

## CHEMISTRY

**Chemicals Replace Hoe, Increase U. S. Crops 40%**

► **CHEMICAL AGRICULTURE** has increased by about 40% U. S. crop production during the last five years compared with the preceding five years, Dr. Frank App, research director of Seabrook Farming Corp., Bridgeton, N. J., told the American Chemical Society meeting in New York.

By applying knowledge of chemical control of insects, diseases and weeds, 120,000,000 less crop acres could produce the present U. S. harvests. Seed is treated with chemicals to protect it from insects and diseases as it sprouts. Chemical foods are added to the soils as needed by a particular crop. Chemicals fight insects. The hoe is made obsolete by weed-killing sprays. Stimulating chemicals promote growth. Chemicals protect the food in storage and on the way to the dinner-table.

Science News Letter, October 23, 1954

## ZOOLOGY

**Monkey-Eating Eagles Arrive in Washington**

► **ONE PAIR** of eagles just acquired by the National Zoological Park, Washington, has to be kept away from the monkey house: the new residents are monkey-eating eagles.

Coming from the island of Cebu in the Philippines, the eagles are formidable creatures, one of the most powerful of the tropical eagles. Brown, with long tails, they have crowns of pointed feathers on their heads, and very high, narrow bills. This bizarre kind of eagle actually does feed on monkeys and other mammals and birds.

Few of these birds have arrived in American zoos. The pair just put on exhibition is a young one.

Science News Letter, October 23, 1954

## PHYSIOLOGY

**Paraplegics Aid in Study of Breathing**

► **MORE THAN** 100 paraplegics, whose paralysis extends from the lower limbs to the neck, are helping science with a medical problem.

The problem is this: How many muscles are involved in breathing?

The paraplegics are helping doctors at the University of California at Los Angeles Medical School and Long Beach Veterans Administration Hospital.

Although it is known that abdominal, chest and neck muscles are generally involved in breathing, it is not known just how many of them contribute to respiration.

With the use of a device which measures the amount of air inhaled and carbon dioxide exhaled, breathing impairment among paraplegics in various states of paralysis can be measured.

Since the paralyzed muscles are known in the individuals, the degree of breathing im-

pairment will give an indication of whether those particular muscles are involved in normal respiration or not.

The study is being performed under a U. S. Public Health Service grant by Drs. Alan Hemingway, Ernest Bors and Benjamin Klaumann.

Science News Letter, October 23, 1954

## CHEMISTRY

**Triple Plastic and Glass Make Airplane Material**

► **A MATERIAL** for airplanes that withstands high temperatures, such as would be encountered in flying far beyond the speed of sound was announced to the American Chemical Society meeting in New York. It is made of glass cloth and three different plastic resins.

The new laminate can withstand 500 degrees Fahrenheit for eight days. Dr. William Cummings, chemist of United States Rubber Company's Naugatuck Chemical Division, foresees use of the plastic in ducts for hot gases and for high temperature molds and dies as well as airplanes. It withstands high temperatures better than aluminum or magnesium.

The plastic of the new material is a mixture of maleic alkyd, TAC, or triallyl cyanurate, and DET, or a diallyl bicycloheptene dicarboxylate.

Science News Letter, October 23, 1954

## OPHTHALMOLOGY

**Gold Radon Seeds Stop Eye Tumors**

► **TINY GOLD** radon "seeds" imbedded in the eyes have stopped tumors in five out of six patients, Drs. Arthur Joyce and R. Kaye Scott of Melbourne, Australia, reported at The International Congress of Ophthalmology in New York.

The seeds are left permanently in the eye and as the radium emanations attack the tumor, it slowly recedes.

Because the spaces within the eye are so small, special methods of calculating dosage had to be devised. Measurements of the areas to be treated are made with extreme care, and it is the precise placement of the radon seeds, three to six for each tumor, that produces the uniform radiation.

Three of the six patients treated have now been well for five years. One patient died of heart failure, one is a recent case. In the sixth patient the eye was lost, but the woman was said to be alive and well. The first patient, a young boy treated in 1943, suffered an injury to his treated eye in 1952, but has recovered.

Among the advantages of the methods, the doctors gave the following: that only one operation is needed; that several tumors can be treated at once; that radon seeds are so distributed that the radiation is uniform; complications have been few and mild, and there has not been serious damage to the other parts of the eyes.

