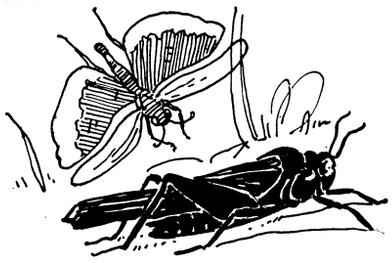
NATURE RAMBLINGS
by Frank Thone

ENTOMOLOGY



Hospitality to 'Hoppers

THAT man's house-pests, like rats and mice, cockroaches and other insect vermin, thrive best where man provides shelter and an abundance of food, is a truism of long standing. None the less striking is the perverseness with which man often provides the most favorable conditions for the enemies of his crops, orchards and forests.

Take grasshoppers, for instance, which this summer have done millions of dollars worth of mischief in the western wheat areas. Unlike many of our crop pests, grasshoppers are natives. They were on the prairies and plains before agriculture came, feeding on the native grasses and other plants.

Then came the white man and his plow, rooting up the hitherto unbroken sod and replacing the native vegetation with new plants that were immigrants like himself; plants which the grasshoppers usually found more toothsome and nourishing than the provender they had been used to. Naturally they fed better, and more of them grew to adult hopperhood, ready to lay their eggs and provide for the next generation.

They found favorable soil for the laying of those abundant crops of eggs in the unplowed strips of land along the roadsides and fences. So long as the eggs got the shelter of a thin layer of soil, preventing their drying out during the winter, they had no need to fear the cold. The only real enemy of grasshopper eggs is through cultivation, which turns them out to the harsh, droughty winter winds.

This combination of a full dinner table and a secure winter nursery, set up by the grasshoppers' own victims, is the picture presented by Dr. J. R. Parker of the U. S. Department of Agriculture. Dr. Parker recognizes the difficulty of getting rid of the grasshopper eggs by plowing them out of their winter quarters. More effective is the standard practice of spreading poisoned baits of sweetened bran mash in the feeding areas of the insects while they are still young. The only drawback to this method, according to Dr. Parker, is the relatively short effective life of the bait, due to its drying out. If this could be overcome, making it good for several days instead of for only a few hours, the control of grasshoppers would be made much easier and cheaper.

Science News Letter, August 26, 1933

MEDICINE

Sleeping Sickness Outbreak Greatest in History

THE PRESENT epidemic of sleeping sickness, *encephalitis lethargica,* raging in and around St. Louis is the worst in the history of the disease, authorities of the U. S. Public Health Service informed Science Service. On August 21 the record showed 129 cases and 12 deaths; and in previous outbreaks elsewhere not more than twenty or thirty cases have been reported in one place. The spread of the malady has been rapid, too: all the cases have been reported since the last day of July.

One thing which is puzzling public health officers is the curious distribution of cases in the present epidemic. Most of the cases and all but one of the deaths so far reported have been in the suburbs, with a total of some 200,000 population, while the city proper, with a population of about 800,000, has been much more lightly visited by the scourge.

The U. S. Public Health Service is cooperating actively with local health authorities. Dr. James P. Leake has been on the ground since the earlier stages of the epidemic, and Dr. Charles Armstrong is now on his way to join him. The Public Health Service has authorized the purchase of a supply of monkeys, which will be inoculated with virus obtained from the bodies of persons who have died of the disease, in an endeavor to obtain better scientific knowledge of its nature and with the hope of eventually working out a method of prevention or cure.

As yet, the germ of sleeping sickness has not been found. It seems to be one of the filterable viruses—something apparently alive but too small to be seen with even the most powerful microscopes and able to pass through the pores of a fine porcelain filter which is able to stop all ordinary germs.

It appears to invade the human system through the nose, passing along the path of the olfactory nerves to the brain and thence down the spinal cord. If the resulting illness does not end in death it often leaves the victim mentally deranged.

The sleeping sickness of the temperate zone, *encephalitis lethargica,* is not to be confused with African sleeping sickness. The latter disease is caused by an animal germ that is quite visible under the microscope—a relatively large organism, in fact—and is transmitted from person to person by the bite of the tsetse fly.

Science News Letter, August 26, 1933

METEOROLOGY

Famine Stalks After Floods On Tragic Plains of China

FLOOD, then famine, seems to be the tragic sequence when heavier rains than usual fall on the steep hills of northern China. Especially is this so in the case of the Yellow River, "China's Sorrow" since time immemorial, now reported by the International Famine Relief Commission to be inundating an area of 900 square miles, and to be threatening a sudden return to its ancient channel to the south of the peninsula of Shantung, instead of its present course to the north.

What such a flood can mean in China can be realized by reference to the records of one or two past rampages of the Yellow River. In 1925 a smaller flood, covering only 800 square miles, caused a crop loss estimated at $20,000,000. The great flood of 1887-1889, which breached an important dike in Honan Province, resulted in the loss of more than 2,000,000 lives from drowning and in the subsequent famine. These figures were gathered by Walter H. Mallory, who at the time he wrote (*Turn Page*)

his masterly treatise "China, Land of Famine," was secretary of the China International Famine Relief Commission.

