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The United States has depended upon imports for many condiment and medicinal seeds. Some of the seeds contained in this unit of "THINGS of science" have rarely been grown in the United States. Much information is lacking about how such plants will fare in our country. Digitalis, we know about, but have you seen Nux Vomica, Henbane, Stramonium? And among the condiments, what do you know about the growing habits of Fennel, Anise, Coriander?

You can easily learn more about these seeds and their plants through this unit of THINGS of science which suggests experiments, invites you to plant these seeds and watch the results. Complete descriptions and instructions are included with the seeds.

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PUBLIC HEALTH

# Death Stalks Pacific Coast Due to Red Microorganisms

## "Red Tide" Is Due to Poisonous Algae Originating In Japan and Spreading All Along Our West Coast

NOT THE Japs this time, although the "red tide," so called from the rust-red color the surf bears when this poisonous alga spreads itself along for miles on the Pacific coast from California to Washington, originates off the coast of Japan.

Following deaths reported recently of several persons and many fowl and animals from eating infected mussels and clams which they had obtained from the rocks and sands in Oregon and Washington bordering the Pacific, authorities have forbidden the removal of any of these seafoods from the beaches of the two states until Nov. 1.

Positive proof that the shellfish are unfit to eat was given not only by the investigation in the laboratories of the Oregon State Board of Health but also by Dr. Herman Sommer of Hooper Institute at Seattle and Dr. Trevor Kincaid of the University of Washington. The poison consists of microscopic organisms known as *Goniaulax* by scientists, which is present in all shellfish to some degree. However, the usual small amount does not prove harmful, and may even be beneficial; but in certain heavy tides, mussels and clams take in an extraordinary amount of *Goniaulax*, which is the only poisonous microorganism known in sea-water. This may be overcome by proper cleaning of the shellfish, for the poison is predominantly in the liver and intestinal tract and only to a slight extent in the white meat. However, in the present instance, samples investigated from the catches that caused the death of several people at different times and places, convince the authorities that it is not best to leave this to chance and hence these sea-foods will be forbidden.

The virulent poison created by the unicellular organism *Goniaulax catenellia* is one of the strongest known. It belongs to the class of alkaloids, such as strychnine, and symptoms of poisoning in man or animal are entirely of nervous origin and may begin immediately after the meal. First signs of the

poisoning are a prickly feeling in the lips, tongue and finger tips, followed by numbness. An ataxic gait and muscular incoördination and finally ascending paralysis mark the progress of the poisoning, with death from respiratory failure in from two to twelve hours after consumption of the toxic shellfish. Crabs and oysters do not feed on the "red tide" and hence are free from this menace to life.

Science News Letter, June 6, 1942

BIOPHYSICS

## Protoplasm Rubber-Like But Does Own Stretching

PROTOPLASM, the material basis of life seems to have a rubber-like structure. However, unlike rubber, it does not have to wait for someone else to stretch it; protoplasm does its own stretching and contracting.

These are two of the points about the strange, viscid, ceaselessly pulsating and streaming stuff that is the "alive" part of all cells brought out in a new book, *The Structure of Protoplasm*, edited by Prof. William Seifriz of the University of Pennsylvania (*Reviewed, SNL, this issue*).

Ever since biologists first looked at protoplasm through good microscopes there has been much "learned argument, about it and about," and even yet the doctors disagree about its ultimate structure. Microscopic examination, even with the highest powers of the microscope, tells little. Protoplasmic structure has been likened to granules, globules, a network of bubbles, a "brush-heap" of

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fibers, says Prof. Seifriz. Likeliest structure, on the basis of evidence now in hand seems to be one of overlapping parallel submicroscopic fibers, with minute gaps between their ends. This resembles the theoretical structure of rubber.

