

## MEDICINE

## Sulfanilamide Seems to Have Value For Smallpox

**T**HE NEW drug sulfanilamide appears to have value in the treatment of smallpox.

Four cases in which it largely prevented the eruption from the disease are reported (*Journal, American Medical Association*, May 13) by Dr. Walter O. McCammon of Springfield, Ky.

Seven cases of smallpox recently came under the observation of Dr. McCammon. He used sulfanilamide in treating four, and there was only a slight eruption which soon disappeared. The patients were back at work a week sooner than were the other three cases which were treated symptomatically and in which the typical eruption of smallpox developed.

In an editorial the medical journal points out that no conclusions as to the value of sulfanilamide in preventing deaths from smallpox can be drawn from such a small number of cases.

Although smallpox is increasing (there were 14,355 cases reported last year) the disease is now mild.

*Science News Letter, May 27, 1939*

## ENGINEERING

## Reversed Speech Sounds Like Foreign Tongue

**B**Y RECORDING human speech and then playing it backward, scientists are not only having a lot of fun but learning some new things about one of man's oldest means of communication with his fellows.

The first impression one has on listening to reversed speech is that the talker is speaking in a foreign language and very rapidly, reports E. W. Kellogg of the R.C.A. Manufacturing Company to the Acoustical Society of America. The strange inflections suggest Chinese or some equally unfamiliar tongue.

Even though the record may be made to repeat a single word over and over again and you know what the word is supposed to be, it is difficult to identify it by any sounds that you hear.

The reason for this, suggests Mr. Kellogg, is that when we talk few of us make the sounds we think we do. And many of the sounds that ought to be present are clipped or replaced by inexact substitutes.

We all talk so easily and without effort that we are like a mother who would recognize her baby despite its

very dirty face. We recognize mangled words, provided reasonable fractions of their characteristics are preserved.

A speed of speech which is easily intelligible in ordinary sequence becomes impossible if we stop to identify individual sounds in the words. And that is what we have to do when we hear reversed speech.

Thus it is possible to get further in learning about the reversibility of speech if we try to say a word "in reverse" and then listen to the result. Try "world" and pronounce it "dlrw." You can omit the "o" because it is usually greatly slighted in pronunciation.

Mr. Kellogg, as a test, studied the number of ways the word Schenectady could be spelled and still be recognized in speech. The answer—as Ripley will perhaps some day tell you—is 1,125.

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## PUBLIC HEALTH

## Predict Good Health For Rest of Year 1939

**B**ARRING war or some other great catastrophe, a good health record for the year 1939 is predicted by statisticians of the Metropolitan Life Insurance Company. The prediction is based on the health record for the first quarter of the year, which is considered a reliable forecast because the mortality during the winter months is almost always higher than at any other season.

The 1939 record, however, will not measure up to the low mortality record established in 1938. The death rate for the first three months of the year is already higher than for the corresponding period of 1938. Part of this has come from an increase in deaths attributed to influenza.

Deaths from diabetes and from heart disease were also higher during the first quarter of 1939 than 1938. The death rate for diseases of the coronary (heart) arteries will almost certainly reach a new high figure in 1939.

The death rate for syphilis is down 3.3 per cent. All the principal communicable diseases of childhood except whooping cough caused fewer deaths in the first quarter of 1939. Tuberculosis deaths were slightly lower. Deaths from diarrheal conditions and conditions associated with childbirth were significantly lower.

Suicide, homicide, accident and automobile accident deaths were also lower during the period surveyed.

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# IN SCIENCE

## PLANT PHYSIOLOGY

## Seedless Watermelons By Chemical Treatment

**S**EEDLESS watermelons have been produced in the greenhouses of Michigan State College, by treating the ovaries of unpollinated flowers with the growth-promoting chemical, naphthalene acetic acid. The feat was performed by a Chinese botanist, Cheong-yin Wong, who describes his results in *Science*. (May 5)

Besides the seedless watermelons, Mr. Wong has also produced seedless cucumbers and seedless green peppers by the same treatment.

Some of the "fatherless" fruits that developed after the chemical stimulation of the fruit-forming parts of the flowers did not achieve full size or normal shape; others, however, were completely normal except for the absence of seeds.

Mr. Wong reports of them: "The texture of these fruits was very solid and firm. No difference in flavor could be detected from normally pollinated fruits."

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## CHEMISTRY

## Makes Superior Fuel From Little-Valued Lignite

**A**LTHOUGH not yet applied on a commercial scale, industrial chemistry has perfected a means of producing an improved fuel from virtually valueless lignite, or brown coal, it was reported to the meeting of the American Institute of Chemical Engineers by Prof. E. P. Schoch of the University of Texas.

By heating mixtures of lignite and light petroleum oil in a closed vessel, the large amounts of water in the original materials are removed. The resulting fuel compares with soft coal in heating value.

Prof. Schoch estimates that a plant constructed to produce 231 tons of the lignite fuel each day could do so at a cost of \$3.15 for ton of fuel created. The product would have a heating value of 11,000 B. T. U. (British thermal units) to the pound and would compare with coal at \$4.05 a ton and a heating value of 14,000 B. T. U.