China's flood problems result from a peculiarly critical combination of geographical and meteorological circumstances, aggravated by a shortsightedness forced upon her people by their terrific poverty. The greater part of China's crowded millions live on the flat alluvial plains of her eastern provinces. These plains are the gift of the rivers that periodically ravage them, for they have been built up in recent geological time by the washing of silt down from the steep mountain lands to the west and north. Once forested, these uplands have been stripped of every tree and bush that might check erosion and modify the torrential run-off of the violent summer rains. This denudation has hastened the silting of the river channels and also helps to throw into their lower courses enormous loads of water that their levees cannot hold back. So high has the silt piled in their diked-in channels that most of the rivers actually have their bottoms higher than the surrounding land; as Mallory puts it, they are on the plain, not in it. Hence when a levee is breached the flood is trebly disastrous.

Once an area in northern China is under water, it may be months before it is drained again and ready for another crop. For not only are the large rivers confined between high earthen banks, but every small stream must be diked as well, and these dikes work "in reverse" after a flood, preventing the water from leaving the fields. Hence a summer flood may stand on the land all winter and long enough into the following spring to prevent the sowing of the next year's crop. One year's flood in China may thus bring two years' famine.

Science News Letter, August 26, 1933

First Glances at New Books

See Also Page 144

Medicine—Physics

AN ELEMENTARY HANDBOOK ON RADIUM AND ITS CLINICAL USE—D. F. Clephan and H. M. Hill—*Oxford University Press,* 164 p., $2.50. As the use of radium therapy has become more wide-spread, the need of such a book has become apparent. Miss Clephan has been associated with radium therapy at Middlesex Hospital, London, for many years, and Mrs. Hill, as radium officer at the Royal Free Hospital, London, has had first hand experience in modern methods of treatment.

Science News Letter, August 26, 1933

Ichthyology

FISHES: THEIR JOURNEYS AND MIGRATIONS—Louis Roule, transl. by Conrad Elphinstone—*Norton,* 270 p., $3.75. Straightforward, easily flowing, popularly readable accounts of the life histories of eel, salmon, shad and a number of other interesting pelagic fishes.

Science News Letter, August 26, 1933

Astronomy

THE COMPOSITION OF THE STARS—Henry Norris Russell—*Oxford University Press,* 31 p., 70c. The Halley lecture of June 1, 1933 delivered by the eminent astronomer of Princeton University.

Science News Letter, August 26, 1933

Archreology

TEPE HISSAR EXCAVATIONS 1931—E. F. Schmidt—*Univ. of Pennsylvania Museum,* 154 p., 99 pl., $1.50. The Museum Journal has devoted its latest issue completely to discoveries by the Persian expedition led by Dr. Schmidt. At Tepe Hissar—"Castle Hill"—the first season of digging revealed three periods of ancient occupation, from about 3000 B.C. After the third settlement was wiped out, presumably by epidemic, the hill lay abandoned for 2,000 years when a Sassanian settlement, marked by the palace of a noble, rose on the border of the old habitation site.

Science News Letter, August 26, 1933

Horticulture

IN A WEEK-END GARDEN—Maude Stewart Welch—*Sears,* 298 p., $2.50. An easy, gossipy, rambling book about a garden and the people who went in and out, from March to February.

Science News Letter, August 26, 1933

Anthropology—Psychology

SACRAMENTS OF SIMPLE FOLK—R. R. Marett—*Oxford University Press,* 230 p., $3.75. Anthropological and psychological essays upon the consecration of natural functions, eating, fighting, mating, educating, ruling, judging, covenanting, healing and dying, written by the rector of Exeter College, Oxford.

Science News Letter, August 26, 1933

General Science

THE NEW STANDARD ENCYCLOPEDIA YEAR BOOK, 1932—Frank H. Vizetelly, editor—*Funk & Wagnalls,* 548 p., $1.50. A concise alphabetical epitome of the events of 1932, designed to supplement the encyclopedia of the same publishers or to serve as a separate yearbook.

Science News Letter, August 26, 1933

Agriculture

FOUNDATIONS FOR FARM RECOVERY—*Univ. of Wisconsin,* 31 p. The 1932 annual report of the Extension Service of the University of Wisconsin's College of Agriculture.

Science News Letter, August 26, 1933

Horticulture—Sociology

COMMUNITY PROGRAMS FOR SUBSISTENCE GARDENS—Joanna C. Colcord and Mary Johnston—*Russell Sage Foundation,* 74 p., 25c. Detailed description of the manner in which hard-put people have been helped to help themselves. This bulletin will still be of use, even though the long-awaited upswing gets started, for we've a long way to go.

Science News Letter, August 26, 1933

Radio Engineering—Physics

WIRELESS RECEIVERS—C. W. Oatley—*Dutton,* 103 p., 85c. A thorough monograph giving a fairly detailed account of the fundamental principles involved in the design of wireless receivers. It is written by a member of the faculty of King's College, in London.

Science News Letter, August 26, 1933

Astronomy—Physics

THE ASTRONOMICAL ASPECT OF THE THEORY OF RELATIVITY—W. de Sitter—*University of California Press,* 196 p., $2.50. The Hitchcock lectures of 1932 delivered by the eminent Leiden mathematical physicist, with additions down to Jan. 30, 1933. Of interest to specialists.

Science News Letter, August 26, 1933