

AGRICULTURE

Colchicine Used To Create New Perennial Forage Crop

A NEW perennial forage crop that will flourish in Canada's western drought areas is expected to result from research at the Canadian National Research Council's Ottawa laboratories.

A sterile hybrid between wheats and wheat grasses was made into a vigorous, fertile plant by use of the fruitful trick of doubling the number of chromosomes, the bearers of heredity, by means of the chemical, colchicine. This same method used on poplar, spruce, pine and basswood trees has produced several apparently new kinds, practically promising.

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ARCHAEOLOGY

Japan to Mark 2600th Birthday of Empire

JAPAN may be fighting in China and battling over trade with the United States, but that nation will take time out to celebrate the 2,600th birthday of the Japanese Empire, February 11.

To Americans facing this year the 400th anniversary of Coronado's southwest explorations and De Soto's southeast discoveries, and perplexed to pin down many of the historic details, a 2,600-year event is hard to imagine.

Japanese themselves have to take the date on faith. Earliest recorded history in Japan started in the eighth century A. D. Chroniclers then delved into tradition and boldly wrote that Japan's first emperor was enthroned in 660 B. C. and precisely on February 11. This monarch entitled Jimmu was descended from the gods, they wrote; he led his own armies in conquest personally; planted his capital at Kyoto; lived to be 127 or 137 years old; was buried in a double-mound tomb with a moat around it. Modern archaeologists have examined similar tombs of ancient Japan. A mound on the plains of Yamato where Jimmu is said to have been buried is now marked by a mausoleum.

Japanese proudly claim that the dynasty founded by this first emperor is still unbroken, rating the present Emperor Hirohito as 124th in line. To insure a successor to the throne—which must be a male—early emperors had numerous wives and it became customary for an emperor to select the male member of his house who would succeed him, as the next Son of Heaven.

Modern Japanese are made conscious

of this lofty and venerable background of their Emperor by holding public holiday on Jimmu's supposed date of enthronement, which they have done since 1889. This year, says the Japanese Embassy, not only February 11, but also November 10, will be celebration days, to mark the striking, round-number date of the anniversary. Special, and extra, events of November 10 will include a very modern note—the appearance of Emperor Hirohito in front of the palace to review Boy Scouts of Japan.

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BIOLOGY

To Sail 40,000 Miles Among South Sea Islands

BOUND for a 40,000-mile, two-year cruise among the South Sea islands, the three-masted auxiliary schooner "Director II" sailed from New York on Thursday, Feb. 1, bearing the Second Fahnstock Expedition. The expedition will collect botanical, zoological and geological specimens, and make recordings of native ceremonials among the peoples of the islands to be visited.

Master of the ship is Sheridan Fahnstock, who navigated the first expedition's smaller craft, "Director I." In charge of scientific work is his brother, Bruce Fahnstock. They are accompanied by their mother, Mrs. Bruce Fahnstock, Sr., and a small group of scientists from the American Museum of Natural History, radio technicians, a photographer, etc.

The expedition carries a plane specially constructed for quick assembling and dismantling, which will be used for scouting and mapping and for carrying supplies to parties ashore at inland bases. The plane will also be equipped with radio for communication with the ship at all times, as well as a homing device for safety.

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MEDICINE

Silver Armor Provides An Aid to the Surgeon

SILVER armor, a net of tiny silver-plated rings, is an aid to surgery successfully used in Canada. A Winnipeg surgery confronted with an abdominal wall that was not sufficiently strong reinforced it with this metallic net. It did its job satisfactorily and allowed the patient, a housewife, to take up her regular daily household duties. (*Canadian Medical Association Journal, January*)

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IN SCIEN

NUTRITION

War May Bring Return Of Once Popular Food

WILL the war cause a return to a food plant widely used in Europe before the eighteenth-century popularization of potatoes? The Jerusalem artichoke, tuberous-rooted relative of sunflower, may come back. When U-boats threatened to starve out England, back in 1916-17, scientists tried out various crops to see which would produce maximum of food per acre. Jerusalem artichokes won. Germans and Britons alike are now urged to eat lots of potatoes, to spare wheat reserves, but maybe the older tuber will assert itself yet.

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CHEMISTRY—AGRICULTURE

Gas from Apples Removes Leaves from Rose Bushes

ARTIFICIAL autumn can be brought to rose bushes, causing them to shed their leaves in a few days, by locking them up in the same room with apples, it has been discovered at Oregon State College by J. A. Milbrath, Elmer Hansen and Prof. Henry Hartman. (*Science, Jan. 26.*)

Ordinarily such defoliation would be undesirable, but when large numbers of field-grown rose bushes are being prepared for shipment to market it is necessary to rid them of their leaves, to cut down water loss through evaporation. Hand plucking is tedious and expensive, a thorny job at best.

By putting the bushes in a tightly closed, moderately heated room, with one bushel of apples to every 300 or 400 cubic feet of space, they can be caused to shed their leaves in about four days. The apples produce this effect because they give off small quantities of ethylene, which is also a common constituent of natural gas. The defoliating effect of ethylene on plants has long been known, but it has not hitherto been put to any practical use.

Large-scale results, involving the preparation of more than 200,000 rose bushes, are reported.

