

MYCOLOGY

Rare Fungus Found to Feed Upon Its Own Kindred

THE OLD saying about fleas having lesser fleas ad infinitum has had a recent confirmation in the researches of Theodore T. Ayres, botanical investigator at Harvard University.

Dealing with a rare, mold-like fungus which had hitherto been seen but four times, Mr. Ayres discovered that it was parasitic and that it chose as victims only fungi of the same general kind as itself. When he tested it against a long list of fungi distantly related to it in the system of fungus classification, it was unable to attack them. It showed no preference as to the sex of its victims but parasitized male and female strains with equal avidity. A remarkable alteration in the susceptibility of its hosts was found to take place, however, when they were grown on different nutrient materials.

Science News Letter, July 20, 1935

ASTRONOMY

Altair, Bigger Than Sun, Turns Faster Than Earth

EXCEEDING the sun in diameter by 40 per cent., and containing twice as much material, the great star Altair nevertheless spins on its axis 120 times faster than the sun, and four times faster even than our tiny and relatively agile planet, the earth. Its rotational period is six hours, as compared with 24 for the earth, and approximately a month for the sun.

This was one of the astronomical facts presented before the meeting of the American Association for the Advancement of Science, by Dr. Otto Struve, director of the Yerkes Observatory of the University of Chicago, located at Williams Bay, Wis.

Rotational speeds of the stars are one important class of astronomical data that can be measured by careful calculations based on the behavior of the bright lines of their spectra, or the artificial rainbows formed of their light when it is broken up by a prism or finely ruled grating. Some of the stars show rotational speeds as high as 300 kilometers (186.4 miles) a second at the equator; others apparently do not rotate at all.

"Another interesting result," continued Dr. Struve "was obtained from the study of the lines of hydrogen and of helium in the hottest stars. Laboratory investigations have shown that these lines are broadened in the presence

of electrical charges. From their appearance in the stars the conclusion was drawn that electrical charges of the order of 10,000 volts per centimeter are present. It is believed that these electrical charges are caused by free electrons and ions and not by surface features such as spots, prominences, etc.

"In the so-called giant stars, the atmospheres of which have very low pressures, the electric charges are almost absent. In fact, it is now possible from the appearance of the lines to infer the pressures in the stars and hence to derive their luminosities and distances."

Science News Letter, July 20, 1935

HOME ECONOMICS

Women of Nations Discuss Lack of Science in Home

WHAT is wrong with household management in France, England, America, and other parts of the world was discussed at the International Congress for Scientific Management, week of July 15.

A French peasant woman takes so many needless steps in her daily chores that in forty years she has walked a third of the way round the world. Deploring this enormous waste of energy, Mlle. Paulette Bernege, president of the French Section of Domestic Economy, declared that household equipment on French farms is out of date. No planning exists for arrangement of the peasant home, barns, or outhouses.

In England houses are still being built with kitchens that look deceptively convenient, but that have such "atrocities" as unventilated larders, cupboards that all have to be reached by standing on chairs, hot-water cylinders exposed, and other antiquated devices, said a report from the British Women's Committee, headed by Mrs. Darcy Braddell. The committee advocated recognizing housework as "a most important industry," and taking active steps to make scientific working possible in the home.

Comparatively few efficiency studies of household tasks have been made in the United States, but widespread interest in this field is now shown, said Grace E. Frysinger, of the U. S. Department of Agriculture. Miss Frysinger cited one experiment in a farm kitchen, in which a housewife was shown how she could reduce her steps from 143 to 24, in making a coffee cake.

The discussions at the congress are aimed toward showing "how far scientific management in the home can contribute to the raising of the standard of life."

Science News Letter, July 20, 1935

IN SCIEN

GENERAL SCIENCE

Dr. Tolman Heads Pacific Division of A.A.A.S.

PROF. Richard Chace Tolman, professor of mathematical physics at the California Institute of Technology, Pasadena, Calif., was elected president of the Pacific Division of the American Association for the Advancement of Science, it was announced as executive sessions were concluded.

Prof. Tolman is an authority on statistical mechanics, cosmology and the applications of relativity to the science of thermodynamics.

Science News Letter, July 20, 1935

MEDICINE

Old-Fashioned Iron Pills Preferred for Anemia

IRON, one of the oldest medicines in the world, is still one of the most dependable for certain types of anemia, Dr. Walter A. Bloedorn of George Washington Medical School, Washington, D. C., told the American Association for the Advancement of Science.

Prescriptions as far back as 1600 B.C. required the use of iron, he said, and it has been used in hundreds of formulae since. Blaud's pills, first used over a century ago, are still a standard remedy for certain types of anemia.

The human body is not at all efficient for absorbing and using iron, Dr. Bloedorn said, so that relatively enormous doses have to be given to give the patient the needed benefits.

However, there is apparently no danger in the use of iron; it seems to be impossible to administer an overdose.

Also discussing anemia in its various phases was the Nobel Prize winner in medicine, Dr. William P. Murphy, of the Peter Bent Brigham Hospital, Boston, Mass. Dr. Murphy described the new concentrated liver extract so potent that one cubic centimeter, prepared from an ordinary-sized slice of liver, has the anemia-preventing power of eleven pounds of fresh liver eaten in the ordinary way.

