



**INSECT'S SOUNDS**—The sounds made by insects' nerves placed in poison are being recorded by University of Illinois scientists. Here, Prof. James Sternburg places part of a nerve into a trough of poison. The sound will then be taped, projected onto an oscillograph and photographed for detailed study. The scientists hope to find clues to why some insects develop an immunity to DDT and other insecticides.

## HEMATOLOGY

## Detect Anticlotting Agent

➤ SOME PATIENTS with hemophilia, the hereditary bleeding disease once called the curse of the Hapsburgs, benefit from a few blood or plasma transfusions, but after the first few, these no longer make their blood clot and stop the bleeding.

This happens because the patients make in their own bodies an anti-blood clotting substance.

The anticlotting substance has been thought to be an antibody to clotting material in the transfused blood, but so far it has been detected only a few times by the usual antibody testing.

Evidence that the anticlotting substance is an antibody and a method to detect it have now been found by Drs. P. Fantl and R. J. Sawers of the Baker Medical Research Institute and Alfred Hospital Clinical Research Unit, Melbourne, Australia, who report it in *Nature* (June 30).

Patients with hemophilia lack prothromboplastin, a substance in blood that normally starts the clotting procedure after a cut or other injury causing bleeding. These patients have inherited an abnormality of protein synthesis, so that their bodies cannot create the prothromboplastin when it is needed.

A proportion of these patients, the Aus-

tralian scientists find, can make substances closely related to prothromboplastin in their antigenic property but without prothromboplastin's ability to form thromboplastin for clotting blood. These continue to benefit from blood transfusions.

A few patients, the ones with severe hemophilia, however, cannot make any prothromboplastin with antigenic property. Because of this, they are likely to develop antibodies to prothromboplastin in blood they get in transfusions. The prothromboplastin from transfused blood is such a complete foreign protein that their bodies react to it as they would to the protein of a disease germ in producing antibodies.

As a result, the transfused prothromboplastin cannot do its job of starting the clotting process, and the transfused blood, after a few transfusions, does not help the hemophilia sufferer by stopping his bleeding.

Which group a hemophilia patient belongs to can be told by a test using beta-prothromboplastin from human blood adsorbed on barium sulfate.

*Science News Letter*, July 14, 1956

Government officials in the Netherlands have reported the 3,000,000 *cattle* in that country now free from tuberculosis.

## TECHNOLOGY

## Microscope Magnifies Grease Thickening Agent

See Front Cover

➤ THE PHOTOGRAPH shown on the cover of this week's *SCIENCE NEWS LETTER* is not a tangled mass of metal shavings or an enlarged view of textile fibers. It is a microscopic view, magnified many thousands of times, of a thickening agent in grease.

The ropelike structure is one of the metallic soaps, which give grease many of its desirable properties. The photograph was taken by electron microscopy, a technique that allows magnification up to 100,000 times, compared to about 1,000 times for the best optical microscope.

At Westinghouse Electric Corporation's research laboratories, electron microscopes are being used to study everything from the effect of detergents on cloth to the examination of pure iron crystals and stainless steel welds, as well as properties of grease.

*Science News Letter*, July 14, 1956

## ENTOMOLOGY

## Houseflies Resist Powerful Killers

➤ THE HOUSEFLY appears to be registering another victory over scientists in the continuing war of eradication.

Danish scientists have found that flies, already DDT-resistant, are now developing an immunity to the more powerful phosphate exterminators.

In *Science* (June 29), J. Keiding of the Government Pest Infestation Laboratory, Springforbi, Denmark, says that, although not all Danish flies are immune to the phosphate killers, any small increase will hinder eradication programs.

In 1955, he states, Danish farmers reported that many flies were not succumbing to the phosphate insecticides, such as parathion, Diazinon and Bayer 21/199. This was a reversal of their previous experience with the phosphate exterminators.

In laboratory tests, more than half of a brood of flies caught in a local pig sty survived a 20-hour exposure to Bayer 21/199. The flies also proved they could survive parathion and Diazinon, although to a lesser degree, he reports.

Danish scientists are optimistic about the continued use of the phosphate compounds, however, pointing out that the resistance of the flies is only moderate. The Danish scientist cautions, nevertheless, that increasing resistance may make housefly control difficult "even with organic phosphate compounds."

There have been no similar reports of phosphate-resistant flies in the United States to date. U. S. scientists have raised phosphate-resistant flies in the laboratory, but report the insects' tolerance has always remained below critical levels.

*Science News Letter*, July 14, 1956