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CE FIELDS

MEDICINE

Effect of Benzedrine Due to Action on Enzyme

BENZEDRINE, valuable remedy for narcolepsy, owes its sleep-banishing effect to its action on a body enzyme or ferment. Narcolepsy is a condition in which the victims, like Dickens' fat boy, are seized at intervals with an uncontrollable desire for sleep.

Discovery of the action of benzedrine on a body enzyme and of the chemical structure responsible for the "awakening effect" of this and similar drugs is reported by Dr. Hermann Blaschko, of Cambridge University's physiological laboratory. (*Nature*, Jan. 6.)

The sleep-banishing effect of benzedrine is due to the inhibitor action of this chemical and its derivatives on amine oxidase, Dr. Blaschko has found.

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ICHTHYOLOGY

Two-Headed Trout Shown at American Museum

See Front Cover

CUTHBERT THE GREAT, two-headed trout and largest fish of his class on record, has come to the American Museum of Natural History to stay. Cuthbert swims no more; he is only a preserved specimen now, but even so he is expected to attract crowds of visitors. He is pictured on the front cover of this week's SCIENCE NEWS LETTER.

Cuthbert the Great began his career as a tiny two-headed embryo fish in the Mount Shasta Fish Hatchery in California. Two-headed embryos are fairly frequent in hatcheries, but none ever survive under natural conditions. That Cuthbert lived to adult trouthood was due entirely to the care lavished upon him by a member of the hatchery staff, Elvin C. Anderson, who adopted him as an infant and brought him up "by hand."

Having two wide mouths to eat with, and only one stomach to feed, pampered Cuthbert naturally grew very fat. "By the time he was five years old, Cuthbert was the fattest fish I ever saw," states Dr. E. W. Gudger of the Ameri-

can Museum staff. "He even had a ring, or groove, in each of his two back-of-the-neck regions such as one finds on the neck of a fat man."

Cuthbert finally attained a length of eight inches, and a girth of seven, and he weighed eight ounces. He lived to be seven years old, a ripe old age for a trout.

An X-ray photograph discloses a short section of spinal column leading to each of the two heads, with a sort of lateral curvature of the common spine a short distance back of the point of union. In other respects the after part of the skeleton appears normal.

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ZOOLOGY

Swimming Pool of Liner To Have Flipped Bathers

ANTARCTIC birds and animals that require plenty of swimming water for comfort will have it for once, as a consignment from the Byrd Antarctic Expedition for the National Zoological Park prepares to move northward under the care of Keeper Malcolm Davis. The swimming pool of the one-time luxury liner *Santa Maria*, now in freight service out of South American west coast ports, will be populated with penguins, a sea leopard and other flippered fur-and-feather folk from the coasts of Antarctica instead of the bevy of languid bathing beauties who once departed themselves there.

Availability of plenty of water, and probably cakes of ice from the steamer's refrigerating plant to cool it, will help greatly in getting the heat-sensitive Antarctic animals through the troublesome tropics. This will be particularly the case with Mr. Davis' prize passenger, the ten-foot sea leopard, spotted giant relative of seals and sea lions and one of the rarest of animals ever to be seen in zoological gardens.

Among the large collection of penguins, the most distinguished is one specimen of the majestic Emperor penguin, a dignified bird more than half as tall as an average man. Most of the rest are the polite little Adélie penguins, delight of Antarctic explorers and news-reel fans.

Mr. Davis will arrive at Valparaiso on Feb. 15 with his Polar Noah's Ark, on the Byrd Expedition's supply ship *North Star*. Transfer to the *Santa Maria* will be made as quickly as possible, and the latter ship will start northward on Feb. 23.

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RADIO

FM for Police Use Given More Room on Air

IN THE realm of the radio ultra frequencies, where the meters almost meet the centimeters, frequency modulation — "staticless" radio — creation of pioneering Maj. Edwin H. Armstrong, is to get a little more chance at the radio ether.

The Federal Communications Commission has announced that it will entertain applications for experimental stations for such services as police, aviation, emergency services, etc. to use FM instead of amplitude modulation on wave bands above 30,000 kilocycles, already assigned for that use. It is a fertile field for this new kind of radio for there are a thousand police radio systems with more than 6,000 transmitters.

The use of FM for broadcasting, potentially one of the most exciting possibilities for the future, causing the regular broadcasters to bestir themselves and take stock, is to have hearings of the FCC beginning on Feb. 28.

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PHYSIOLOGY

British Nutrition Expert Gives Potato a Hand

ADVICE to Britishers in wartime from Sir John Boyd Orr, expert on nutrition, leader in the League of Nations Committee on nutrition, gives the lowly potato a hand:

After milk (and Britain has enough milk to drink a fifth more) and vegetables (and Sir John says eat twice as much) the most important food produced in the tight little isles is the potato. It is a protective food, the main source of one of the vitamins. In England an average of only 4 pounds of potatoes per week per person are eaten. Some countries eat twice as much.

"Some women are afraid to eat potatoes because they think they are fattening," remarks Sir John. "This is nonsense: 1 lb. of bread and butter is more fattening than 4 lb. of potatoes. If you think you are too fat, cut out the bread and butter and eat potatoes and vegetables. In a time of threatened food shortage, the potato is by far the most important crop, because, in addition to its special health value, it gives the highest yield of food per acre. An acre of potatoes gives twice as much food as an acre of wheat."

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