Science News Letter, July 20, 1935

CE FIELDS

PLANT PHYSIOLOGY

Inaudible Sound Waves Speed Growth of Potatoes

POTATOES have been stimulated into earlier sprouting and blossoming, and larger tuber yields at maturity, by treating the seed pieces with "supersonic" waves—sound waves of such high frequency that they are far beyond the range of audibility.

The experiments were performed at the high-frequency laboratory of the State X-Ray Institute in Moscow. The waves were produced by an electrically excited quartz crystal, operating in an oil bath, at a frequency stated to be about 400 million cycles a second. The uppermost limit of audible sound waves is only about 20,000 cycles a second.

Small numbers of potato tubers were exposed, in water, to these waves, and then planted after a short period in storage. The "sonized" plants sprouted and blossomed several days earlier than "control" specimens grown from untreated tubers, and their yield was increased by from 64 to 69 per cent.

The experiments were performed under laboratory conditions only. Larger-scale tests under field conditions have not yet been undertaken.

The first investigations of the biological effects of supersonic waves were carried on in the United States by Prof. R. W. Wood of the Johns Hopkins University and A. L. Loomis, in the latter's private laboratory at Tuxedo Park, N. Y.

Science News Letter, July 20, 1935

PHOTOGRAPHY

Sheets of Sugar Replace Window Glass in Comedies

WHEN the fat cook in the movies kicks the miscreant waiter through the kitchen window pane don't worry. The waiter won't cut himself on broken glass.

The alarming crash of shattered windows attending the slapstick drama is really not a tragedy of glass at all. It is instead a smash of ordinary sugar. A.

George Stern, consulting chemist for the cinema industry, entertained the Los Angeles section of the American Chemical Society with an exhibition of the behavior of common sugar which had been drawn by a special process into a glass-like sheet.

Following Mr. Stern's example, the star movie comedian does not hesitate to thrust his precious person through a sugar window pane. His safety lies in the fact that the hardness, and thus the sharpness, of sugar on the mineralogist's scale is several points below that of glass.

Unfortunately, sugar while photographically satisfactory, has the bad habit of absorbing water from the atmosphere. This difficulty has been obviated, according to Mr. Stern, by lacquering of the sugar window. In this way it is possible to obtain a pane which might be even superior to common glass from the camera viewpoint. Ordinary glass often gives excessive and unnatural reflections in a photograph, but a pane lacquered with a preparation of properly regulated dullness of finish may give exactly the pictorial effect which is desired.

Science News Letter, July 20, 1935

METALLURGY

Non-Tarnishing Metallic Fabrics Announced

A NEW material making possible non-tarnishable metallic fabrics is announced by E. I. du Pont de Nemours & Company. It is made of metallized slit cellulose film, and is manufactured by depositing a non-tarnishable metallic finish on one side of a sheet of Cellophane.

Two such sheets are then laminated together, so that each side is metallic coated, and added strength is given to the stock. This sheet is then slit to narrow yarn widths, which then may be woven into a fabric in this form with rayon, silk, wool or cotton.

The new material was designed primarily for decorative use but its adaptation to other purposes has been so satisfactory that it is being employed also in the fashion field. The fabric is light in weight, flexible and drapes well. Various forms of it are possible, thus making it conform to current trends in women's fashions. For example, a simple flat weave can be made for evening wear and a closely woven fabric has been introduced for such articles as evening bags and footwear.

Science News Letter, July 20, 1935

METEOROLOGY

Boiling Clouds Warn Of "Bad Spots" For Aircraft

See Front Cover

CLLOUDS as a rule are matters of no great concern to airmen; if they cannot climb over them or fly under, they depend on radio from ground stations to help them fly it blind. But when a pilot sees a "mess o' caulitower" cooking on the horizon, he seeks a way around. For these billowing masses of black-and-white, that blossom on hot summer afternoons just before a thundershower, show by the rapid piling-up of their tops where the dangerous vertical air currents are, that can toss an airplane like a leaf or break a Zeppelin in two like a hollow sack.

The photograph on the front cover, showing a typically turbulent sky over the prairie region, was taken by Cornelia Clarke.

Science News Letter, July 20, 1935

MEDICINE

Use Chemical to Detect Brain Tumors by X-Ray

A CHEMICAL substance, thorium dioxide, may be used instead of air to make the brain visible under X-rays and thus to detect brain tumors.

Results of two years' experience with the substance were reported by Dr. Walter Freeman of Washington, D. C., at the joint meeting of the American and Canadian Medical Associations.

The chemical is injected into the brain, as air has been for this diagnostic purpose. Thorium dioxide is opaque to X-rays and has been used recently in the same way to make other parts of the body visible on the X-ray plates. With this chemical Dr. Freeman said he was able to see parts of the brain that have probably never before been reproduced in X-ray films after air injection.

The thorium dioxide mixes easily with the natural fluid of the brain so that it diffuses through the cavities. Four hours after injection, it can no longer be detected by X-ray. Most important advantage is the fact that the chemical does not disturb the normal pressure relationships in the brain.

Thorium dioxide, however, may prove to have more disadvantages than advantages, Dr. Freeman pointed out. It is a radioactive substance and the danger resulting from its storage in the body has not yet been determined.

Science News Letter, July 20, 1935