The ceaseless, pulsating stretch-and-contract that we see at its highest development in the beating heart and the breathing-muscles runs throughout the whole living world, wherever pro-

toplasm exists, Prof. Seifriz points out. In its most primitive embodiment it is found in the very lowly organisms known as slime-molds, which consist merely of naked masses of protoplasm. These creep and flow with a readily detectable pulsation, slow but rhythmic.

The book is a symposium, to which nine other specialists besides Prof. Seifriz have contributed chapters on various phases of the study of protoplasm.

*Science News Letter, June 6, 1942*

forms a thin wrapping for the spindle, called "cigaret mica." All tubes in radio receiving sets require from two to four pieces of mica to hold the filaments upright and to keep the internal assembly rigidly in the center of the tube. In every tank, airplane, and ship, mica is essential to the condensers.

Fortunately, large supplies of mica are found in this hemisphere. The United States and Canada have for some years been sources. The crucial problem in production, should the hemisphere be separated from Indian sources, lies in the lack of trained, cheap labor to grade and split the material.

*Science News Letter, June 6, 1942*

#### RESOURCES

## This Hemisphere Searching For Cheap Labor for Mica

### No Machine Exists Which Can Grade and Split the Delicate Mineral as Expertly as Hands in India

**T**HREATENED by the jeopardy of India with loss of high-grade mica vital to high-compression airplane motors and scores of electrical appliances, this hemisphere is looking around its own back yard for opportunities to begin a substitute mica industry.

Not only did India produce 6,334 short tons of a total world production of 9,016 short tons, but her mica was expertly graded and split by family labor content with 9 to 12 cents per day.

Argentina, Brazil, Mexico, Canada and the United States all have rich mica deposits, now being surveyed for increased production—but there is little expert mica labor, and none willing to work for Indian wages. Neither has western man been smart enough to invent a machine which can grade and split the delicate mineral as expertly as the swift, brown hands of Indian families.

Consequently mica users in this hemisphere, used to the excellence of the

Indian product, have scorned efforts by nearby producers in Brazil whose grading was careless.

Several plans are under study for introducing the mica-splitting industry into this hemisphere. Canada already produces a small quantity of splitting and could produce more if prices rose. Mexico and Puerto Rico have been suggested, the latter on account of its abundant supply of cheap labor. But even in Mexico and Puerto Rico labor demands far higher pay than the workers of India.

Mica is important to electrical appliances because it can be divided into thin, flexible, transparent films which are unaffected by fire, water, electricity, or acid, and whose volume remains constant in extreme heat and cold. These characteristics are found in no other substance, and no synthetic substitute having similar qualities has so far been discovered.

One of the most important uses of mica is in the insulation of airplane motor spark plugs, in which the mica

#### MEDICINE

### Compromise Treatment Suggested for Syphilis

**A** COMPROMISE between the radical "five-day" treatment for syphilis and the usual 18-month treatment is proposed by Dr. Harry Eagle and Dr. Ralph B. Hogan of the U. S. Public Health Service and the Johns Hopkins Medical School (*Science*, April 3).

From a study of 2,000 rabbits with syphilis, the two physicians noted that within broad limits the curative dose of Mapharsen under any one type of treatment did not vary with the length of time the treatment required. On the other hand, the margin of safety increased as the time-period over which the drug was given increased.

"In the absence of evidence to the contrary," they state, "we must assume that these same considerations apply in human beings."

They accordingly arranged three schedules of treatment for patients with early syphilis in twelve cooperating clinics. The schedules are: injections three times weekly for four weeks; injections three times weekly for six weeks; injections three times weekly for eight weeks. So far, they report, there have been encouragingly few bad effects from the drug.

*Science News Letter, June 6, 1942*

A horse needs two or three pounds of feed each day for every hundred pounds of body weight.

The true *sarong*—as distinguished from the Dorothy Lamour version—is worn by both men and women in the Malay Archipelago, Ceylon, and some parts of India; it is a long strip of cloth, sewed together at the ends and worn as a petticoat tucked around the waist.

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