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# THE FIELDS

## BIOLOGY

### Sponge Epidemic Traced To Fungus-Like Organism

**T**HE HIGHLY destructive epidemic that has almost wiped out the sponge fisheries of Bahama-South Florida waters appears to have been due to a fungus-like organism, it is reported. (*Nature*, May 13) The report is signed by an international investigating committee composed of Paul S. Galtsoff, U. S. Bureau of Fisheries, and Hubert H. Brown, C. Leslie Smith and F. G. Walton Smith, Sponge Fishery Investigations, Nassau, N. P., Bahamas.

The threads of the fungus-like organism were found in the flesh of sick and dying sponges, but not in healthy sponges or in those long dead. It does not seem to affect other forms of marine life.

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## GENERAL SCIENCE

### Vernon Kellogg, 1867-1937, Comments on Germany

**F**RRIENDS of Vernon Kellogg have brought together words and memories into a beautiful book—a memorial he would have liked. Dr. Vernon Kellogg, a great biologist and a pioneer trustee of Science Service, lived 70 eventful years that ended two years ago. From the leaves of this volume, there comes pertinent comment on European affairs so pointed to today's news that one realizes that while time passes philosophical ideas persist.

Dr. Kellogg, during the World War in connection with Belgian relief, lived at German GHQ, the heart of the German army. His "Headquarters Nights" recorded his experiences. Are not these words of his, from his memorial volume's excerpt from that record, comment on Germany today?

"Theirs is a point of view that will never allow any land or people controlled by it to exist peacefully by the side of a people governed by our point of view. For their point of view does not permit of a live-and-let-live kind of carrying on . . .

"The creed of the *Allmacht* of a natural selection based on violent and fatal

competitive struggle is the gospel of the German intellectuals; all else is illusion and anathema . . .

"Struggle—bitter, ruthless struggle—is the rule among the different human groups. This struggle not only must go on, for that is the natural law, but it should go on, so that this natural law may work out in its cruel, inevitable way the salvation of the human species . . . That human group which is in the most advanced evolutionary stage as regards internal organization and form of social relationship is best, and should, for the sake of the species, be preserved at the expense of the less advanced, the less effective . . . This is the disheartening kind of argument that I faced . . . Add the assumption that the Germans are the chosen race, and German social and political organization the chosen type of human community life, and you have a wall of logic and conviction that you can break your head against but can never shatter—by headwork. You long for the muscles of Samson."

*Science News Letter, May 27, 1939*

## MEDICINE

### House Mice Indicted As Nerve Disease Carriers

**C**OMMON gray house mice are accused of new wickedness—carrying the virus of a central nervous system disease and transmitting it to human residents in the house.

Corralling mouse suspects from two Washington homes in which this disease, choriomeningitis, has appeared, Dr. Charles Armstrong, senior surgeon of the U. S. Public Health Service, reports that the active virus of the disease was isolated in three out of five mice.

"The failure to find the infection in 21 mice trapped in eight homes and buildings wherein human cases had not occurred indicated that the association between the human cases and the infected mice is more than a coincidence," Dr. Armstrong stated.

The disease, characterized by acute onset, headache, nausea or vomiting, stiff neck and moderate rising fever, is usually followed by recovery in ten days to two weeks, without any paralysis or nerve complications remaining as an after-effect.

That the mice gave the disease to humans, not vice versa, is indicated by the fact that the two patients, both housewives, were removed to a hospital after only four days. The Public Health Service considers it would be remarkable for both cases to infect mice so quickly.

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## PHYSICS

### Self-Steering Rockets Use Tiny Gyroscopes

**T**INY gyroscopes—midget versions of the gyroscopes used to minimize roll on great ocean liners and which make possible the artificial horizon of the aviator's cockpit—are now being used to control the direction of rocket flight at the isolated laboratory of Prof. Robert Goddard at Roswell, N. M.

Prof. Goddard, Clark University physicist on leave, is supported in his rocket researches with funds from the Carnegie Institution of Washington and the Guggenheim Foundation.

The Goddard rocket gyroscopes are set to apply a controlling force when the long axis of the rocket deviates more than ten degrees from the vertical. Initial experiments utilized the gyroscopic control only during the time of the propulsive gases which make the rocket rush upward with terrific speeds.

After that time the rocket continues onward and upward in a smooth curve. Motion pictures of rocket flight show the rocket shooting upward in a slowly wavering curve as it is corrected, first to the left and then to the right, for deviations.

It should be possible, Prof. Goddard has indicated, to apply a compressed air system in the rocket which would be controlled by the gyroscope and which would force the directing vanes out into the slip-stream of the rocket and further aid vertical flight.

*Science News Letter, May 27, 1939*

## POPULATION

### Employment Normal Again But Unemployment Double

**A**LTHOUGH employment has reached the 35,000,000 level of January, 1930, unemployment has more than doubled, Dr. T. J. Woofter, Jr., WPA population expert, told the Population Association of America.

The unemployment problem has doubled because over a million boys and girls are reaching working age each year. About 65 per cent. join the job-hunting ranks.

To solve America's unemployment problem of the next 20 years, work must be found not only for the 11,000,000 now out of work but also for an additional 19,500,000. Most of these young job seekers are growing up in rural regions.

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