

Sunlight for T. B.

Medicine

Whether tropical sunlight is more effective in treating tuberculosis than the sunlight of northern climates will be investigated by scientists under the auspices of the Light Research Committee of the American Sanatorium Tuberculosis Association, it has been announced by Dr. Edgar Mayer, chairman of the committee. Dr. Mayer has just returned from the West Indies, where he has made arrangements for sunlight investigations with physicians in Porto Rico, Jamaica, and Trinidad.

Groups of physicists chemists, and clinicians are being organized at various points in the United States and other countries, and these will conduct studies of sunlight for a period of about two years, Dr. Mayer stated.

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T. B. Germ Occurs in Two Forms

Bacteriology

Tuberculosis germs grown artificially may play strange tricks on scientists by occurring in two forms, one being comparatively harmless and the other being very virulent, Dr. S. A. Petroff of Trudeau, N. Y., reported to the National Tuberculosis Association.

Scientists who grow disease germs on a synthetic diet instead of human tissues and cells, favored by the germs, have known that some of the germs so grown appear in two forms, but this is the first knowledge that the germ of tuberculosis plays a dual role. Heretofore, the tubercle bacillus, as it is called in scientific circles, has been considered one of the most stable of germs.

The two forms differ in other particulars besides virulency, but this dif-

ference is found in the bacillus of human, bovine, and avian tuberculosis, and in the bacillus used by Prof. Calmette of the Pasteur Institute, Paris, in his famous Calmette-Guerin vaccine against tuberculosis. This unsuspected difference may account for the unsatisfactory results reported by American scientists with the B. C. G. vaccine. A vaccine made from what was supposed to be the harmless tubercle bacilli would have an unfortunate effect on the subject vaccinated if the bacilli suddenly changed to the virulent form. This change may move in either direction, that is, from virulent to harmless or the reverse, and may occur either within or without the human body, Dr. Petroff reported.

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Diagnosis of Heart Disease is Advanced

Medicine

An important physiologic discovery which should help the doctor to tell the patient suffering from heart disease how sick he is, about how long he can live, and what he must do to live that long, has just been reported by Drs. A. R. Barnes and M. B. Whitten of the Mayo Clinic and Foundation. Drs. Barnes and Whitten have announced that it is now possible to tell, in a given case of infarction or obstruction, in the heart, the site of infarction in the left ventricle and which of the main arteries of the heart is involved.

The walls of the heart, just as any other muscular part of the body, must be nourished with blood. For this purpose, two main blood vessels, the coronary arteries, extend over the heart. If an artery is injured, a clot may form in it. Later the clot may work loose from the arterial wall and may be swept along in the blood stream until it reaches a place where the artery is too small to let it through. Then the artery, of course, is plugged. If there are no other arteries to supply blood to the same region, the tissue beyond the plug in the artery is not nourished, and, in a sense, dies. Physicians call these dead places "regions of infarction." When infarction affects the heart muscle the condition is serious and the phenomena that take place in that heart are different from those in a healthy heart.

Among the phenomena that are disturbed by infarction in the heart are the so-called action currents. These are waves of varying electrical potential that are developed as the various portions of the heart muscle contract. Physiologists have known of these action currents for many years, and finally a way was devised of recording them.

The machine that was developed for this purpose is called the electrocardiograph. The essential part is a string galvanometer, or an electromagnet with an almost invisible filament stretched across the magnetic field. When wires are led off from a patient to this filament the filament is deflected as the action currents pass over the heart. These deflections are recorded photographically on a moving film, the film is developed, and then there exists a permanent record of the action currents in the patient's heart. This procedure is done every year in doctors' offices, hospitals and clinics.

Throughout the years investigators have learned the types of heart disease that will produce certain types of records. Their importance is that when certain types of records are obtained, they enable the doctor to be pretty sure whether or not a patient has heart disease, and if he has, to determine whether or not anything can be done about it.

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Two-Thirds Illiterate

Education

Sixty-two per cent. of the population of the world, ten years of age and over, are illiterate. Of a total population of 1,363,900,000, the number of illiterates is 850,500,000. These remarkable figures were obtained through a comprehensive study of illiteracy in the various countries of the world conducted by James F. Abel, specialist in foreign education, U. S. Bureau of Education. In this work Mr. Abel was assisted by Norman J. Bond, statistical assistant.

While only 18 countries report an illiteracy rate of more than 50 per cent., the population of these countries is approximately 618,000,000. Contrasted with this is the total of 468,000,000 inhabitants of all the 45 countries reporting less than 50 per cent. illiteracy.

The United States is included in the group having under 10 per cent. of illiteracy. Porto Rico and the Philippine Islands, however, have a much larger percentage. Porto Rico reports 55 per cent., and the Philippines 50.8 per cent.

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Wire cloth recently exhibited had 160,000 openings to each square inch.

Almost 800 different models of automobiles are now being made in this country.

The Province of Alberta, Canada, expects to spend \$1,500,000 on its highways this year.