

Austria in 1898. The germs were brought over from India and Dr. Muller was put in charge of the experimental work. The earliest victim of the plague in Europe was a man named Barisch who was detailed to watch the animals used in the experiment. Due to carelessness, he became infected with the disease and died. This definitely established the fact that pneumonic plague was caused by a plague germ, bacillus pestis. The people attending his case also died, proving the infectious quality, high fatality, and difficulty of diagnosis of this disease, as it was not recognized until he had been ill three days.

RAT EXTERMINATION MAY BE NECESSARY TO STOP PLAGUE

Complete extermination of the rats in Los Angeles may be necessary before the pneumonic plague can be stopped among the inhabitants. Ground squirrels in California are known to be infected with the plague and have been for several years. They may have spread the disease to the rats of the city.

So far the cases have been confined to the Mexican quarter and to the people who have visited their sick friends. In this case only the most extreme quarantine will have any effect.

The latest report from the U. S. Public Health Service shows a total of 29 cases reported and 22 deaths.

A plague serum, rather like the anti-toxin used in diphtheria, has been sent out to the coast by a drug company in Philadelphia. This is purely an experiment as it has never been tried before in the treating of pneumonic plague.

No alarm is shown by the U. S. Public Health Service over the report of a case of bubonic plague in New Orleans. The plague was brought over by a Belgian sailor on a Greek ship from Algeria. The case was diagnosed upon his arrival and all precautions were taken. Since the plague is spread by the bite of a rat flea the ship, *Atlanticos*, has been entirely cleared of rats and has been disinfected.

About a month ago a case of yellow fever was reported in New Orleans without causing a ripple of interest in the medical profession. It was impossible for that case to spread because it was so late in the season that mosquitoes which act as the carrier were dead. In the second place, the case was fully developed and a yellow fever patient cannot infect the carrier after the first 72 hours of the development of the case.

PLANTS RESPOND TO STIMULUS THOUGH THEY HAVE NO NERVES

Definite response by plants to stimuli, under circumstances that disprove any idea of nervous connection, was the subject of experiments reported to the Royal Society by R. Snow of Trinidad.

In his experiments, Mr. Snow cut the stem of a sensitive plant in two, connecting the parts only with a rubber tube filled with water. Yet a stimulus on one side of the cut was transmitted through the water, for the leaves on the other side responded by folding up. A stem crushed in water gave this water the power to stimulate any shoot dipped into it. Mr. Snow believes that when a plant is stimulated, some substance is released that travels in the sap, or in the present instance in the water, and thus causes a response in a distant part.

This phenomenon in plants of response to stimulus, without direct connection, by means of something resembling a nervous system, seems to be analogous to the action of the hormones, or secretions of the ductless glands, in animals. The action of these animal glands has been studied for some years and is now fairly well understood. The presence of similar substance in plants has long been suspected, but the present experiments come nearer to demonstrating their existence than any that have yet been performed.

OZONE MAY CONTROL WORLD HEAT SUPPLY

Observations on the screen of ozone, which exists some twenty miles up in our air and blocks radiations of certain wave lengths to or from the earth, were made for the first time in America at Mount Wilson Observatory by Dr. C. G. Abbot of the Smithsonian Institution this summer. Dr. Abbot recently returned to Washington having secured data which may prove of importance to astrophysicists and also throw much light on world weather changes.

The amount of ozone in our atmosphere is very small, but that small amount is very important. Although if the layer of ozone which exists some fifteen or twenty miles up were placed under atmospheric pressure at the surface of the earth it would be no thicker than the little finger on a man's hand, yet this scant amount of ozone serves as a screen which blocks off much of the important invisible radiation coming from the sun and stars to the earth or going outward from the earth.

All the shorter wave lengths of the ultra-violet at one end of the spectrum and some of the infra-red or heat rays at the other end are shut off by the ozone in much the same fashion that our ordinary window glass shuts out the longer of the ultra-violet rays which are so beneficial to health.

Many of the stars have their chief energy spectrum in the shorter portions of the ultra-violet so that this screen shuts off observation of these important sections of their invisible light. Heat rays from the earth which are intermediate between light and radio waves are also stopped from radiating into space by this same gaseous screen.

Dr. Abbot's observations were made for the purpose of determining whether or not the amount of ozone in the upper air varies with variations in the earth's heat and with radiations from the sun. The ozone is produced from oxygen in the air by the action of the sun's rays which have a wave length of less than 2000. Ozone is destroyed by the sun's rays of wave lengths between 2000 and 3000.

The amount of this gas in the air, acting as a screen to hold in the earth's heat rays or shut out the ultra-violet rays from the sun at any time, represents a balance between the ozone productive and destructive rays in sunlight.

Dr. Abbot, indiscussing his observations compared these forms of radiations to two men carrying sand to and from a sand pile representing the amount of ozone in the air. If one man carries the sand away faster than the other adds it to the pile, the size of the pile will diminish, while if the man carrying sand to the pile gains on the one carrying it away, the pile will increase in size. Dr. Abbot suspected that some such variation takes place in the amount of ozone in our air.

If there is less at some times than others, obviously at such times the ozone screen will be less effective in preventing heat from radiating away from the earth and so influence climate.
