

THE PSYCHO-MEDICAL GUIDE TO A LIFETIME OF GOOD HEALTH: The Promise of Psychosomatic Medicine—Curt S. Wachtel—*Psycho-Medical Library (Citadel)*, 318 p., \$5.00. Explaining in non-technical language the forces between body and mind which may produce illness and cure.

STARTING RIGHT WITH BEES: A Beginner's Handbook on Beekeeping—Original material by M. J. Deyell and the late E. R. Root, revised and edited by Walter Barth—*A. I. Root Company*, 100 p., illus., paper, 95 cents. Beekeeping, the author says, is an occupation for old or young, rich or poor, men or women, tired or vigorous.

SURVEY OF OPHTHALMOLOGY: Volume 1, Number 1—Frank W. Newell, Ed.—*Williams & Wilkins*, 104 p., paper, six times a year, \$2.00 or \$9.00 per volume. A review journal, directed toward the practitioner, composed of condensations rather than abstracts and combined with editorial evaluation.

SURVEYS IN MECHANICS: A Collection of Surveys of the Present Position of Research in Some Branches of Mechanics, Written in Commemoration of the 70th Birthday of Geoffrey Ingram Taylor—G. K. Batchelor and R. M. Davies, Eds.—*Cambridge University Press*, 475 p., illus., \$9.50. Containing ten specially written articles plus a biographical note on Sir Geoffrey.

SURVIVAL RATES, LONGEVITY, AND POPULATION FLUCTUATIONS IN THE WHITE-FOOTED MOUSE, *PEROMYSCUS LEUCOPUS*, IN SOUTHEASTERN MICHIGAN—Dana P. Snyder—*University of Michigan, Museum of Zoology*, No. 95, 33 p., illus., paper, 50 cents.

TAXONOMIC APPRAISAL AND OCCURRENCE OF FLEAS AT THE HASTINGS RESERVATION IN CENTRAL CALIFORNIA—Jean M. Linsdale and Betty S. Davis—*University of California Press*, University of California Publications in Zoology, Volume 54, No. 5, 77 p., illus., paper, \$1.50. A study of animals on 1,600 acres of protected land resulted in the collection of 24,759 fleas from 2,459 mammals.

TEXTBOOK OF CHEMISTRY—Edward Mack, Jr. and others—*Ginn*, 2d ed., 854 p., illus., \$6.50. A college text intended to broaden and deepen the student's knowledge of scientific facts, outline the precise nature of scientific evidence and emphasize the rigor of scientific thinking.

TWO OCCURRENCES OF FALSE KILLER WHALES, AND A SUMMARY OF AMERICAN RECORDS—Harvey R. Bullis, Jr. and Joseph Curtis Moore—*American Museum of Natural History* Novitates 1756, 5 p., paper, 25 cents.

Science News Letter, April 14, 1956

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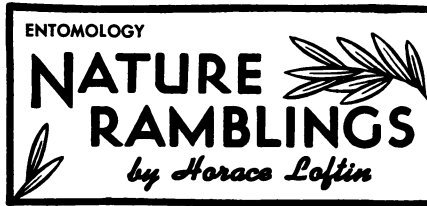
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Insect Athlete

► IF THERE ever are Olympic games for the insect world, a flea will probably leap away with all honors in the broad jump and high jump. Of course, the winning leap will have to be decided by comparing the size of the insect to the distance it springs. Otherwise, the minute fleas would be far outdistanced by the two or three-inch grasshoppers.

Scientists looking into the matter find that a flea whose pair of jumping legs are about 1/20 of an inch long can make a horizontal leap (broad jump) of as much as 13 inches. A high-jumping flea of this size can leap as much as 7 3/4 inches straight up.

If length of legs were the only thing involved, on this scale a human athlete with legs three feet long might be expected to make a broad jump of 700 feet and a high jump of at least 450 feet!

In the insect Olympics, no nation would have a great advantage over the others, since fleas — there are some 500 species known to science — are practically worldwide in distribution. Even animals of the remotest north have their full complement of these parasites.

About the only way to be sure not to be troubled by flea bites is not to be a mammal or a bird, for fleas restrict their unwanted friendship to these two classes of animals exclusively. Presumably, mammals have suffered even longer than birds from fleas, too, since most experts agree that the flea species that infest birds were derived from fleas of mammals.

Moles and shrews may hold something of a record for persistent suffering. Even

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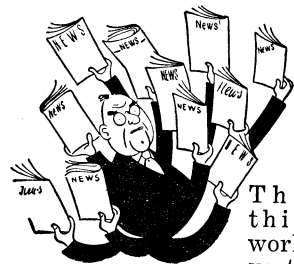
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today they bear a genus of fleas, *Paleopsylla*, that has been found in amber in which the insects were trapped during the Oligocene period of prehistory.

Fleas are wingless insects—though their tremendous power of leaping helps make up for that lack. They can be readily told from their fellow contributors to human suffering, the lice, because they are flattened from side to side or laterally. The lice are flattened top to bottom, or dorso-ventrally.

If kept warm enough, fleas lay eggs all year round. The eggs fall into the litter of the host animal's nest or bedding, and hatch into tiny worm-like larvae in from one to four days. The larvae are non-parasitic, living off organic matter in the trash. According to the temperature, the larvae spin a cocoon in seven to 30 days after hatching, and emerge from the cocoon as adults 13 to 44 days later. From egg to adult takes about 28 days as a fair average.

Science News Letter, April 14, 1956

CHEMISTRY

New Vistas Opened in Chemistry Research

➤ A METHOD for studying free unstable atoms, opening up an entire new field of investigation in chemistry, was advanced by Dr. Herbert P. Broida, National Bureau of Standards research physicist.

Free radicals, atoms with very short life spans, have until now been too elusive for leisurely scrutiny by scientists. If, as Dr. Broida believes, free atoms can be trapped at extremely low temperatures, new knowledge of the nature of the atoms will enable scientists to lay the groundwork for fresh advances into technological fields.

Speaking at a meeting of the Philosophical Society of Washington, Dr. Broida outlined evidence for his theory.

A free radical is an atom with an unpaired electron. Many react quickly in chemical combinations and are therefore very unstable. Evidence indicates these atoms can be trapped in solids at temperatures 200 degrees below zero centigrade.

Some scientists have speculated that the new line of research will make possible development of a lighter, more powerful rocket fuel.

Science News Letter, April 14, 1956

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Questions

ARCHAEOLOGY—Where has a lost Greek city been unearthed? p. 231.

☐ ☐ ☐

MEDICINE—How can the sex of an unborn baby be predicted? p. 226.

What proportion of stomach ulcers harbors cancer? p. 226.

☐ ☐ ☐

PHYSICS—How powerful will the synchro-clash be? p. 227.

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PLANT PHYSIOLOGY—How does a plant tell time? p. 226.

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