, Dr. Harold H. Haskin of the zoology department of Rutgers University extracted several of the red oysters with alcohol and ether and obtained significant amounts of at least three plant pigments which normally occur in food.

The red color might also have been caused partly by the small, soft oyster crabs which live within the shell cavity of the oysters, Dr. Nelson stated. These small, soft oyster crabs are esteemed as a delicacy by sea food fanciers. A deep red pigment

is present in the eggs and in the crab in its formative stages. Dr. Nelson therefore advised the owners and operators of oyster shucking houses not to let crabs mix with the oyster pack during the breeding season of the crabs.

Science News Letter, April 16, 1949

MEDICINE

Medals Awarded Patients Who Live with Diabetes

➤ MEDALS are for medical heroes as well as those who fight well in wars.

To patients who fight well against diabetes, a disease that people can live with, Dr. Elliott P. Joslin, of Boston, leading authority on the disease, awards medals. He gives the medals in behalf of the advisory committee of the Diabetic Fund of the Boston Safe Deposit and Trust Company.

One of these medals is not so rare as it was when it was first awarded. Over a thousand patients at the Joslin Clinic alone have earned this medal for living longer with diabetes than the life expectancy of those without the disease.

Today, Dr. Joslin's figures show, the life expectancy of the diabetic is three-fourths that of the ordinary individual. Less than a decade ago only two-thirds of the diabetics lived that long. Each patient who earns the medal helps others to get jobs and insurance despite their having the disease.

A new and more exclusive medal has been provided to honor those who have diabetes and who have lived 25 years or more and still are in perfect physical health, aside from their diabetic condition. So far only seven of these medals have been awarded, five to Joslin Clinic patients and one each to patients at the Mayo Clinic and in Dallas, Tex.

Just as patients formerly were more liable to tuberculosis if they had previously had diabetic coma, so now the facts show that they are more liable to arteriosclerosis, for the same reason. Recently, Dr. Joslin explains, Dr. Priscilla White of the Joslin Clinic has demonstrated that incapacitating arteriosclerosis is infinitely more common among those who have had attacks of coma in their previous history. It is not the coma itself but the fact that coma means treatment of the disease has been neglected.

Science News Letter, April 16, 1949

ENGINEERING

New Type Lighthouse Sends Radiobeacon Signals

➤ A NEW type of lighthouse to aid mariners approaching shore is in the making. The first of the type to be erected, now nearly ready for service, is situated on the breakwater of the Los Angeles harbor, of which Long Beach harbor is a part.

This lighthouse has the familiar flashing light, and a foghorn for use when needed.

In addition, it is a radiobeacon station and provides radio beams which ships may follow by radio direction finders. One important feature of the installation is that it is automatic in operation and requires servicing only about once a month.

The U. S. Coast Guard will keep close check on the operation of the new lighthouse from a light station four miles away. The three-story structure is designed to withstand earthquakes and wind and wave forces. Its 36-inch airway beacon-type lantern, producing 140,000 candlepower, will flash a warning light around the horizon every five seconds.

Science News Letter, April 16, 1949

PHYSICS

International Temperature Scale Has New Refinements

► THE so-called International Temperature Scale, as revised in 1948 with refinements based upon 20 years of experience, is now in use at the National Bureau of Standards in its own research program and in calibrating instruments for other scientific and industrial purposes.

