

GENERAL SCIENCE

Very Few Pennies Saved by Buying Paper Bound Books

► BUYING a book without the heavy cover would only save you a few cents, a publishing official states.

F. Ronald Mansbridge of the American branch of the Cambridge University Press says that there would be little saving to you if you could buy regular editions of books with only paper covers. Mr. Mansbridge's views are given in the journal, *SCIENCE* (Aug. 5), in answer to an American scientist's complaint about the high cost of scientific books.

John R. Lowry of General Foods Corporation, Hoboken, N. J., wrote to the journal suggesting that paper-covered books might help cut the cost (*See SNL*, Sept. 3 p. 153).

"The saving in most instances would amount to only a few cents," declares Mr. Mansbridge. This, he explains, is because most of the job of binding a book has to be done regardless of the type of cover.

As for the price of books, Mr. Mansbridge has some further comments. Book prices are up, but they haven't doubled, and the cost of manufacturing books has in recent years.

"I believe that books show a smaller increase in price over the prices of ten years ago than almost any other commodity on the market," he concluded.

Science News Letter, September 10, 1949

ASTRONOMY

Fourth New Comet of 1949 Has Been Spotted

► A NEW comet, fourth of the year and second one to the credit of South African astronomer E. L. Johnson, was discovered Aug. 24.

Far too faint to be seen by the naked eye and too far south in the sky for many American telescopes, the new comet was spotted by Mr. Johnson from the Union Observatory at Johannesburg. First new comet of 1949 was also discovered by Mr. Johnson in May.

Of fourteenth magnitude, the comet was first spotted in the southern constellation of Capricornus, the horned goat. It was moving south and west in the sky and is now believed to be in the constellation of Microscopium, the microscope.

Science News Letter, September 10, 1949

GEOLOGY

Mexico's New "Volcano" Has Several Possibilities

► THE shepherd who was treated in Mexico for burns said to have come from a new volcano rising out of the earth southeast of Mexico City may have been the discoverer of volcanic Mexico's newest

erupting mountain. But there are several possibilities.

One is that he was too familiar with the story of Dionisio Pulido, a Mexican farmer whose corn field sprouted the now-famed Paricutin volcano only six years ago.

Only about two years ago, reports came of another "Paricutin," this one in Vera Cruz state. The "volcano" was a fumarole, a hole from which gases or fumes issue. And the reports, which momentarily excited earth scientists, were merely designed to get publicity and attract tourists.

But Mexico will, scientist believe, have other "corn field volcanoes" rising out of the earth as dramatically as Paricutin. One authority, Dr. Fred M. Bullard of the University of Texas, has traced the development of Mexico's volcanoes and says there will be more. But his theory puts the appearance of the next one along about two centuries from now.

Science News Letter, September 10, 1949

AGRICULTURE

Irrigation by Sprinkler System Best on Sandy Land

► THE sprinkler system for irrigating farm crops and orchards is often preferable to the ordinary ditch irrigation where it is necessary to save water, particularly on sandy or steeply sloping lands in cultivated crops.

This is one conclusion in a report of the U. S. Bureau of Reclamation on sprinkler irrigation. Copies may be obtained from the U. S. Government Printing Office. It is a comprehensive report, covering present sprinkler systems in use, particularly in the Northwest and in Texas.

The sprinkler system applies water from overhead from perforated pipes, or from rotary sprinklers much like those long used on lawns. Its application to commercial crops has been rapidly increasing during the past decade or so. Its advantage is that the water is applied evenly over the entire surface, gradually sinking into the soil to the depths required to be available to plant roots.

In ordinary commercial irrigation, water is distributed to the fields where needed by open ditches, and then permitted to flow between crop rows usually at right angles to the ditch. Soils near the ditch absorb an oversupply of water, while soil farther away may get too little. Much water also is lost by sinking deep in the soil where it is of little immediate value to ordinary crops.