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**IN SCIENCE**

## PHYSIOLOGY

**Runners Show Always Moving Fast Is Healthful**

► **KEEP GOING** at a rapid pace all the time or not at all, for your health's sake.

This advice comes from Dr. Burgess L. Gordon, president of the Women's Medical College of Pennsylvania, Philadelphia.

Taking it easy most of the time and then trying to rush in an emergency is harder on the health than hurrying all the time, Dr. Gordon concludes from long time studies of marathon racers.

"Dog-trotting" and marching are the best means of coping with the hurly-burly of modern living, Dr. Gordon declared at the Third International Congress on Chest Diseases in Barcelona, Spain.

"When our friends say to us in parting that we should 'take it easy,' they are giving us the worst possible advice," Dr. Gordon said.

Basing his recommendations on extensive studies of long distance runners over a long period of time, Dr. Gordon finds that there appears to be no harmful effect to the normal body as a result of distance running practiced as a career. And, he points out, many of the men who ran in the '20s still are running cross-country either in contests or for recreation at ages exceeding 60 years.

On the other hand, he reported, long distance runners who abandoned their roles as harriers to become marathon dancers during the dancethon craze of the '30s quickly developed disturbed pulmonary function because of their sloughing gait adopted in endurance dancing.

Science News Letter, October 23, 1954

## PLANT PATHOLOGY

**Winter Rose Disease Checked by Fungicide**

► **A DISEASE**, particularly injurious to rose bushes stored for the winter, has been checked by a water-soluble fungicide.

Dr. Saul Rich, plant pathologist at the Connecticut Agricultural Experiment Station, stated that *Botrytis*, a plant fungus that thrives best in damp, humid storage rooms, can be kept at bay by using a fungicide known as "Vancide 51."

Standard practice has been to take the roses from storage shelves, aerate them and restack them at intervals, snipping off the *Botrytis* infected portions of the plant.

The fungicide, sprayed on the surface of the roses every two weeks, as a one percent solution, kept the disease to a minimum.

Since the fungus attacks other plants, it is now hoped that the spray treatment will prove useful for other plants.

Science News Letter, October 23, 1954

# CE FIELDS

## INVENTION

### Patented Soil Chemicals Even Work on Arid Land

► ARID SOILS treated with alkyl benzene sulfonates soak up more rain, lessen the damage of flash floods, and yield their nutrients more easily to flowers, vegetables, shrubs and trees growing on them, reports Edgar W. Clarke of Laurel Springs, N. J. He has assigned patent 2,689,173, received for his soil-treating chemicals, to The Atlantic Refining Company.

In testing weak solutions of a C<sub>12</sub> alkyl benzene sodium sulfonate, he found that a test strip of sun-scorched grass turned green for a week while adjacent strips, watered without the additive, stayed brown. The same chemical fortified flowering shrubs against frost, stimulated pear-tree growth to two inches in 48 hours, and produced four-inch iris blossoms on 36-inch stalks.

Science News Letter, October 23, 1954

## ORNITHOLOGY

### Country Birds Decline; City Flyers Increase

► MAN'S PROGRESS appears to be having a marked effect in helping city-dwelling birds to increase their numbers, while rural cousins are suffering from a population decline.

Dr. Joseph C. Howell, University of Tennessee ornithologist, described the apparent effect of human population on bird populations to the American Ornithologists Union, meeting in Madison, Wis.

During a five-year survey conducted in Tennessee, Dr. Howell found that the population of rural field birds such as white-eyed vireos, yellow breasted chats, field sparrows, indigo buntings, meadow larks and yellow throats had been almost cut in half.

On the other hand, birds which like to share man's noisy, crowded cities, such as robins, horned larks, mockingbirds, and downy woodpeckers were increasing in number.

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## OPHTHALMOLOGY

### Put TB Drug in Eye With Electric Current

► WHEN TUBERCULOSIS attacks the eyes, it may be possible to put the new anti-TB drug, isoniazid, directly into the eye with an electric current. Experiments looking toward this were reported by Dr. John D. Blum, Geneva, Switzerland, at the International Congress of Ophthalmology meeting in New York.

The technique of using electricity to

bring about penetration of drugs directly into the tissues to be treated is called iontophoresis. It has been in use for a number of years for many drugs.

