

## Tuberculosis

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analyses, but the composition of all living matter is so complex that it probably will be a matter of years before scientists can say with any degree of certainty that the bacillus that causes the white plague is made up of this or that percentage of carbon, oxygen or hydrogen.

Groups of scientists in different universities and research institutions are working on the knotty problems presented by the cells in the body that react with the germ to form tubercles; but the part played by the different kinds of cells in the blood is still far from plain.

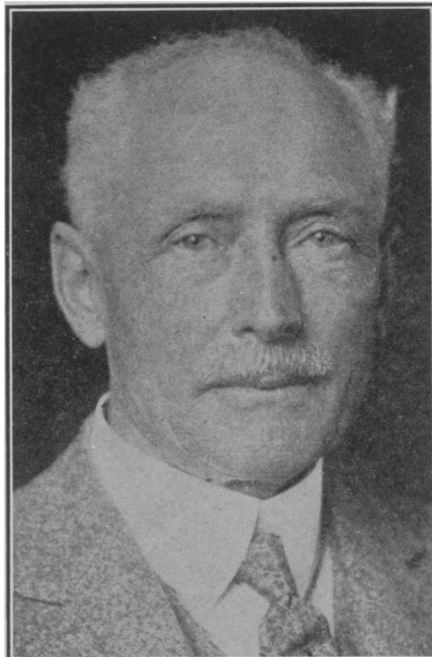
Work with different types of animals has brought to light interesting facts about the susceptibility of different organs in the different species. But as yet no satisfactory explanation has been forthcoming that tells why dogs have tuberculosis chiefly in the liver when guinea pigs under the same conditions almost always develop the disease in the spleen.

Perhaps the most fundamental thing that has been accomplished in this organization and cooperation of brains has been the standardizing of the X-ray pictures of tuberculosis. A few years ago when X-ray pictures first began to come into their own in medical practice it was assumed that shadows thrown on the photographic plate from the lungs indicated tuberculosis. Many a diagnosis reached upon such a basis caused untold needless suffering. Families were broken up and precious possessions given up to send the supposedly afflicted one to a sanatorium. There is no longer any need for these unfortunate contingencies to arise. Due largely to the work of Dr. Henry S. Pancoast of the University of Pennsylvania and a charge of the X-ray work in this committee of co-workers, who are in program of research, an X-ray picture of what constitutes a really healthy lung has been achieved as a standard of comparison. After long and painstaking effort a series of X-ray photographs of tuberculous lungs in all stages up to the point of death has been completed so that when the lungs of a T.B. suspect are X-rayed the diagnosticians have something definite with which to compare them.

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Most lakes are the result of glaciation; and consequently lakes are rare in warm dry climates.

## PSYCHOLOGY



CARL EMIL SEASHORE

### Voice Photographer

The psychology of music, and the voice in particular, has been one of the chief researches of Dr. Seashore, for which purpose he has developed special apparatus for photographing sound waves. These studies have given some insight into the exact way in which John McCormack, for example, differs from singers of lesser note.

Born in Sweden on January 28, 1866, Dr. Seashore came to the United States at an early age and took his doctor's degree at Yale in 1895. In 1897 he went to the University of Iowa, where he has been ever since, successively holding the posts of assistant professor of philosophy, professor of psychology, head of the department of psychology and philosophy and finally dean of the Graduate College. During this time he developed at his university one of the strongest psychology departments in the Middle West.

He has received many recognitions of his scientific standing. Among them was his appointment during 1921-1922 as chairman of the division of psychology and anthropology of the National Research Council in Washington.

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Some kinds of turtles like to make their nests in muskrat houses.

Bee flies are so like stinging bees that their enemies are often fooled into letting them alone.

## PHYSICS

### Sunspots Improve Radio

Reception of radio broadcast programs on fairly long waves generally gets worse as spots on the sun increase, but with short waves, of about 34 meters length, it gets better, Greenleaf W. Pickard, Boston radio engineer, told the Institute of Radio Engineers at their New York session.

Mr. Pickard has been studying the relations between activity of the sun, as indicated by the presence of sunspots, magnetic storms on the earth, and radio reception. He began the study in March, 1926, and has continued it to the present, measuring chiefly the reception from station WBBM of Chicago, which operates on a wave length of 226 meters. There is a very close correlation shown between the magnetic character of the days, as determined at the Cheltenham, Md., magnetic observatory of the U. S. Coast and Geodetic Survey, and the radio reception at the time. When the monthly averages are taken, there is no obvious relation between the sunspots and magnetism of radio reception, said Mr. Pickard, but when weekly averages are used "an increase of solar activity is paralleled by an increase in magnetic disturbance and a decrease in reception."

"It is perhaps unlikely that any high correlation between reception and weather elements will be found," he continued. "Solar disturbances and magnetic storms are world-wide events, whereas weather is rather a local matter. Analysis of weather elements over the whole earth indicate that there are areas of positive correlation with sunspots, and also areas of negative correlation. Although I have not yet collected and analyzed reception data from any such collection of receiving points as would fairly represent the earth as a whole, I have found that a bad night for reception in Newton Centre is in general a bad night anywhere in the United States. And I have also found that European reception of distant broadcast stations agrees remarkably well with my measurements of WBBM. I find that, in general, reception is most affected when a spot or group of spots is near the center of the solar disk, that is, when they most nearly face the earth, although there are exceptions."

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Kentucky is the chief source of native asphalt in the United States.