of the flash; and the effect is aggravated by the crookedness of its path.

It is easy to tell how far away a lightning-flash started, by listening for the first thunder-sound. As soon as you see the flash start counting, somewhat deliberately, "One hippopotamus, two hippopotamus, three hippopotamus. . . etc." It takes about one second to say "One hippopotamus." Sound travels about a thousand feet a second. Allow a mile for every five hippopotamuses.

PICTURE ON THE COVER—Black lightning, which appears in some photographs but is never observed visually, is not really dark. The black streaks are the weaker flashes that have a brightness value so low, in contrast to the brightly illuminated background, that they appear dark by comparison.

Science News Letter, June 24, 1933

CRIMINOLOGY—PHYSIOLOGY

Real Detective Stories Told in Medical Exhibit

SOLUTIONS of dozens of real life detective stories were exhibited at the meeting in Milwaukee of the American Medical Association.

Two slender vials, for instance, contain the sleeping medicine found in the organs of Starr Faithful, New York society girl who mysteriously disappeared from an ocean liner. When her body was found in the water, the condition of the heart showed death by drowning, but discovery of the sleeping medicine, veronal, in all the organs showed that she must have been in deep sleep when her body reached the water and that she could not have jumped in.

Nearby are pictures and diagrams of gunshot wounds. From the condition of the edges of the skin and from the size of the entering and exit holes of the bullet much can be told of how and from where the shot was fired.

A picture of the charred remains of a torch murder victim and pictures of the teeth and jawbones by which the victim was identified are to be seen. Exact description of the teeth was sent by the police to thirty thousand dentists, from which identification was made.

But the purpose of the exhibit is not to make a chamber of horrors display, although that is the effect. Instead it is to call attention to the value of trained medical examiners in place of coroners for determining the causes of accidental or sudden deaths.

Science News Letter, June 24, 1933

ENTOMOLOGY

Grasshopper and Locust Plague Declared Largely Man-Made

MAN HAS himself to thank for plagues of grasshoppers and their next of kin, the locusts. An international scientific accord on this point was reached at the Fifth Pacific Science Congress in Vancouver, B. C., by Dr. J. R. Parker of the U. S Department of Agriculture, and Dr. B. P. Uvarov, of the Imperial Institute of Entomology, South Kensington, England.

Dr. Parker, discussing conditions in the grasshopper areas of North America, gave it as his opinion that the cultivation of crops of lush vegetation alongside of unplowed roadside and fencerow strips that offer ideal hatching grounds for grasshoppers tends to make these insects more numerous than they were in the days of unbroken sod, before agriculture came. We must therefore calculate upon grasshoppers as a perennial pest, he said, and adjust our farm practice and methods of anti-insect warfare accordingly.

Dr. Uvarov was concerned primarily with the locust problem in Asia and the adjacent island areas. China, he said, offers the greatest menace on the mainland: an intensively cultivated agricultural country where coordinated scientific control of the insects is not yet a possibility.

The Philippines and the East Indies, he said, present a challenge to the Western powers that control them to unite in an international effort to end the locust menace, as several of the European powers already have united to fight the insects in the Occident and the Near East. The introduction of semi-Europeanized farming methods in the various island groups has resulted in a shifting agriculture, leaving abandoned fields as breeding grounds for locusts, which subsequently rise in migrating swarms and often cross considerable stretches of sea to fall on other islands under the jurisdiction of other powers. Dr. Uvarov pointed out a special responsibility of the United States in this connection, since the Philipines are under suspicion as particularly prolific breeding grounds of migratory locusts.

Science News Letter, June 24, 1933

BACTERIOLOGY

Cause of Fatal Disease In Young Lambs Discovered

DURING the California lambing season, a disease hitherto of unknown origin inflicts heavy losses upon newly-born lambs on farms that are widely separated.

Dr. Hilda Hempl Heller of the Hooper Foundation for Medical Research of the University of California, has fastened the apparent guilt of causing this disease upon one kind of the very common colon bacilli, the sort of germ widely found in the intestinal tract of animals.

An unusual circumstance of this disease is that, though it is an infection, the mechanism of its action resembles that of a food poisoning. The little lamb, just after being born, drinks its mother's milk, which is not poisonous. When in some way it is infected with the colon bacillus at a virulent stage, the germs form a poison in the milk within the lamb's alimentary tract. The lamb dies from absorbed poison rather than from the direct attack of the germs.

The germs charged by Dr. Heller with causing the disease are extremely variable and they have been found to change their deadliness rapidly.

Dr. Heller, who is an authority on botulinus poisoning, began work on the disease because it was thought that it was a disease caused by an anaerobe, or air-hating germ. She found that a powerful poison was present in the lamb's intestines, of which five drops would kill a mouse in two and one-half hours. The blame for forming this poison could not be fastened upon any anaerobe.

The poison-producing power of the