The sprinkler system brings into irrigated crop production land where the ditch system can not be used because of terrain. Also no land is utilized for ditches, being therefore available for crops. The report points out economic problems that must be taken into consideration in determining which system to use. On land where either could be used, cost is the principal factor.

Science News Letter, September 10, 1949

IN SCIENCE

GENERAL SCIENCE

Plan Science Organization For Marshall-Aided Areas

► BEGINNING steps have been taken toward a scientific research organization for backing up the economic cooperation of Western European countries.

Technological investigations upon developments in coal, peat, tide power, wind power, and other large and wide-spread industrial applications of science are planned.

Organized under the chairmanship of Dr. Alexander King of the British government science office in London, the technical cooperation working party is a part of the OEEC, the organization for European economic cooperation of the Western European countries aided by the Marshall Plan.

The first actual international investigation is already underway in Holland, where a blast furnace is being devoted to a study of the luminosity of flames in the furnace in which oxygen-enriched blast is being used. British, Swedish and French engineers are working with Dutch specialists and facilities in this case.

Making liquid fuel out of coal and gas out of peat are high on the list of projects planned for inquiry.

Science News Letter, September 10, 1949

ASTRONOMY

Second Largest Telescope Ahead of Schedule

► THE second largest telescope in the world, being built at the University of California's Lick Observatory at Mount Hamilton, Calif., will go into operation two years ahead of schedule. Purchase of a 120-inch mirror cast in 1933 to test the design for the giant 200-inch Palomar telescope makes this possible.

Lick's new 120-inch mirror is now in a warehouse in San Jose near there, after a 400-mile truck trip from Pasadena. It will remain in the warehouse until the dome at Lick Observatory is completed. The 120-inch mirror was purchased from the California Institute of Technology, but has never been used because of a change in test procedure there.

The original design for the Lick telescope called for the conventional solid disk mirror. Recent tests at Palomar, proving beyond doubt the practicality of the new 200-inch design, led University of California astronomers to purchase the 120-inch test mirror of the same design.

Science News Letter, September 10, 1949

THE FIELDS

AERONAUTICS

Freezing Process Aids Removal of Plane Blades

► THEY are freezing them off in England: that is, they are removing airplane propeller wood blades from their steel hubs by a low temperature process.

These laminated wood blades are screwed into what is called a steel ferrule, by which they are fastened to the propeller boss in the engine shaft, and are tightly fastened with a special cement. Because great force is required to break the cement in trying to unscrew the blades, an easier process was desired.

Frigidaire engineers in Portsmouth, England, are responsible for the new process, according to Frigidaire Division of General Motors, Dayton, Ohio. Their suggestions were made to the Air Screw Company, of Weybridge, which has many occasions to remove wood blades from their ferrules. The new process is based on the fact that wood contracts about three times as much as steel when temperatures are reduced.

A special cooling cabinet is used. Its well-insulated chamber will hold eight propellers at a time. Low temperature is provided by a one horse-power air-cooled compressor. Between six and eight hours are required for the majority of blades to shrink sufficiently to allow them to be easily removed from their hubs.

Science News Letter, September 10, 1949

ANIMAL HUSBANDRY

Pluck Molting Rabbits For Best Wool Is Advice

► HERE is a tip for those who raise rabbits for wool: most top-grade wool is obtained from an Angora rabbit by plucking the animal when it is molting.

There is no significant difference between the total amounts of wool obtained during a year by plucking, clipping or shearing, irrespective of whether it is harvested every 10 weeks or at the time of molt. But in the production of top-quality wool, the method and time of harvest do make a difference, experiments conducted by the U. S. Department of Agriculture at Beltsville, Md., show.

When the wool is clipped or sheared every 10 weeks, only about 35% is top-quality wool; when the wool is harvested during molting season, about 55% is of No. 1 grade, Dr. Thora Plitt Hardy and Ethel H. Dolnick of the Bureau of Animal Industry found. When the wool is plucked, however, the percentage of top-grade wool is the highest of all.

