

paper, \$1. The Mark II Minitrack system will permit amateur volunteer groups to spot and track man-made satellites.

STUDY OF ICE FORMATION IN SOILS—Kenneth A. Jackson and Bruce Chalmers—*Office of Technical Services*, 44 p., illus., paper, \$1.25. Outlining the theory of nucleation of freezing.

TECHNIQUES OF MAGNETIC RECORDING—Joel Tall with chapter by Peter Paul Kellogg—*Macmillan*, 472 p., illus., \$7.95. Telling "how-to-do-it," as well as something of the history of recording and specialized uses in entertainment, law, medicine and education. A chapter by Kellogg tells of recording the sounds of nature.

THERMAL RESISTANCE OF AIRSPACES AND FIBROUS INSULATIONS BOUNDED BY REFLECTIVE SURFACES—H. E. Robinson, L. A. Cosgrove and F. J. Powell—*Govt. Printing Office*, National Bureau of Standards, Building Materials and Structures Report 151, 22 p., illus., paper, 20¢. Reporting tests of insulating materials.

VITALIZED CHEMISTRY (In Graphicolor)—Russell T. Des Jardins—*College Entrance Book Co.*, 4th ed., 406 p., illus., paper, \$1. A concise high-school text, using color to "spotlight" important points for easy study and quick review.

Science News Letter, January 25, 1958

MEDICINE

New Anti-Leukemia Drugs Developed

➤ TWO NEW anti-leukemic drugs that promise to be more effective than amethopterin, a drug now in standard use, are about to undergo their first trial in human patients at the National Institutes of Health, Bethesda, Md.

Animal studies, done by Dr. Abraham Goldin and associates at the National Cancer Institute, have shown that both drugs give longer survival times and are less toxic than the older drug.

The new ones are chemically similar to amethopterin and are known technically as monochloroamethopterin and 3',5'-dichloroamethopterin. All of them are folic acid antagonists.

Folic acid is also known as vitamin B₉ and vitamin M and is a necessary factor for cell growth. The so-called antagonists resemble folic acid and have been developed so cancerous cells can be tricked into taking them up instead of the needed folic acid. When this happens, normal life processes inside the cell are disrupted and the cell dies.

One of the important advantages of the new drugs is that they can be given in much higher dosages than amethopterin without beginning to harm normal cells as well as cancerous ones.

In mice, which had received fatal doses of leukemic cells, the 3',5'-dichloroamethopterin gave an average survival time of 36 days. The average survival time of untreated control animals was only 11 days.

With the new drug, unlike amethopterin, the local tumor at the site of the leukemic inoculation began wasting away under dose levels too small to cause the entire animal to lose weight at the same time.

Dr. Goldin reports on the animal work in the *Journal of the National Cancer Institute* (Dec. 1957) with his associates Drs. John M. Venditti and Stewart R. Humphreys and Nathan Mantel.

Science News Letter, January 25, 1958

Questions

ANTHROPOLOGY—How long has man lived in the eastern United States, according to radiocarbon dating of tools? p. 57.

With what disease is Hemoglobin E associated? p. 55.

GENERAL SCIENCE—What proportion of the budget has President Eisenhower indicated for research and development and science education? p. 53.

GEOPHYSICS—How much more ozone is there at Little America than in New Mexico? p. 51.

MEDICINE—What metals either have been found to cause cancer or are suspected of causing the disease? p. 56.

Photographs: Cover, National Bureau of Standards Boulder Laboratories; p. 51, U. S. National Committee-International Geophysical Year; p. 53, Smithsonian Institution; p. 64, Ceco Steel Products Corp.

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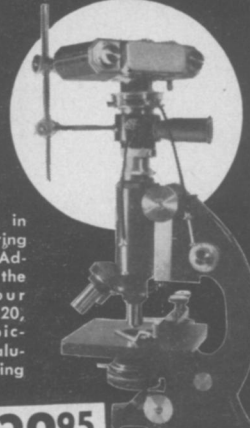
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