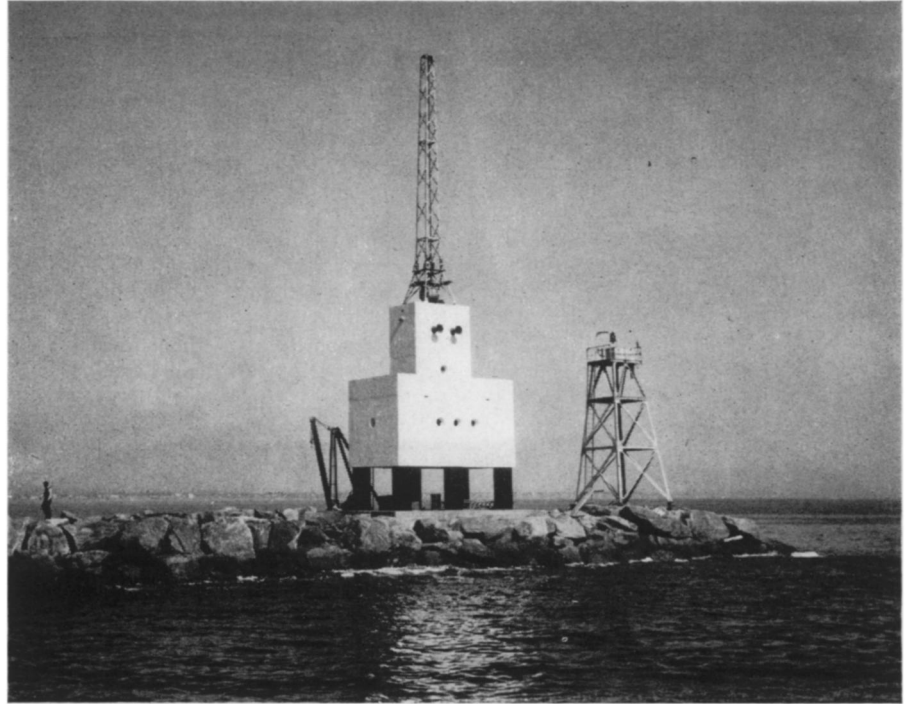
This revised scale was adopted in Paris by the Ninth General Conference on Weights and Measures last October. It is the first revision since its original adoption 21 years ago. Although the 1927 scale proved useful in providing a stable, uniform, and precise basis for obtaining temperatures, later increased precision attained in temperature measurements made a revision desirable.

The scale is based upon six reproducible temperatures, or fixed points, to which numerical values are assigned. The six fixed points of the 1927 scale were the boiling of oxygen (-182.97 degrees Centigrade), the freezing and boiling points of water, the boiling point of sulfur (444.60 degrees Centigrade), the melting point of silver (960.5 degrees) and the melting point of gold (1063 degrees). The same fixed points are specified in the 1948 scale except for a change in the silver point from 960.5 to 960.8.

From 190 degrees below zero Centigrade to 660 degrees above, the measure of temperature in the 1927 definition was based on the indications of a standard platinum-resistance thermometer used in accordance with specified formulas. From 660 degrees to the gold point a platinum-rhodium thermocouple was the reference instrument. Above that, the optical pyrometer has been standard.

In the 1948 revision, the standard platinum-resistance thermometer is to be used from the oxygen point to the freezing point of antimony (above 630 degrees) rather than over the range from -190 to 660 degrees. Platinum of higher purity is also specified for the standard resistance thermometer and the standard thermocouple.

Science News Letter, April 16, 1949



NEW AUTOMATIC LIGHTHOUSE—On the breakwater of Los Angeles harbor stands this first-erected new type of lighthouse, which in addition to its beacon-type lantern and foghorn provides radio beams for ships to pick up.

GENETICS

Survival by Selection

Experiments with bacterial colonies have shown that the environment acts as a selective agency on the survival of organisms.

► WHAT looks at first glance like a clear case of Lysenkoist heredity, in colonies of bacteria in the laboratories at Columbia University, proves upon critical examination to be "orthodox" Mendelian heredity after all, with environment serving merely as a selective agency acting on organisms whose heredity is already fixed, to pick out those able to survive when the environment is changed.

Bacteria were chosen by Dr. Francis J. Ryan as subjects for his experiments largely because they can produce a new generation in 20 minutes, instead of the 20 years required in human beings. Strains were found that required the presence of one environmental factor, one of the amino acids, for survival.

Then this amino acid, known as histidine, was withdrawn from the environment. Nevertheless, bacterial colonies continued to reproduce and grow, no longer needing the histidine.

This looks like a hereditary change induced by a change in the environment, which the Lysenko school of biological

thought in the USSR insists is the only true mode of heredity.

What actually happens, however, is that in the original, histidine-requiring colony there are a few bacteria already present that can get along without the amino acid needed by all the rest. When the histidine is taken away, the other bacteria die off, while these survive and multiply, until finally the entire colony consists of their descendants.

A parallel case might be pictured on the human scale, although Dr. Ryan does not use this illustration. Suppose there were, on an imaginary island, a colony of 10,000 Chinese used to living on rice and fish, with 50 Eskimos scattered among them. Suppose then that the rice and fish gave out, and that the only available food thereafter were seal-meat and whale-blubber. After several generations there would be no Chinese left, and the whole population would consist of Eskimos. This is not an absolute parallel, since food habits are probably not fixed by genes; but the situation is at least close enough to be illustrative.

Science News Letter, April 16, 1949