

What may appear to be useless abstract discoveries often result in the greatest advances in science and in industry, and for this reason, among others, the trustees announced their intention of securing adequate funds for the encouragement of research in pure science.

Contrary to the opinion generally held, the United States, although leading in industrial research, lags in research in pure science and supports such research on a level far below what its population, education, and material resources demand. There is, this body contends, an overcrowding of educational institutions that has reduced the limited opportunities for pure science research.

The endowment funds to be raised by the trustees will be administered by the National Academy of Sciences, the leading scientific organization. that is by Congressional charter the scientific adviser of the government. Among the trustees of the National Research Endowment are: Secretary Hoover, Dr. A. A. Michelson, Gano Dunn, Elihu Root, Col. Edward M. House, Cameron Forbes, Henry S. Pritchett, Dr. Robert A. Millikan, Dr. John C. Merriam, Owen D. Young, Dr. Simon Flexner, Dr. John J. Carty, Dr. William H. Welch, Prof. A. B. Lamb, Prof. Oswald Ieblen, Dr. Thomas H. Morgan, Dr. George E. Hale, Dr. Vernon Kellogg, Andrew W. Mellon, Charles E. Hughes, Henry M. Robinson, John W. Davis, Julius Rosenwald, Dr. James H. Breast-ed, Felix Warburg, Prof. L. R. Jones.

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#### LARGE SUNSPOTS INDICATE GREAT SOLAR ACTIVITY

The large sunspot observed by many astronomers, both amateur and professional, during January, and visible even to the unaided eye through smoked glass, disappeared on January 31, when the sun's rotation carried it around the western edge. There is good reason for supposing that it will be seen again, however. Since the time it was first seen last November, this large spot has crossed the solar disc three times. Large spots usually survive for several months and sometimes as long as a year, Dr. Frederick Slocum, professor of astronomy at Wesleyan University, told a representative of Science Service.

Prof. Slocum has been studying the sun and its activities at the Van Vleck Observatory of Wesleyan University since 1914, when he became director, and before that he made a specialty of solar studies at the Yerkes Observatory of the University of Chicago.

As the sun rotates on its axis once in about 25 to 38 days, a spot is carried across the disc from east to west, but the rotation is not uniform for all parts of the sun. Spots on the solar equator cross the disc most rapidly, indicating that for that part of the sun the rotation period is about 25 days, while near the poles of the sun the rotation is much slower.

"The large spot recently visible on the sun crossed the central meridian when it was nearest the center of the disc, as seen from the earth, on December 1, December 28, and January 24," said Prof. Slocum. "It was on the eastern edge of the sun on January 17, and having crossed the disc, it passed around the west edge on January 31. This spot is in latitude 22 degrees north on the sun, and the group is 150,000 miles long; the umbra, or dark center, of the main spot being 20,000 miles in diameter, easily visible to the naked eye with smoked glass. Large spots usually last two or three months and occasionally over a year, but smaller spots may last only a few days.

Prominences, the red flames of hydrogen, which shoot out from the sun and are seen at the time of total eclipses of the sun, and at other times with the proper instruments, are related to the spots. When a spot is on the edge, the prominence is seen above it, but Prof. Slocum does not believe that the large spot is related to the prominences observed by the Swarthmore College expedition to Sumatra during the eclipse on January 14. There was, however, a smaller group of spots in 20 degrees south latitude at the edge of the sun on January 14, and these may have caused some of the eclipse prominences.

"The last sun spot maximum occurred in July, 1917," said Prof. Slocum, "so if the period is the normal eleven years, the next should occur in 1928. Recent sun spot activity, however, indicates that there will be either an earlier maximum or one of greater intensity than usual."

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#### OLD CHINESE DRUG IS NEW MEDICAL FIND

An ancient Chinese remedy, esteemed in the east for 5,000 years, promises to become a powerful new tool in the hands of modern doctors. When introduced into laboratories of the University of Wisconsin by Dr. K. K. Chen, the drug stood stiff tests as a treatment for asthma and colds in the head, and also as a local anesthetic.

The drug which is being studied by Dr. Chen is known as ephedrine and is the active principle of a lowly herb.

"The plant has long been used by the Chinese as a treatment for asthma," said Dr. Chen in an interview. "It is characterized by the sweating which follows its use."

Used in asthma, ephedrine forces the muscles to relax around the air passages in the lungs. The effective area of the lungs is thereby increased and breathing becomes easier. Its use in a head cold is to close the ducts of the secreting glands, thus relieving the condition known as a running nose.

Because tests indicate that it is more powerful and more perfect, ephedrine is expected to supplant adrenalin, which is obtained from the adrenal glands of animals and put to a variety of clinical purposes.

"The most important property of the purified drug is its ability to raise the blood pressure over long periods. In this respect it is superior to adrenalin, which causes only a temporary rise," said Dr. Chen.

The increase in blood pressure which takes place is due in part to the constriction of the minute blood vessels, and to this power is due the efficacy as a local anesthetic. Ephedrine temporarily shrinks the walls of the capillaries - the tiny vessels joining the arteries with the veins. The blood supply is restricted and the area treated becomes insensitive to pain.

With adrenalin, constriction of the blood vessels is followed by dilation, that is, a fall in blood pressure; but ephedrine, the new drug, causes only prolonged constriction without the ensuing opposite effect.