According to Dr. Blum its advantages are that smaller doses of a drug can be used, thus reducing the expense of treatment, and the direct application avoids the disagreeable side effects that sometimes occur when powerful drugs are injected or given by mouth.

Dr. Blum's experiments showed that five minutes after the application of iontophoresis with the electrodes, isonicotinic hydrazide was recovered from the fluids of the eyes; the amount increased up to 20 minutes, then it decreased gradually.

Further research will show whether the amount deposited in the eye by this method is sufficient to influence the tuberculous infection, and whether it can be applied satisfactorily to human beings.

Science News Letter, October 23, 1954

## PHARMACOLOGY

### New Drug to Slow and Steady Heart Beat

► A DRUG that can both slow the heart and steady its beating has been synthesized by Drs. S. Margolin, Go Lu, J. Yelnosky and A. Makovsky in the Pharmaceutical Research Department of the Schering Corporation, Bloomfield, N. J. (*Science*, Oct. 8).

Dr. Margolin is now with the pharmaceutical department of the Maltbie Laboratories, Morristown, N. J., and Dr. Lu is with the Johnson and Johnson Research Foundation, New Brunswick, N. J.

The drug has the laboratory code name Sch 2684. Chemically, it is 16-cyclohexyl-amino-allopregnandiol.

Its effects in slowing and steadying hearts that were beating too fast and out of normal rhythm were shown in laboratory animals. The scientists think it worthy of trial in patients with certain types of heart disorders.

Science News Letter, October 23, 1954

## ENGINEERING

### G.I. Gear Gets It Hot, Heavy, Cold, Wet

► NATICK, MASS., is where the stuff used by the fighting man gets it hot and heavy, cold and wet, high and low.

There is the newly-built testing center dedicated to better food, clothing, personal gear and shelter for G.I. It is the Army Quartermaster Research and Development Center, full of testing and developmental apparatus to better equip our soldiers.

Ten reinforced concrete buildings house research and development apparatus. There is a little bit of the tropics, a room that can be varied from 0 to 165 degrees Fahrenheit in temperature. An Arctic chamber can subject 25 men to cold from 70 below to 70 above. Winds up to 40 miles per hour can be turned on upon demand.

Science News Letter, October 23, 1954

## PSYCHOLOGY

### Stress Makes Miners Breathing Cripples

► THE COAL miner who is a breathing cripple, unable to work because of "smothering," shortness of breath, cough and chest pain, is in many cases actually suffering from emotional stress much like the combat fatigue of soldiers.

With proper treatment, both physically and psychologically, many of these breathing cripples could go back to work in the mines or elsewhere, Drs. W. Donald Ross, Lee H. Miller, H. Halbert Leet and Frank Princi of Cincinnati report. (*Journal of the American Medical Association*, Oct. 1.)

Of 40 miners they examined, more than half were suffering from emotional as well as physical disorders and about a third from emotional difficulties alone.

Years of hard work in dangerous circumstances, together with living through mine disasters that killed friends, played the chief part in making these men victims of a kind of combat fatigue. The breathing symptoms and disability relieved their anxiety about accidents, but being out of work made them feel insecure and deprived them of an outlet for aggressive feelings that had built up since early childhood days of poverty and hardship.

Improvement in mine safety and earlier recognition and suitable treatment of the miner's emotional stresses are recommended by the Cincinnati physicians and psychiatrists.

Science News Letter, October 23, 1954

## OPHTHALMOLOGY

### Strong Glasses May Make Some Eyes Worse

► ONE KIND of nearsightedness develops as a result of too much close work. It is made worse by wearing strong corrective eyeglasses. It develops through adaptation of the lens and other parts of the eye to demands made on them and is not the result of the shape of the eyeball at birth.

This new explanation of one kind of nearsightedness was given by Dr. Tikaso Sato of Yokohama, Japan, at the International Congress of Ophthalmology meeting in New York.

He called this kind of nearsightedness "school myopia," and stressed that his findings did not apply to "high myopia," a more severe type of nearsightedness.

His findings came from comparing the eyes of people who do near work with those of people who do not. He found no difference between the groups in the corneas or axes of the eyes but did find that the lens had greater refractive power in the near workers.

Prevalence of nearsightedness in the Japanese Navy, he said, has been cut in half by application of his suggested treatment of prescribing weak rather than strong corrective eyeglasses.

Science News Letter, October 23, 1954