BACTERIOLOGY

Germs May Be Means For More Abundant Living

➤ GERMS, which most of us automatically associate with disease and death, are becoming the means for more abundant living, Prof. R. E. Buchanan of Iowa State College declared in an address before the meeting of the American Association for the Advancement of Science.

New discoveries in bacterial beneficence are being made in a score of fronts in the nutritional field, Prof. Buchanan indicated. It has been found, for example, that microorganisms in the cow's stomach not only aid in the digestion of the fodder she eats but are able to take over compounds of nitrogen hitherto considered no good for animal food, and convert them into materials which the cow in turn synthesizes into milk and meat. As much as a fifth of the cow's protein production can be taken care of in this way, the speaker said.

Friendly germs, producing compounds related to penicillin, may prove the salvation of some of our crop plants from fungus diseases, Prof. Buchanan continued. The whole new technique of antibiotics, of which penicillin use is just one special case, is based on the chemical enmity that exists between germ and germ, mold and mold, he pointed out; and there is good reason to expect that we can take advantage of this for the protection of our plants as well as our farm animals and ourselves.

Science News Letter, September 23, 1944

ZOOLOGY

Fork-Tailed Lizards Are Perfectly Normal

➤ IF YOU see a lizard with a forked tail, or a chameleon with a green body and a brown tail, don't blame it on unpedigreed wartime beverages. The little reptiles are perfectly normal; they've only had the misfortune to lose parts of their tails and have grown new ones. Some of the color changes to be found in lizards with regrown tails have been described by Prof. F. H. Wilson of Tulane University. His particular pet is the little lizard commonly known as the American chameleon, a common species along the Gulf Coast. Zoologists call it *Anolis carolinensis*.

Like many other lizards, it can break off its tail, at definite segmenting points, if it is grabbed by a hungry bird or beast. It loses its tail but saves its life. Then it grows a new tail.

Sometimes the stimulus to grow a new tail comes at two spots on the stump of the old one. It is then that a forked tail develops.

The chameleon can change its color, from green to brown and vice versa, to blend itself into its background and so possibly escape greedy attention. But after it has grown a new tail it is unable for a time to change its color from green to brown. "It is an amazing sight," Prof. Wilson commented, "to see a green lizard running around with a brown tail."

Science News Letter, September 23, 1944

CHEMISTRY

Use of Lye Now Speeds Peeling of Potatoes

➤ POTATOES can be peeled at the rate of more than 18,000 pounds per hour when lye is used to do the job, A. H. Copeland, Jr., R. M. Chatters and R. D. Kerwin, of the research laboratories of the Diamond Alkali Company at Painesville, Ohio, reported at the meeting of the American Chemical Society.

The lye peeling method is now being widely used for other vegetables and fruit for the armed services. Besides the saving in labor, new medicinals, plastic ingredients and valuable oils have been discovered in peels and seeds hitherto wasted.

Science News Letter, September 23, 1944

CHEMISTRY

Chlorine Dioxide Purifies Public Drinking Water

➤ THE removal of tastes and odors in public water supply systems caused by industrial wastes may now be accomplished in a new process in which chlorine dioxide is used, Dr. G. P. Vincent of the Mathieson Alkali Works told the American Chemical Society meeting.

The water, he said, is first treated with chlorine to kill germs, and then with chlorine dioxide to remove chlorphenol taste and odor. In tests by the Niagara Falls, N. Y., water department, it was demonstrated over a period of several months that water too contaminated for the usual chlorine treatment was successfully purified by the new process.

The chlorine dioxide is made by treating sodium chlorite with chlorine water, using the customary chlorinating apparatus at the filter plant. It is claimed that the new process is not only much more efficient than ordinary chlorination, but is also more economical and simpler to operate.

Science News Letter, September 23, 1944

IN SCIEN

ZOOLOGY

Three Bengal Tiger Cubs Born at Washington Zoo

See Front Cover

➤ THE TINY Bengal tiger cubs shown on the front cover of this SCIENCE NEWS LETTER were born on August 28 at the National Zoological Park in Washington, D. C. When Fremont Davis, Science Service staff photographer, took the picture, the cubs were exactly one week old. They weighed between three and one-half and four pounds apiece at birth. The mother tiger had to be removed before this picture was taken. Litters usually run from one to five babies, so these three make a nice-sized family. The triplets are doing nicely and the mother is taking considerable interest in her babies. This is the first time that she has had a proper maternal solicitude for her family.

Science News Letter, September 23, 1944

CHEMISTRY

Quantity of Methane Shows Constitution of Coal

➤ BY STUDYING the quantity of methane, a major constituent of coal gas, evolved on carbonization of a wide variety of coals, a new approach to the constitution of coal has been discovered, declared Dr. Corliss R. Kinney of the Pennsylvania State College at the division of Gas and Fuel Chemistry of the American Chemical Society meeting.

Very little is known about the chemical constitution of coal, he said, in spite of its tremendous importance, not only as a source of heat and power, but also as a vast storehouse of organic chemicals.

"A comparison of the yields of methane from coal, as well as from peat, the first step in the formation of coal, with those from cellulose, the pentosans, and lignin, the main components of the vegetation from which peat and coal are made," he said, "indicates that lignin is responsible for the characteristic methane yielding property of coal. From this it appears that the constitution of coal is related to the structure of lignin. The coalification process is chemically a process of deoxygenation and does not affect the methane yielding carbon skeleton."