The wool, found to grow irregularly, averages about .027 inch per day.

Irrespective of these findings, however, breeders may still prefer to clip or shear Angora rabbits so as to save time in harvesting the wool. Or they may still harvest it at 10-week intervals rather than trouble to examine the rabbits periodically to discover the exact time of molt.

Science News Letter, September 10, 1949

BIOCHEMISTRY

Work on Isolating Fatty Chemical Present in Cancer

► FIRST steps toward isolating in pure form a fatty chemical believed involved in cancer development and possibly indicating a germ or virus cause of cancer have been taken by Drs. N. Waterman and L. C. Ebeling at the Netherland Cancer Institute at Amsterdam.

Reporting their progress in the journal, SCIENCE (Sept. 2), they state that the chemical is an antigen discovered by other scientists some years ago. The antigen was previously reported able to call up in rabbits' bodies antibodies specific against it, acting in this respect like a germ or virus.

The Amsterdam scientists report their work in the hope that it may help others to determine the chemical nature of the fatty substance. If this is done, they state that they believe "an important piece of work will have been performed."

Science News Letter, September 10, 1949

CHEMISTRY

Permanent Flame-Proofing Doesn't Affect Fabric

► COTTON and rayon fabrics which won't burst into flames when lighted, yet look the same and feel the same, should be available within the next three months.

No matter how many times these materials are washed at home or cleaned, they can now be made to stay fireproof when treated with a new chemical announced by the DuPont Company.

The exact chemical composition of the compound is being kept a secret because patents have not yet been issued, but it is known that the chemical is a solution of titanium and antimony salts.

Titanium dioxide and titanium hydroxide, and antimony oxide and antimony oxychloride are compounds which are known to produce a flame-proofing effect.

It is claimed that the compound reacts chemically with the molecule of cellulose in rayon or cotton, but does not change the size of the fiber. Nor does it make the fabric stiff or hard.

Expected to be particularly good for curtains and bedspreads, dangerous fire hazards in the home, the new discovery is trade-named "Erifon."

Science News Letter, September 10, 1949

PSYCHOLOGY

Brain Waves Found Linked To Voluntary Movements

► A LINK has been found between the alpha rhythm brain waves and voluntary muscular movements in experiments conducted at the Neuropsychiatric Research Center, Whitchurch Hospital, Cardiff, and reported in the scientific journal, NATURE (Aug. 27).

The alpha rhythms are electric signals broadcast by the brain cells themselves while the body is at rest. The rhythm is ordinarily interrupted by use of the eyes in vision.

Simultaneous recordings were made of the alpha rhythm and of the opening of the eye in response to an auditory signal. It was found that the eye tends to open at the time of the peak of the alpha rhythm which occurs about every tenth of a second.

Similar results were obtained for other voluntary movements.

These results indicate that voluntary muscular movements are influenced by the electrical rhythms of the brain, is the conclusion of the investigators, Drs. G. O. Kibbler, J. L. Boreham and D. Richter.

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PHYSIOLOGY

Height Children Will Grow To Is Predicted

► HOW tall a growing child will be when he is grown up is now being predicted to within a quarter of an inch by scientists at Stanford University.

The predictions, useful in treating abnormal growth and for reassuring parents and youngsters, are based on the relation between human growth patterns and the development, or maturation, of the skeleton.

Sex, age in years and present height are considered in relation to the maturation of the skeleton. When this last is within one year of the age in years, the height prediction is given by tables developed by Dr. Nancy Bayley of the university's school of medicine.

She and Dr. Leona M. Bayer of the school of medicine report eight cases in which the adult heights came out to within one-quarter of an inch of the heights predicted while the patients were children.

The doctors emphasize in their report to the Stanford Medical Bulletin that the predictions are only a statement of potential not a promise. When growth or maturation or both are disturbed, the potential may never be realized.

The height predictions are useful in cases of retarded or accelerated growth for telling whether treatment by diet, thyroid extract and male or female hormones is being effective.

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