Science News Letter, September 23, 1944

CE FIELDS

PUBLIC HEALTH

Polio has Declined Throughout Nation

➤ INFANTILE paralysis cases declined throughout the nation during the week ending Sept. 9, latest on which figures are available. From the figures reported to the U. S. Public Health Service, it appears that the worst of the epidemic may be over. This is the first week to show a decrease in cases since the outbreak started early in the summer in North Carolina.

The total for the week, exclusive of Nebraska, was 1,487. Nebraska reported seven cases the previous week, so the figure from that state will probably not change the total very much. The previous week's total was over 1,690.

Almost all states reported a drop in cases. In Massachusetts, Illinois, Delaware, Minnesota, Iowa, and West Virginia the trend still was upward.

Science News Letter, September 23, 1944

CHEMISTRY

Waste of Our Corn Crop Could Produce Alcohol

➤ SEVENTY million tons of wasted corn fodder or stover growth each year with America's corn grain could supply the nation with great quantities of industrial alcohol and fiber for the production of paper, declared Dr. H. C. Gore of New York City, at the meeting of the American Chemical Society.

It can be readily shown, he said, that at harvest time, corn stalks, composing about 40% on the dry weight of the stover, contain in many instances 25% upwards of readily fermentable sugar, and 30% and over of fiber of excellent quality for use in making paper and paper products.

It is found, he continued, that the method of analysis used in the study of sugar cane and sorghum cane fit very well in the analysis of corn stalks.

Methods have been developed for reducing the stalks to a finely shredded condition from which the juice can be readily obtained by pressing.

Corn stalk juice has a grassy taste, he stated, and throws out a heavy green coagulum when heated. It will yield an excellent cooking syrup upon evaporation. It could be readily produced in great quantities either by the use of roller mills, or, as he found in his own work, by use of cane reducing machines followed by pressing by the rack and cloth method.

Science News Letter, September 23, 1944

MANUFACTURING

Commercial Standards For Silver Jewelry Proposed

➤ A COMMERCIAL standard for silver, established by the National Bureau of Standards, requires that quality marks, such as "silver," "solid silver" or "sterling silver" on jewelry and novelties made from the metal, be accompanied by the registered trademark or name of the manufacturer or seller.

The commercial standard was established so that the quality mark usage and practice might become a matter of public record and acceptance on a nation-wide basis.

Science News Letter, September 23, 1944

CHEMISTRY

Active Carbon Improves Taste of Drinking water

➤ ACTIVE CARBON, a product originally developed to protect soldiers against war gases, is now successfully used in over 1,200 public water supply systems in the United States to improve the palatability of the water by removing all tastes and odors, stated Dr. John W. Hassler, of the West Virginia Pulp and Paper Company, speaking at the American Chemical Society meeting in New York City.

The use of chlorine to disinfect water, he said, has practically eliminated typhoid fever and other water-borne diseases, but does not remove tastes and odors, and, in fact, sometimes intensifies them. The public often judges the purity and safety of a food or water by its taste and smell, and if the public water supply is not palatable will use water from a spring or well which may not always be bacteriologically safe.

The method of applying the active carbon is quite simple, he said, just add enough to remove all tastes and odors. There are occasional conditions which require special study. It has not been found practical to employ chemical methods of analysis to investigate these taste and odor problems, and ordinary odor tests are not sufficiently sensitive. A "Threshold Odor Test," developed by Charles Spaulding, enables these problems to be solved, he states, and is now used extensively.

Science News Letter, September 23, 1944

PSYCHOLOGY

Liking for Candidate Follows Decision of Vote

➤ DO YOU vote for a candidate because you like him, or do you like him because you have already made up your mind to vote for him?

Most voters would answer "yes" to the first question and "no" to the second —perhaps a little indignantly. But the probabilities are rather strong that your liking follows your voting intention, Dr. Paul F. Lazarsfeld, Columbia University psychologist, demonstrated before the meeting of the American Association for the Advancement of Science.

Dr. Lazarsfeld arrived at his conclusion after an analysis of voter preference and their changes polled during the 1940 campaign. He found that voters who disliked Willkie at the beginning, but were going to vote for him anyway, for reasons of party loyalty or other considerations, got over their grouch and declared a liking for the big Indianian when a second poll was taken later on. A similar switch in feeling occured on the part of loyal Democrats who disliked Roosevelt personally at the beginning of the campaign.

Science News Letter, September 23, 1944

ENGINEERING

Underwater Welding Used To Repair Holes in Ships

➤ PATCHING of large holes below the waterline of warships is now possible by a new method of underwater electric welding. This new method speeds up the time required to get the battleship back into action by making it unnecessary to put the ship in a drydock.

The new underwater welding process was developed by Prof. Khrenov of the Moscow Transport Electromechanical Engineering Institute. A steel plate is first cut to fit over the hole in the side of the ship. This is lowered below the waterline and welded into place with a steel electrode covered with a special waterproof grease.

The electric arc formed has a temperature of about 6,000 degrees Centigrade. This intense heat disintegrates the water into hydrogen and oxygen gases forming a continuous stream of bubbles which blanket the spot being welded, keeping the water out.

The process is being used extensively by Soviet seamen. A special technical training motion picture has been released demonstrating the new process.

Science News Letter, September 23, 1944